



Timor-Leste Population and Housing Census 2010

Analytical Report On Housing Characteristics and Amenities

Volume 13



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Series of Analytical Reports

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2010 Timor-Leste Population and Housing Census

Housing Characteristics and Amenities Monograph

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National Statistics Directorate (NSD)
United Nations Population Fund (UNFPA)

Foreword

The 2010 Timor-Leste Population and Housing Census with the theme “Our Census, Our Future: Be part of it” was conducted in July 2010 on a de facto basis by the National Statistics Directorate. The 2010 census is the second after the one conducted in 2004 (post independent Timor-Leste) and fourth after the 1980 and 1990, both taken under the Indonesian forced occupation. This census was undertaken within the provision of the Statistics Decree Law No. 17/2003 and the 2010 Population and Housing Census Law of April 2010.

The main objective of the census was to collect, analyze and effectively disseminate demographic and socio-economic information required for policy and programme formulation, decision making in planning and administrative processes, and research. The census preliminary results were published in Volume 1 and launched by His Excellency the President of the Republic of Timor-Leste in October 2010. The main results were published in Volumes 2, 3 and 4 and launched by the Vice-Prime Minister in July 2011. After that an ambitious “Sensus Fo Fila Fali” project was undertaken by the MDG Secretariat (Ministry of Finance) in partnership with the Census Project Office that culminated in a Census report for each of the 442 sucos in the country. These reports were launched by the Prime Minister in November 2011, followed by a series of nationwide dissemination workshops held at national, district level and in each of the 442 sucos.

This fourth phase comprises of twelve analytical reports covering census thematic topics: Fertility and Nuptiality, Mortality, Migration and Urbanization, Population Projections, Education, Labour Force, Housing, Disability, Agriculture, Gender, Youth and the Atlas. The preparation of these reports was a collaborative effort by the Government and United Nations Population Fund (UNFPA); it involved local and international experts. The reports were authored under the supervision and guidance of the Chief Technical Adviser from UNFPA. The authors were recruited on competitive basis, ensuring that they had adequate knowledge of the topic they were to analyse.

The Government of Timor-Leste wishes to extend its sincere gratitude and thanks to UNFPA for providing technical, financial and administrative support throughout the census process. Further gratitude is extended to the authors of the analytical reports, the Director of NSD and his team, the Chief Technical Adviser – Census Project, technical staff for their commitment and tireless efforts to successfully undertake the thematic analysis exercise.

Last but not least, all Timorese deserve special praise for their patience and willingness to provide the requisite information which forms the basis of these reports and hence benchmark information for development. We in the Ministry of Finance and Government as a whole hope that the data contained in these twelve monographs will be fully utilized in national development planning process by all stakeholders for the welfare of the Timorese people.



Ms. Emilia Pires,
Minister of Finance

The Democratic Republic of Timor-Leste (RDTL)

Executive summary

In a rapidly changing and urbanising world, the provision of adequate and affordable housing remains a priority for all governments. However, the concept of housing requires a new understanding to effectively address the pressing issues of slums prevention, the urban divide, economic and human development and climate change (UN-habitat 2012). Housing is no longer regarded simply as a roof over one's head due to the crucial role it plays in achieving sustainable development.

Housing Censuses are a source of vital benchmark housing statistics essential for tracking demographic trends, social and economic development, assessing conditions in human settlements, and for use in policy making, planning and research purposes. However because of the dynamism and multifaceted nature of housing as well as some limitations of censuses, specialized surveys are necessary to supplement data generated from censuses.

Timor-Leste has regularly undertaken censuses from its immediate pre-independence and post-independence periods. The 2010 Census was the second in post-independence. The Timorese Censuses have largely abided by the guidelines of censuses as per the Principles of and Recommendations for Population and Housing Censuses Revision 2 (UN 2008). However there is still need to cover some critical topics that have not been exhausted such as those that obtain the number of dwelling units and habitable rooms among others.

The term housing is often either misunderstood or viewed in a mono-dimensional manner. Housing in its comprehensive meaning, refers to the processes and outcomes of the production (construction) and consumption (use) of residential (living) shelters. It also involves the process of analysing the shelter needs of society, organizing the resources and facilitating society to access shelter that is adequate, affordable, functional and environmentally sustainable.

Timorese housing policies and programmes are largely hinged on the National Housing Policy gazetted in August 2007 which aims at contributing to “poverty reduction, social inclusion and economic equity at the overall national level through raising living standards and generally improving the quality of life, with particular reference to the most disadvantaged urban and rural communities”. In addition, through the Strategic Development Plan 2011, the Government targets to build houses for vulnerable people as a key component of the Millennium Development Goals Suco Program (MDGSP).

In view of the objectives for the 2010 Population and Housing Census within the context of housing and in order to address housing policy targets, this Monograph covers three broad areas: **household characteristics** (only to the extent that these characteristics interact with housing dynamics), **housing characteristics**, quality and amenities and **household assets**. The analysis has been anchored on the elements of adequate housing as enumerated by the Habitat Agenda, applying a combination of elements of cross-sectional analytic approach in which differences in household composition are contrasted between physical housing attributes and level of services as well as other relevant components such as economic status and ownership of household assets and some features of longitudinal measurement.

The results of analysis presented in this report should therefore be interpreted within the limitations of any census and particularly the 2010 Timor-Leste Census recognising the fact that the census did not include questions on number of dwelling units and habitable rooms that would enable generation of indicators on housing stock and crowding.

In conclusion, there is need for interventions to improve on the quality of living environment for Timorese households in regard to wall and floor materials, cleaner cooking fuels and access to improved sanitation. There is also need to improve on the coverage of UN recommended housing topics for future censuses.

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CHAPTER 1

INTRODUCTION

1.1 Census Background (History and overview of 2010 Census)

Population and housing censuses are principal means of collecting basic population and housing statistics as part of an integrated program of data collection and compilation. The censuses provide a comprehensive source of statistics required for tracking demographic trends, social and economic development, for assessing conditions in human settlements, and for use in policy making, planning and for research purposes. The collected data also facilitates inter and intra national comparisons over time and to monitor and evaluate progress made in policy interventions.

The history of census taking in Timor-Leste spans three eras of the country's history. This includes the Portuguese colonisation from the mid of the 16th century but more particularly between 1945 and 1975, the Indonesian occupation between 1975 and 2002 and the post-independence era from 2002. Population censuses undertaken during the Portuguese colonization were mainly undertaken for administrative and taxation purposes (GTL 2010). Under the Indonesian occupation, two censuses were conducted in 1980 and 1990 which enumerated a national population of 555,350 and 747,557 respectively. Two censuses have now been undertaken in the post-independence era the first one being in 2004 which netted a population 923,198 while the second one was the 2010 Census.

The 2010 Timor-Leste Population and Housing Census (Census 2010) was conducted pursuant to the Statistics Decree Law No. 17/2003 and a special enactment by The National Parliament of the 2010 Population and Housing Census Law.

The main objectives in preparing this Monograph were to:-

- Review literature in the context of emerging issues and methodological fields
- Assess data quality and limitations
- Compile results in the context of levels and where possible trends within the country, at district levels and where applicable at sub-district level
- Interpret the findings in the context of policies which have impacted on housing and where appropriate make recommendations
- Prepare an analytical report based on an agreed outline

1.2 Overview of Housing (relevance and meaning of housing, policies and programmes)

1.2.1 Housing, context and meaning

A house is a shelter for any living activities of human beings. These activities could include cooking, eating, sleeping and tending children among others. However there are different nuances to housing. It is a physical and environmental good, socio-economic good and a political object.

Housing as a physical and environmental good; shelters human beings from hostilities emanating from the environment. It is a modified (man-made) condition of the human habitat that is intended to protect the human being from the vagaries of weather, from predators and other dangers. As a physical good, it can be broken down into a fixed structure plus services that include water, sewerage, electricity and other utilities.

Housing is also an economic good as well as a political object in the sense that it can be bought and sold in the market in a complete status or in its constituent parts. As an economic good, housing is nevertheless expensive. It may require the expense of a whole lifetime income of a household and in most cases quite a number of households cannot afford decent housing. In this context housing becomes an important indicator of the economic well-being of households, social groups, regions and nations. In analysing the development of a housing policy, it is important to note that it cannot be divorced from economic, political and social processes (Agus et al 2002 pg 3).

The functions of housing as a physical and environmental good and the economic burden of its procurement, consequently brings with it serious implications for public health and public interest. Inadequate income may force households to consume housing which is inadequate either in terms of physical attributes or due to location factors. Consumption of inadequate housing on the other hand may result in the following consequences outbreak of diseases, intense dissatisfaction on the part of the citizens and hopelessness. These consequences therefore make housing a political object particularly when the citizens feel uncertain and attribute their predicament to failed or misdirected policies from local and central government concerning the production and consumption of housing. Such policies could include the building regulations, housing policies and programmes.

To improve the housing situation of the urban poor it is necessary to think in terms of a two level prolonged approach. The first is at the macro level and involves dealing with such factors as land and tax reform, income redistribution, and full employment as part of a coherent urbanization strategy. The second is at the micro level and encompasses addressing housing and a turf oriented set of policies of which, on-sight upgrading of sites and services are major components. The fact that public housing has failed to solve the housing problem of the urban poor in many countries does not mean that it has no place in any country's housing policy (Yeh 1982). Appropriate policy approaches to public housing should therefore be adopted, continuously reviewed and evaluated, based on empirical data and information from housing censuses and surveys, for countries to adopt the most workable urban housing solutions.

1.3 Levels, trends and spatial differentials of housing in the world

The majority of more than six billion people on earth now live in cities (UN habitat report 2012). There are more than 500 city regions of more than one million inhabitants in the world. Cities become megacities, megalopolitan city regions and even galaxies of more than 60 million inhabitants. The Yangtze Delta-Greater Shanghai region now surpasses 80 million. Tokyo-Yokohama adjacent to Osaka-Kobe-Kyoto have a combined population of 100 million. Rapid population growth leads to increased need for affordable housing in most cities.

The availability of affordable housing in proximity of mass transit and linked to job distribution, has become severely imbalanced in this period of rapid regional urbanization and growing density convergence. In addition to the distress it causes families who cannot find a place to live, lack of affordable housing is considered by many urban planners to have negative effects on a community's overall health.

Affordable housing challenges in inner cities range from the homeless who are forced to live on the

streets, to the relative deprivation of vital workers like civil servants, police officers, fire-fighters, teachers and nurses unable to find affordable accommodation near their places of work. These workers are forced to live in suburbs commuting up to two hours or more each way to work. Lack of affordable housing can make low-cost labour scarcer (as workers travel longer distances) (Pollard and Stanley 2007).

1.4 Housing Conditions, Policies and Programmes in Timor-Leste

The housing conditions in Timor-Leste can largely be described within the complex situation in the context of the 1999 post-disaster situation during which over 70 percent of the housing stock especially in Dili was substantially or partially destroyed or burnt in September – October 1999 (Hill and Saldanha, 2001, p. 3). In rural areas, houses are often made with traditional materials such as bamboo, wood and thatch. After every few years, residents have to spend time making repairs in order to keep their homes habitable (Habitat for Humanity¹).

As a result of this historical development, the Government of Timor-Leste requested support for the preparation of a National Housing Policy as a priority activity under the National Development Plan. This was in recognition of the fact that, housing is a serious problem in East Timor, particularly for the urban poor, and requires urgent intervention. The process for preparation of a National Housing Policy for Timor-Leste was brought about by the reality that a sound housing policy is a prerequisite for targeted and appropriate interventions in the housing sector. The complex situation in a post-disaster situation of Timor-Leste required an appropriate housing policy and urban housing strategy.

The National Housing Policy gazetted in August 2007 aims at contributing to “poverty reduction, social inclusion and economic equity at the overall national level through raising living standards and generally improving the quality of life, with particular reference to the most disadvantaged urban and rural communities”

A review of Timor-Leste’s policies on housing are a manifestation, that within most towns and cities, housing has the dominant role in the use of floor space of buildings, the use of land, the consumption of water supply and electricity and the management of waste-water and solid-waste. A UNDP report of 2007 asserts that Dili is no different with over 82 percent of its physical structure dedicated to housing and about 75 percent of those houses located in the unplanned and poorer areas of the city.

While the National Housing Policy is comprehensive enough, its implementation should be preceded by a land administration and regulation body because as cited by Hill and Saldanha (2001), Land titles in Timor-Leste provide the largest hurdle in the success of this policy as “*land ownership disputes are rife*”. In many cases, Portuguese and Indonesian titles overlap, and many people occupying property since 1999 lack any formal claim. The Government is already aware of this need and in 2003 the first Property Law was established to recognize individual titles and to ‘clean up’ this historical fact. The Office of Land and Property is now facilitating the preparation of cadastral mapping and procedures for land-titling (Kingsbury, 2007, p. 165)

The Strategic Development Plan 2011 recognizes the challenges of the Timorese housing sector and aptly affirms that “*while many young people will naturally be attracted to cities, Dili is already experiencing rapid population growth – from 175,730 people in 2004 to 234,026 in 2010 – and housing and other infrastructure have not been able to keep up with the demand*”.

¹ Accessed from http://www.habitat.org/intl/pdf/east_timor_pdf.pdf on 23rd October 2010

To address the acute shortage of housing, the government targets in the SDP 2011 to build houses for vulnerable people as a key component of the Millennium Development Goals Suco Program (MDGSP). Under the Program, five houses will be built in each of the 2,228 Aldeias every year, resulting in more than 55,000 houses being built by 2015. The government will also progressively increase expenditure levels and spending in the areas of education, health, housing, food security and core infrastructure throughout Timor-Leste (SDP 2011 pg. 203) and particularly use public investment to build housing complex in Kamanasa (SDP pg.138).

As the government implements these initiatives aimed at improving the housing situation in Timor-Leste, there is still a challenge of land tenure, ownership and administration which has impacted negatively on planning and quality of housing both in rural and urban areas. As depicted by the results of the Demographic and Health Survey of 2009/2010, a significant majority i.e. 60.2 percent of households in Timor-Leste have houses with earth/sand floor depicting a generally poor state of the housing they live in. The situation is not any better in rural areas where 70 percent of households live in houses with earth/sand floor finish. In the urban areas, a sizable 27 percent of households live in houses with earth/sand finish.

1.5 Preview of the Housing Monograph

The Monograph basically covers three broad areas that is: household characteristics (only to the extent that these characteristics interact with housing dynamics), housing characteristics and quality and housing amenities and household assets. The Monograph also enumerates key factors of housing in its comprehensive definition, the policy paradigms and international policy platform addressing housing and human settlement issues. Elements of housing have also been teased out in so far as the data could allow. A brief recommendation based on comparison of the structure of the housing section of the questionnaire of census 2010 and the UN recommendations on Population and Housing Censuses Rev 2 of 2008 has been proposed.

1.6 Summary of key findings

There was a strong relationship between household size and consumption of housing as an economic commodity. The census results revealed a fairly higher national average household size of 5.8 compared to other Asian countries. For instance, according to Ramesh and Asher (2000 pg. 72), the average household size in Philippines, Indonesia and Malaysia was 5.3, 4.5 and 4.9 respectively between 1990 and 2000. The districts posted a range of average household sizes from a minimum of 4.6 in Oecusse to a maximum of 6.6 in Dili. At the national level, most households were almost uniformly spread between 3 person households through to 7 person households. This is also appropriate compared to the results of the DHS 2009 and also with Census 2004².

Changes in the age distribution of a population often lead to shifts in average household sizes as different age groups had different propensities to form households. The results depict a uniform trend in headship through all the age groups, with age group 35 – 39 being the peak as reflected. On the overall, majority (over 48%) of household heads at the national level and also in urban and rural areas fall within the age range 30 to 50. While the mean age of heads of households stands at 47, 42 and 48 at National, Urban and Rural jurisdictions respectively, 14.2 percent of households are female-headed. Most of the districts have between 12 and 15 percent of female headed households. The only exception is Lautem district whose percentage of female headed households is at 20.3 percent, way above the national figure.

² Comparison with Census 2004 should be interpreted with caution because the definition of household applied was slightly divergent from the definition applied in Census 2010

Considering the socio-economic characteristics of heads of households, the results divulge that on one hand, majority (90.8 percent) of the male heads of households were married while only 39.9 percent of the female heads of households were married. On the other hand, a significant 47 percent of female heads of households were widowed compared to only 3.6 percent of the male heads of households who were widowed. Again, fewer (28.5 percent) of the female heads of households had formal education (primary to university) compared to 53.1 percent of the male heads with formal education.

The majority of female heads were own account workers while a significant percentage i.e. 19 percent are engaged in house work. Only 12.4 percent of the female heads are employees compared to 28.6 percent of the male heads who are employed.

Housing tenure describes the legal status under which household or particularly the people have the right to occupy their own accommodation. The census results reflect a fairly high ownership rate of 95.7 percent at the national level and 87.1 and 98.6 percent in urban and rural areas respectively. However, while there is no direct relationship between the tenure status and sex of the head of household, there is a relationship between tenure and age of head of household as reflected by the fact that, out of the households who own their dwellings, only 3.4% were headed by people aged 15 to 24 while 52.1% were headed by people aged 45 and above.

The relationship between tenure and construction materials presents some variance in the dominant wall materials, when comparing households who live in houses owned by either the family or the individual head and those who live in houses owned by other agencies. For instance out of the households captured in rural areas, 69.6 percent compared to 16.7 percent of those who do not own and those who own respectively had their dwelling outer walls in concrete and/or brick.

From the census data, durability may be derived from the materials for wall, roof and floor. UNESCO³ proffers that a house is considered as durable if it is built on a non-hazardous location and has a structure permanent and adequate enough to protect its inhabitants from the extremes of climatic conditions such as rain, heat, cold or humidity. The census and other surveys so far conducted reveal that over the years particularly between 2001 and 2010, majority (over 60 percent) of Timorese households still occupy houses with walls made from traditional materials. Analysis of the floor materials revealed that the most common floor finish for urban households were cement, concrete, tiles and earth which posted 52.2, 19.9 and 21.1 percent respectively, while rural households with cement, concrete and earth floor finish were 17.3 and 71.8 percent respectively. At the national level a significant majority (over 65 percent) of the households had modern roofing materials.

Water and sanitation are critical elements that determine safe and healthy living environments. The census results presented a double edged picture on the state of water and sanitation; in that while a decent 65.9 percent of households use safe and improved water sources for drinking, a staggering 60.8 percent did not have access to improved sanitation facilities.

Household energy consumption for lighting, warmth, cooling, water heating, electronic entertainment was integral part of housing dynamics. It was striking to note that, nationally majority (89.9 percent) of households in Timor-Leste used wood as their cooking fuel. 40.5 percent, 51 percent and 8.5 percent of households used clean, improved and unimproved fuels respectively for lighting. Comparing rural and urban areas, results indicated that a significant majority (87.9 %) of urban households derived their lighting fuel from clean sources while a paltry 3.2 percent of the urban households derived their lighting fuel from unimproved sources of lighting fuel.

³ Slum profile indicators - http://www.unesco.org/water/wwap/wwdr/indicators/pdf/C3_Slum_profile_in_human_settlements.pdf

Housing quality is a comprehensive concept that outlines whether or not housing is sufficient to meet recognized housing quality standards as well as specific household needs (Conley and McCray 1997 pg. 5). It takes into account, type of construction, materials used, and amount of space, services and facilities, condition of facilities within and outside dwellings, function and aesthetics among many others (Jiboye 2010 pg. 79). Based on this and applying a consolidated housing quality index, the results showed that 0.2, 10.4, 23.8, 46.8, 18.8 percent of households lived in housing of quality ranks 1, 2,3,4 and 5 respectively where rank 1 is best and 5 worse. Overall, 54 percent of households in Timor-Leste lived in deficient housing.

1.7 Organisation of the Housing Monograph

This monograph consists of ten chapters. The background of the in-depth analysis on housing in Timor-Leste is presented in Chapter 1. In Chapter 2 the assessment of data quality, definition and concepts as well as the methods used for the in-depth analysis are discussed. The analysis of housing levels, trends and differentials in Timor-Leste are conveyed in the proceeding chapters. The monograph is closed with the conclusions, recommendations, references and appendices.

CHAPTER 2

CONCEPTS, DEFINITIONS AND METHODOLOGY

2.1 Housing in the 2010 Census: an assessment of data quality

The topics of decennial census in the world over are selected from a list of topics recommended by the United Nations for investigation in housing censuses. The current UN recommended housing census topics are contained in the *Principles of and Recommendations for Population and Housing Censuses Revision 2* (UN 2008).

The post-independence Timor-Leste Population and Housing Censuses included the housing component in line with the UN recommendations. However, an assessment on the topics included in the 2010 Census revealed that while an attempt was made to include some of the recommended topics for instance, those on wall, floor and roof materials and access to services such as water, sanitation and lighting (due to resource limitations); not all the core topics that would provide a count on the number of dwelling units and habitable rooms were included.

This is not unique to Timor-Leste. The trend is that, most national governments carry out censuses of housing in different years; they often collect different variables from one another, which are defined in ways that differ from those of other governments and, occasionally, differ from their own practices in earlier years. Thus, for statistical purposes, what is counted as a room may depend on its size (rooms below specified floor areas may be excluded) and function (kitchens and bathrooms may be excluded) (Vliet 1990; Doling 1997 as cited in Agus et al 2002). As a result, comparison of housing census data over the years, within and between countries has been a major challenge.

Most countries, especially in the advanced economies also undertake surveys to complement census data in measuring aspects of their economic, demographic and social dynamics including housing. Such data is invaluable in understanding the main characteristics of an individual country but more so in comparison between countries. However, there are considerable difficulties in the interpretation of the data. Whereas there is a consensus developed about the definition of many economic variables – such as GDP and unemployment – that allows a fairly solid empirical foundation to comparisons of national economies, this is not the case with respect to measures of housing stocks and housing policy (Agus et al 2002 pg. 1)

2.2 Concepts and definitions

Housing: the process and outcomes of the production and consumption of residential shelters. It includes the physical product, the process that yields the product and the socio-cultural and environmental circumstances in which the product is developed, delivered and used. It also involves the process of analysing the shelter needs of society, organizing the resources and facilitating society to access shelter that is adequate, affordable, functional and environmentally sustainable.

Housing need: refers to households who lack their own housing or live in unsuitable housing and who cannot afford to meet their housing needs in the market. It can be described as the extent to which the quantity and quality of the existing stock falls short of that required to provide each household with accommodation of a prescribed standard (Tym and Jordan 2006)

Urban: For purpose of the 2010 Timor-Leste Population and Housing Census manual for mapping, an urban area was classified as district headquarters with built up areas. Areas which did not fall under the above classification but posed the following characteristics were classified as urban

1. Have a population of about 2,000 people or more;
2. Have less than 50 percent of its population employed in agricultural/fisheries activities majority being employed in modern sector.
3. Have paved roads, electricity and piped water.
4. Have access to schools, medical facilities and recreational facilities.

Structure: A structure is a building used for the purposes of residential, business, religious, or any other activity. For 2010 census purposes, a structure constitutes a building used for dwelling purposes (housing unit by the household). A structure can contain one or more housing units.

Housing Unit: This is a place of abode or residence occupied by one or more households with a **private entrance**. There can be many housing units within a structure. In Census 2010, the terms **housing unit** and **dwelling unit** have been used interchangeably.

Private/Conventional Household: A private household consists of a person or a group of persons who live together in the same compound but not necessarily in the same dwelling unit and have common housekeeping/cooking arrangements. Members of a household are not necessarily related by blood or marriage.

2.3 Analytical Approach

While the overall approach in this analysis has been anchored on the elements of adequate housing as enumerated by the Habitat Agenda (1996) the specific method employs a combination of elements of cross-sectional analytic approach in which differences in household composition are contrasted between physical housing attributes and level of services as well as other relevant components such as economic status and ownership of household assets and some features of longitudinal measurement.

2.4 Limitations to the study

As is the case with most censuses, attributes that require measurement and monetary evaluation are never part of the instruments. This was the case with the 2010 Timor-Leste Population and Housing Census. As a result this analysis is limited to attributes that were covered in the census questionnaire and are only compared to results from surveys that are similar in structure. Therefore housing factors requiring measurements such as average size of room or monetary values such as amount of rents are beyond the scope of this analysis.

Toilet sharing: The data did not cover the rate of sharing for example if sharing, with how many other households does the household share its toilet facility. As a result it may not be feasible to gauge the extent of inadequacy of the facilities for those households that shared.

Housing stock: No question generated data for establishing the housing stock.

Crowding: No question asked about the number of habitable rooms available for the households as such we could not derive the levels of crowding

2.5 Methodology

Housing census data usually involves facets that can be easily verifiable by observation even by non-technical field assistants. As a result housing data is therefore characteristically devoid of difficulties such as those that arise in population parameters for example those associated with

determining say the number of children a woman has ever born or age for that matter which are not easily verifiable. Nonetheless housing data has its share of conceptual difficulties that may affect data quality. As a result, the author reviewed data quality through the following steps.

As a first step in reviewing data quality for the housing component of the 2010 Timor-Leste Population and Housing Census, the author assessed Data Quality Objectives (DQO) and outputs to ensure that they were applicable particularly in relation to the objectives set out in the United Nations Principles and recommendations for Population and Housing Censuses Revision 2 of 2008. The author was of the opinion that the housing module of the 2010 census largely complied with the requirements of the UN 2008 recommendations in terms of quality objectives although the housing component did not capture some of the key data regarding count on the number of dwellings and number of habitable rooms. This limited the application of the data in assessing some variables such as crowding which would have been a good basis for assessing overall quality.

Secondly, the author conducted a preliminary data review and in so doing reviewed some quality assessment reports from the data processing team, calculated basic statistics, and generated graphs of the data. This information has been used to learn about the structure of the data and identify patterns, relationships, or potential anomalies. Alongside this, consistency checks were undertaken to identify and remedy any inconsistencies. Comparisons were made with previous censuses, surveys and international/regional trends which yielded very encouraging convergence as can be observed in the body of this analytical report.

From the processes enumerated above, except for any incidences of enumerator bias resulting from either conceptual difficulties or otherwise and/or definitional inadequacies, the data is satisfactorily good for policy and programmatic decisions and interventions.

CHAPTER 3

HOUSEHOLD CHARACTERISTICS

It is generally accepted that the household or the family is the primary unit of consumption of most commodities as well as housing. The household serves as a basic unit of housing demand since it is a unit of common dwelling (Park et al 2002). Movements between various types of dwellings, located in a system of spatial sub-markets are determined to a large extent by the (changes) in the composition of the household. Thus, to a large extent household dynamics is the basis of housing market dynamics (Hooimeijer & Linde, 1991).

In order to plan for appropriate and adequate housing it is necessary to assess the demographic factors that contribute to household structure and formation change in any country. The need for new housing resulting from the demographic dynamics in a population is largely dictated upon by household structure and size. Elements of household dynamics included in this monograph are not exhaustive enough to capture the entirety of this emerging branch in demography but will be applied only to the extent necessary to explain and elaborate on housing conditions.

3.1 Household size

There is no doubt that there is a strong relationship between household size and consumption of housing as an economic commodity. The Census results depicted fairly high average household sizes compared to other surveys. For instance, compared to the results of the DHS 2009, the average household size nationally (5.8 in both census and DHS) and in rural areas (5.6 in census and 5.8 in DHS) compared well. However, a slight departure emerged from the 2010 census where the average household size in urban areas stood at 6.6 which was slightly above what was reported in DHS. Of important revelation is the higher average household size in urban compared to rural areas. The picture when comparing the districts was fairly consistent with the national figures with most of the districts posting a range average household sizes from a minimum of 4.6 in Oecusse to a maximum of 6.6 in Dili. The relatively higher average household size in Dili has greatly contributed to the higher average household size for urban areas at the national level.

Table 3.1: Mean Household sizes (Census 2004 and 2010)

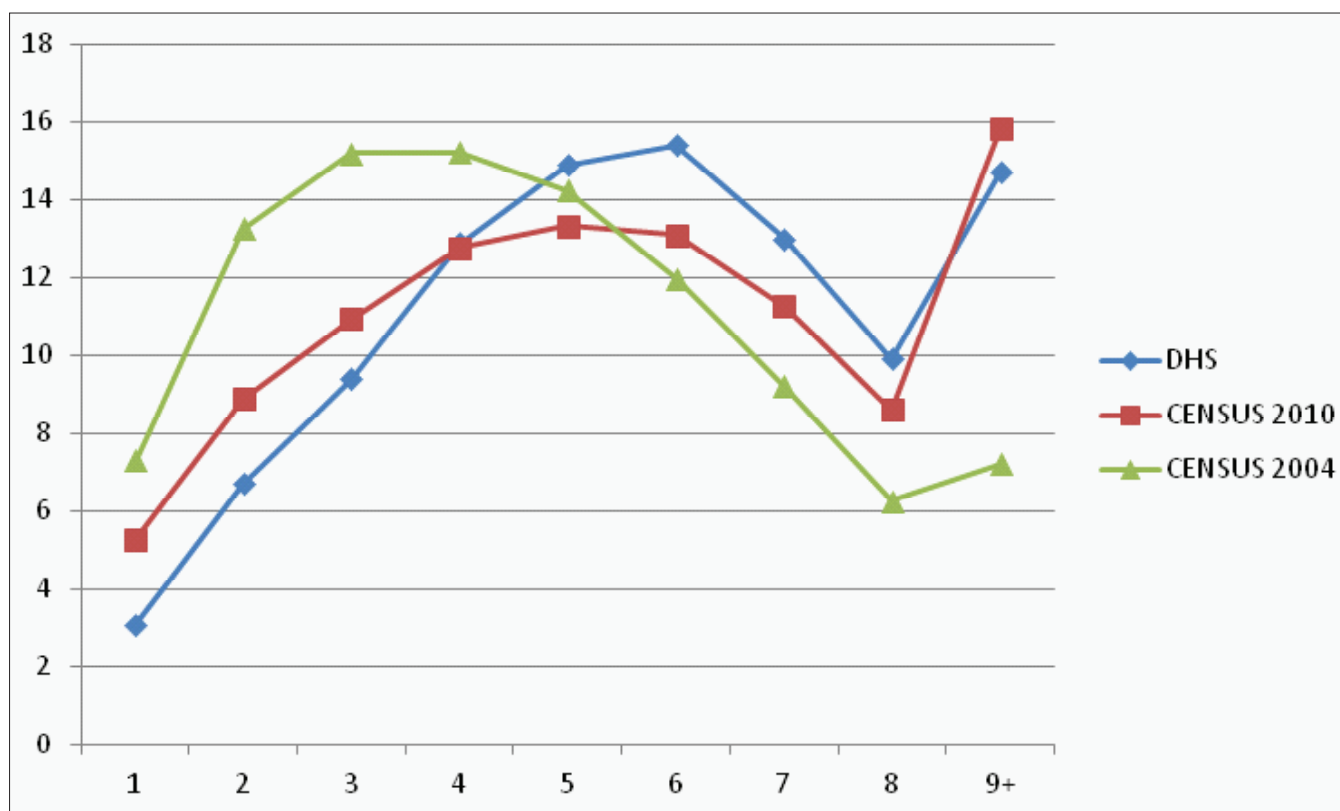
	Census 2010	DHS 2009-10
Timor-Leste	5.8	5.8
Urban	6.6	5.9
Rural	5.6	5.8

A comparison with other countries of Southeast Asia revealed that the household sizes in Timor-Leste were slightly higher compared to other countries. For instance, Ramesh and Asher (2000 pg 72) showed that the average household size in Philippines, Indonesia and Malaysia was 5.3, 4.5 and 4.9 respectively between 1990 and 2000.

The relatively high average household size in Timor-Leste may be attributed to several factors mainly demographic, socio-cultural, political and economic in nature. However, in cases of large average household sizes, it may be argued out that either the housing units are large enough allowing for larger families to co-reside, or, alternatively, that a shortage of housing units obliges more people to share a house. In the case of Timor-Leste, the number of dwelling units and habitable rooms were not captured in the Census which would have facilitated a conclusion linking the large average household size to housing adequacy.

At the national level, most households were almost uniformly spread between 3 person households through to 7 person households. This is also appropriate compared to the results of the DHS 2009 and also with Census 2004 as presented in the Figure 3.1 below:

Figure 3.1: Percentage households by size Census 2010, 2004 and DHS 2009



3.2 Household structure

3.2.1 Household classification and type

According to UN (2008 pg 132), households should be classified according to the number of nuclear family its contains and the relationship if any or between the nuclear family and the other members of the household. Classification of households by relationship to the head provides an intricate structure of the households especially as it relates to familial dynamics which are useful in assessing housing requirements in any community. For instance due to socio-cultural and economic factors, a household consisting of a couple and their children should ideally have at least two rooms; one for the parents and another for the children.

The UN classification was modified for application in the 2010 Timor-Leste Census but remained largely congruent to the UN classification. This classification is reflected in the Table 3.2 below:

Table 3.2: Household Classification

COUPLE						NON COUPLE					
COUPLE	COUPLE + CHILDREN	COUPLE + CHILDREN AND OTHER RELATIVES	COUPLE + CHILDREN + NON-RELATIVES	COUPLE + CHILDREN + OTHER RELATIVES + NON-RELATIVES	COUPLE + RELATIVES OR NON-RELATIVES	SINGLE PERSON	SINGLE + CHILDREN	SINGLE + CHILDREN + OTHER RELATIVES	SINGLE + CHILDREN + NON-RELATIVES	SINGLE + CHILDREN + OTHER RELATIVES + NON-RELATIVES	SINGLE + RELATIVES OR NON-RELATIVES
1	2	3	4	5	6	7	8	9	10	11	12

With the classification demonstrated above, it emerges from the census data that, majority of Timorese households are composed of either a spouse living with their children or a couple living with their children and relatives as depicted further in the Table 3.3. As illustrated in the Table 3.3, the highest concentration of types of households is observed in categories 2 and 3 in both years. Of importance to note is that while on average, the overall percentage number of households that are composed of the nuclear (i.e. categories 1,2,7 and 8) family is generally significant at 52.8 percent, the percentage of nuclear families dropped from 66 percent in 2004 to 52.8 percent in 2010. This trend is contrary to the tendency in most countries even in Southeast Asia where nucleation has been the common trend following increased industrialization and urbanization in the recent years.

In fact, it is generally acknowledged that urbanization processes tend to stabilize the nucleation of the family system. In some Asian countries because urban congestion and housing patterns, particularly of the low income groups, large households are discouraged. However, this does not hold for Timor, which could be attributed to the existing strong religious, cultural and societal affection. Also there was a short resurgence of instability after the 2004(2005/2006) Census which may have re-shaped the composition of households and encouraged flocking, hence reducing the match towards nucleation.

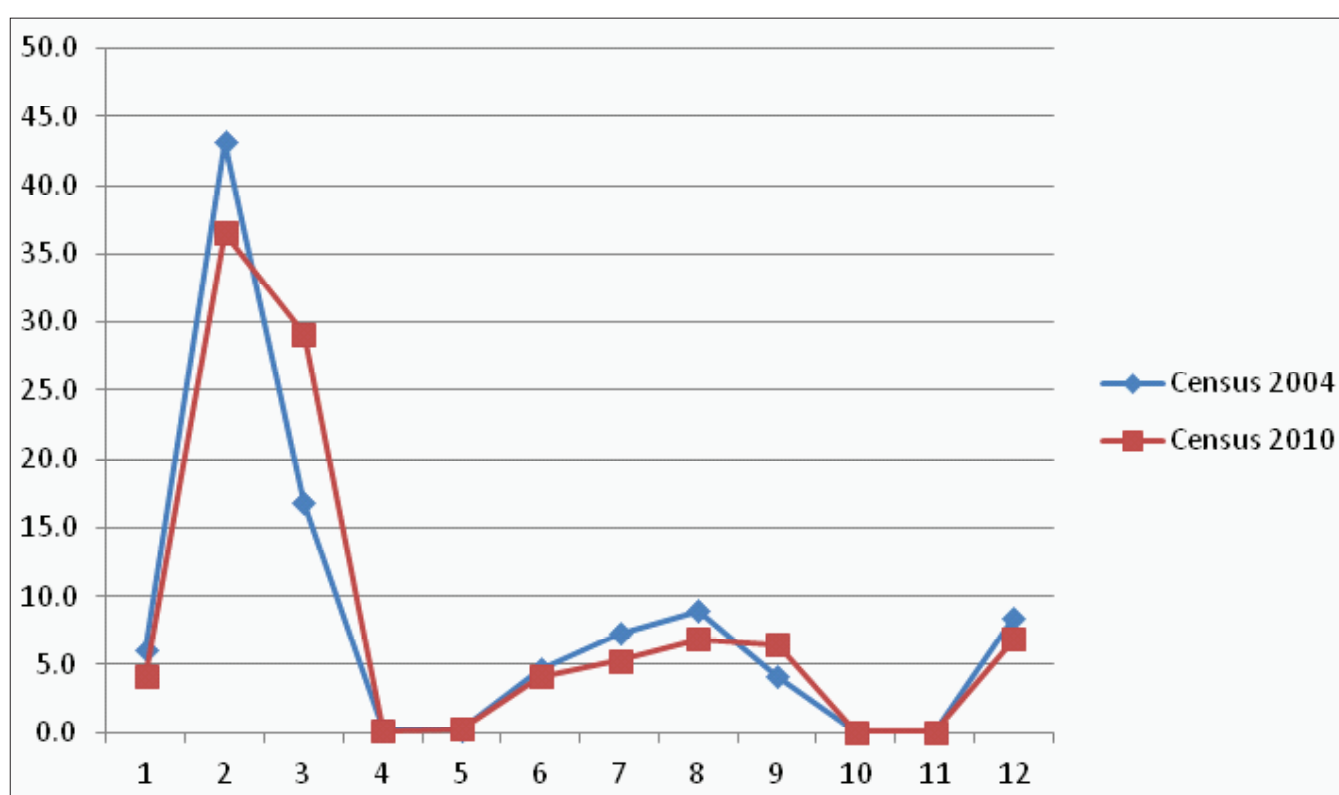
Overall, about 74.4 percent of households in 2010 were composed of couples (i.e. category 1 to 6) in 2010 compared to 71 percent in 2004. The two dominant types of households (category 2 and 3) were mainly composed of households of size 3 to 9. More particularly, 83 percent of households composed of a couple and their children which comprised of about 3 to 7 people, while 68.1 percent of households composed of a couple, their children and relatives constituted between 5 and 9 people.

Table 3.3: Percentage households by classification of households

Household Classification												
	1	2	3	4	5	6	7	8	9	10	11	12
Census 2010	4.1	36.5	29.2	0.2	0.3	4.1	5.3	6.9	6.5	0.0	0.1	6.9
Census 2004	6.1	43.2	16.8	0.2	0.2	4.7	7.3	9.0	4.1	0.0	0.0	8.5

A further scrutiny reveals that the structure of most Timorese households has generally remained the same over the years between the 2004 and 2010 censuses (see figure 3.2).

Figure 3.2: Percentage households by household classification



With a standard of at least a room each for parents and children on the one side and one more for relative and non-relatives, it would mean that the appropriate accommodation for Timorese household would be a minimum of three habitable rooms for 30 percent of the households and a minimum of two rooms for at least 40 percent of households. Only 10 percent of households that are either couples without children or single persons without children may be accommodated in one room dwellings. These necessities would have been evaluated against the actual accommodation available for the households if the census had collected information on the number of dwelling units and habitable rooms. Due to this limitation, this analysis is unable to make this evaluation.

3.2.2 Household Heads by age and sex

Changes in the age distribution of a population often lead to shifts in average household sizes as different age groups have different propensities to form households. This effectively affects housing consumption parameters. Analysis of household heads by ages indicated that at the national level and when contrasting the rural and urban dichotomy, the results depicted a uniform trend in

headship through all the age groups, with age group 35-39 being the peak as reflected in the figure 3.3 below. On the overall, majority (over 48 %) of household heads at the national level and also in urban and rural areas were aged between 30 and 50 years.

Figure 3.3: Percentage households by age of head – census 2010

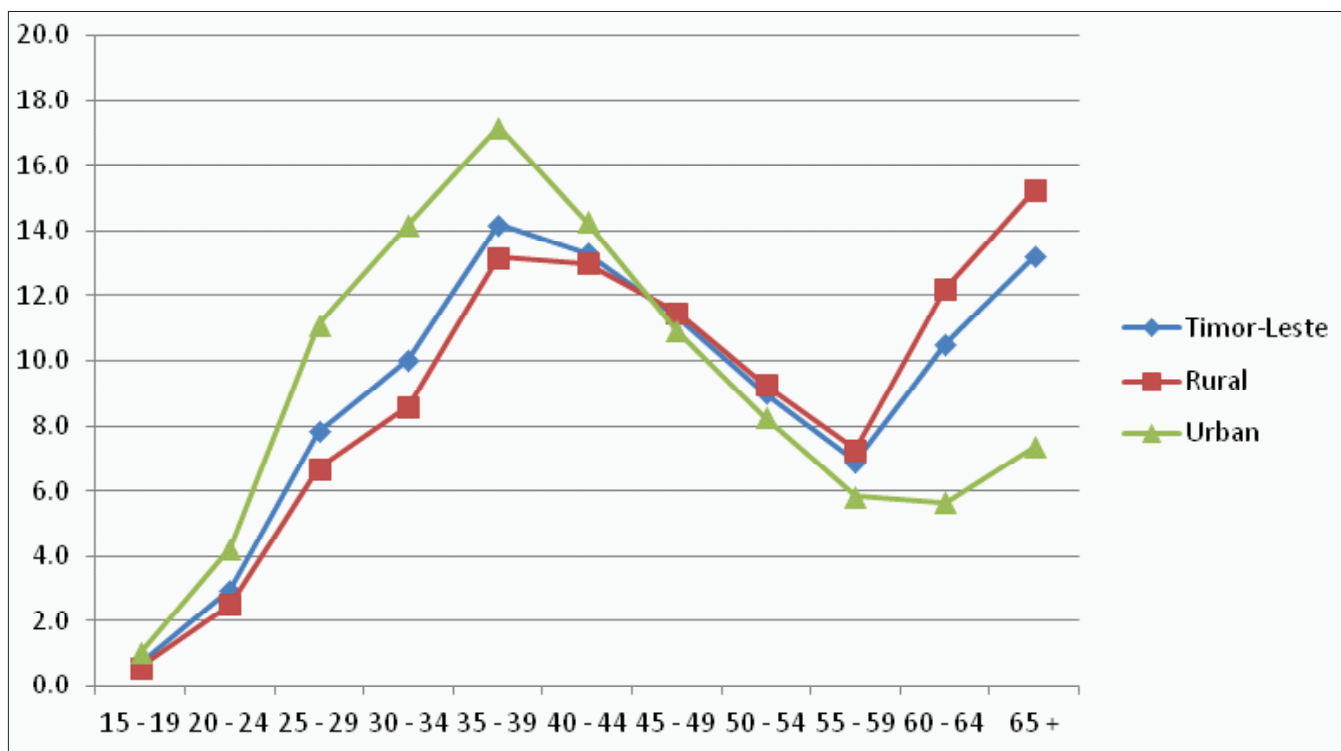
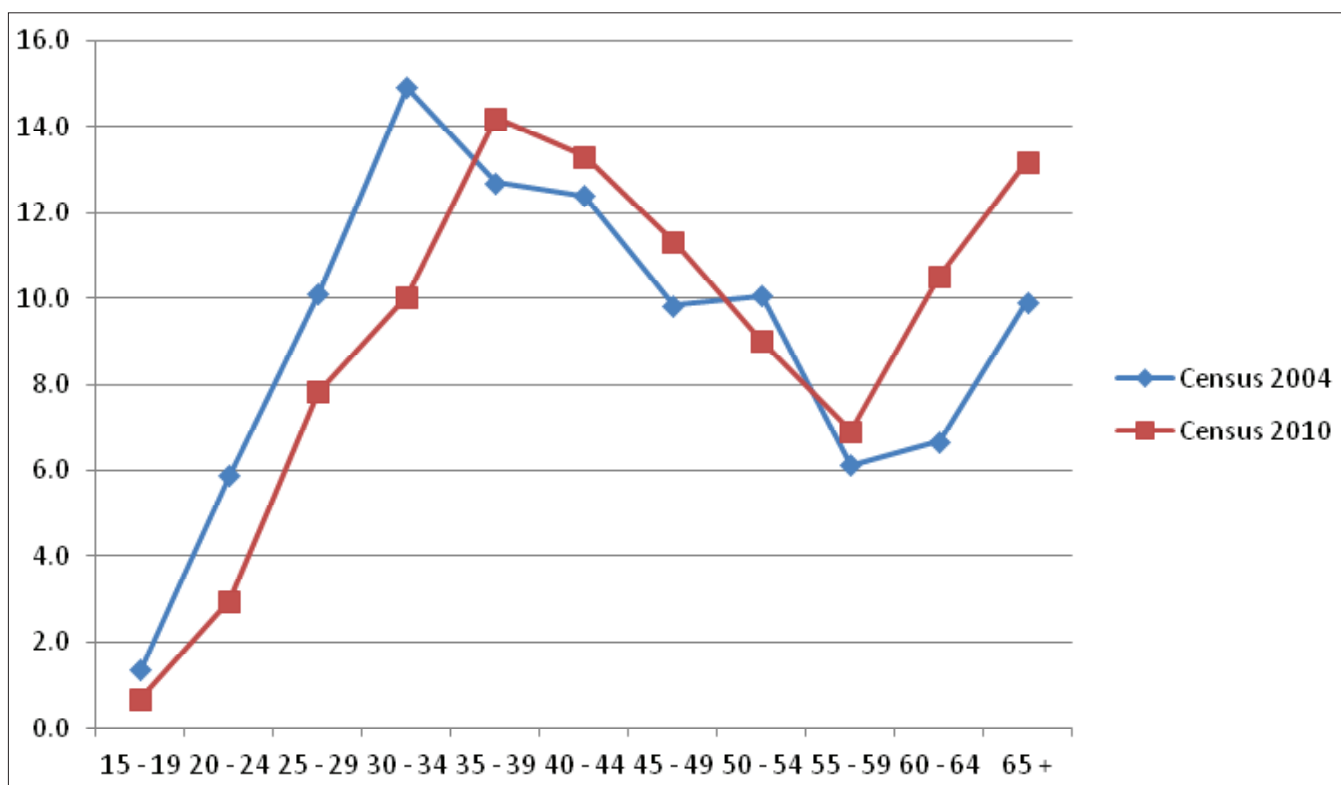


Figure 3.4: Percentage Households by age of head – National (Census 2004 & 2010)



An evaluation of the household heads and age group in the districts depicts a similar trend observed at the national level. The only slight deviation being that in some districts the peak was at 35 to 39 while in others, the peak was at 40 to 44. The peak for each district is highlighted in the table 3.4 below.

Table 3.4: Percentage Households by district and age of head – census 2010

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
Timor-Leste	0.7	3.0	7.8	10.0	14.2	13.3	11.3	9.0	6.9	10.5	13.2
Ainaro	0.7	2.2	6.5	9.5	14.7	13.5	9.1	6.8	4.7	18.1	14.3
Aileu	0.9	2.1	6.2	6.1	11.7	14.7	12.8	11.6	8.1	12.8	13.0
Baucau	0.5	2.2	5.4	6.9	13.0	12.6	12.1	9.4	9.1	11.5	17.3
Bobonaro	0.8	2.4	6.8	8.5	11.7	12.5	12.3	9.3	6.8	11.8	17.0
Covalima	0.7	3.2	8.2	9.5	14.0	12.9	11.3	8.5	5.5	12.1	14.3
Dili	0.4	4.2	12.5	14.8	17.5	14.3	11.0	8.4	5.7	4.9	6.3
Ermera	0.8	2.9	6.8	9.1	13.9	15.0	11.8	10.3	7.7	9.9	11.7
Liquica	0.9	3.1	6.5	6.7	12.3	12.4	11.4	10.8	8.0	13.2	14.6
Lautem	0.9	2.2	4.9	10.0	14.5	13.9	12.0	8.9	7.8	8.6	16.2
Manufahi	0.4	2.2	7.2	8.5	13.2	13.7	10.7	9.4	8.1	11.8	14.8
Manatuto	0.5	2.5	6.3	7.8	12.7	12.4	12.6	9.8	7.3	12.2	15.8
Oecusse	0.8	3.8	9.4	11.8	13.3	12.5	11.1	8.1	6.3	11.8	11.0
Viqueque	0.8	3.0	6.8	11.5	15.7	11.4	9.1	7.4	5.9	11.6	16.9

The results in the Table 3.4 above are consistent with the overall mean age of heads of households which stands at 47, 42 and 48 at National, Urban and Rural jurisdictions respectively. Of importance to note is that at the national level and in all the districts, the mean age of female heads of households is generally higher than the mean age of male household heads by an average of 4 years.

Table 3.5: Mean age of household heads

	All	Male	Female
Timor-Leste	47	46	50
National- Urban	42	42	46
National - Rural	49	48	52
Ainaro	48	48	52
Aileu	49	48	51
Baucau	50	49	54
Bobonaro	49	48	51
Covalima	47	47	50
Dili	42	41	46
Ermera	47	46	50
Liquiça	49	48	52
Lautem	49	47	50
Manufahi	48	48	50
Manatuto	49	48	51
Oecusse	46	45	49
Viqueque	48	47	52

3.2.3 Female Headed Household

In terms of gender of the household head, the results showed that 14.2 percent of households were female-headed. The national figure does not deviate much from the percentage of female headed households in urban and rural areas which stands at 14 and 14.3 percent respectively. The results however deviate slightly from the outcome of the DHS 2009 which reported the percentage of female headed households at 12.3(DHS 2009 pg 13). The results of Census 2004 on the other hand showed that 18.9 percent of the households were female headed (Census 2004 Report pg 204). This significant variation may emanate from two factors; first the census 2004 was conducted close to the immediate post independence skirmishes which could have yielded some deaths of male heads of households or mass displacement of targeted males to other locations. Secondly, the structural difference in application of the households between census 2004 and 2010 may have also contributed to this variation.

The percentage of households which are female headed in most of the districts is fairly close to the national percentage of 14.2 percent. Most of the districts had between 12 and 15 percent of female headed households. The only exception being Lautem district whose percentage of female headed households was at 20.3 percent, way above the national figure. When comparing the percentage of female headed households and the variance between percentage of male and female headed households (see figure 3.5 below), one realizes that this variance equally peaks for Lautem. Therefore, education variance may be the plausible explanation to higher percentage of female headed households in Lautem. The overall picture is presented in the figure 3.6 below:

Figure 3.5: Percentage Female Headed Households by districts – census 2010

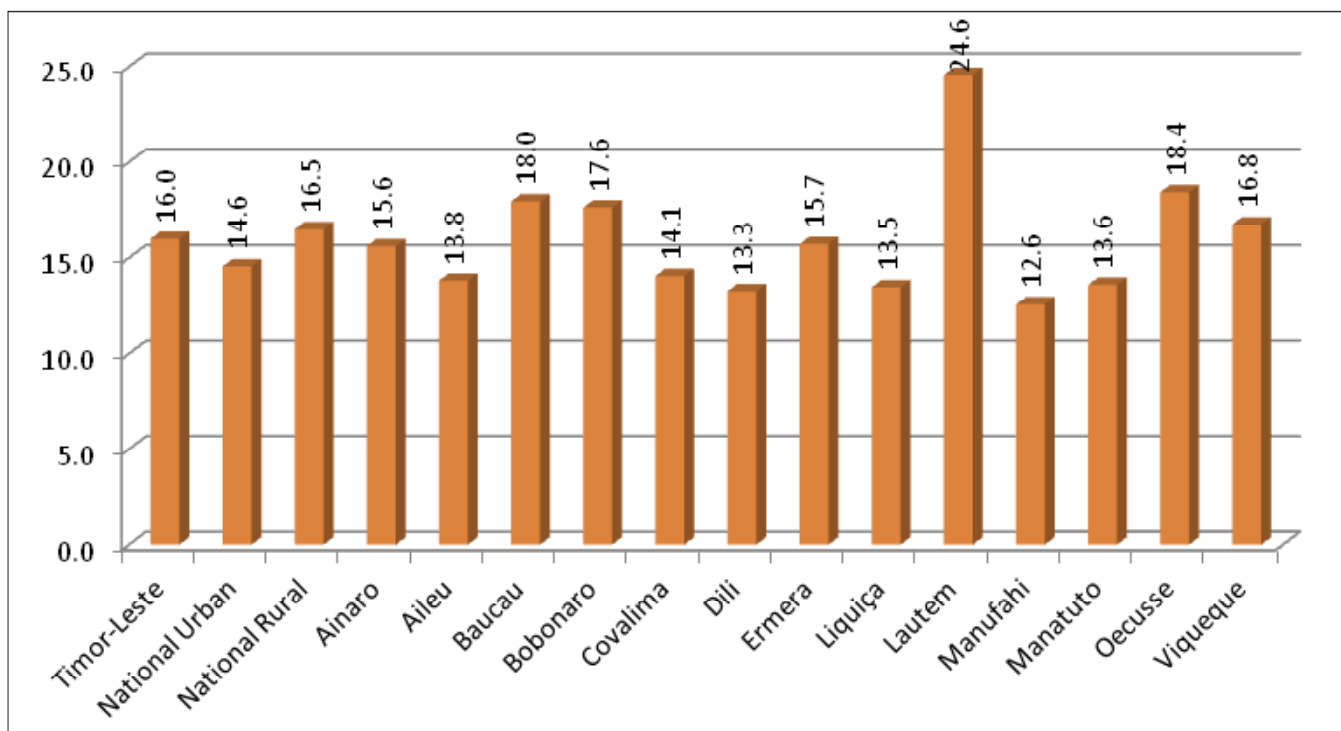
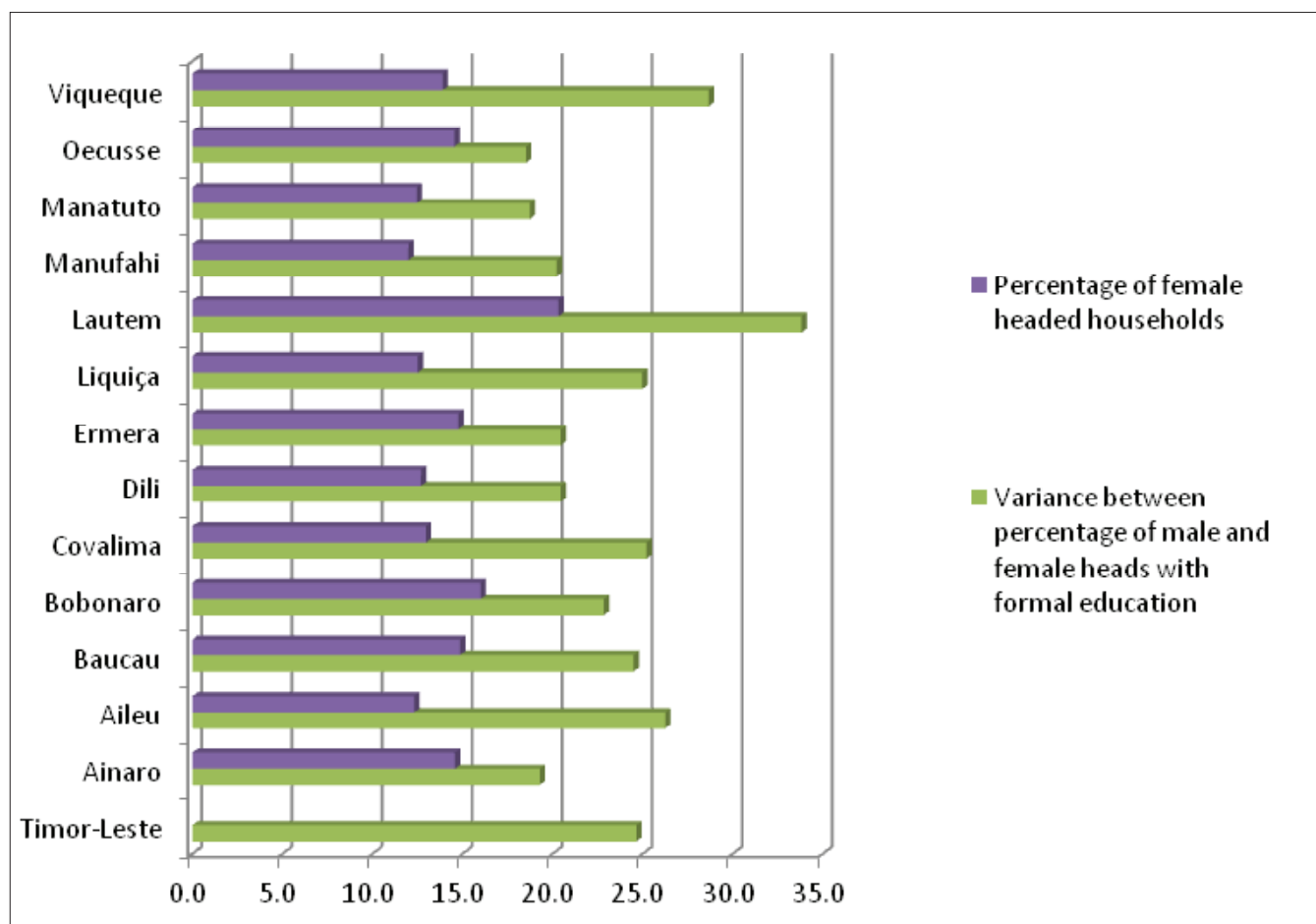


Figure 3.6: Percentage households by sex of head and variance in education of head – census 2010



Global comparisons of the proportion of female headed households indicates that the percentage of female headed households in Timor-Leste is among the least in the world, with Belarus and Macedonia having the highest and lowest percentages at 53.9 and 7.6 respectively⁴. The percentage of female headed households in Timor-Leste when compared to Southeast Asian countries is average. For instance, the percentage of female headed households in Indonesia and Philippines is 12.9 percent and 18.7 percent respectively. This can be explained by the fact that in many societies in Asia, the oldest male is designated as the head of household regardless of whether he is the primary source of economic support, the authority figure, or fulfills other tasks purportedly performed by household heads (Ayad et al., 1997⁵). This may explain the generally lower rate of female headed households emanating from the census data of Timor-Leste

⁴ Source: <http://www.nationsencyclopedia.com/WorldStats/Gender-female-headed-households.html>

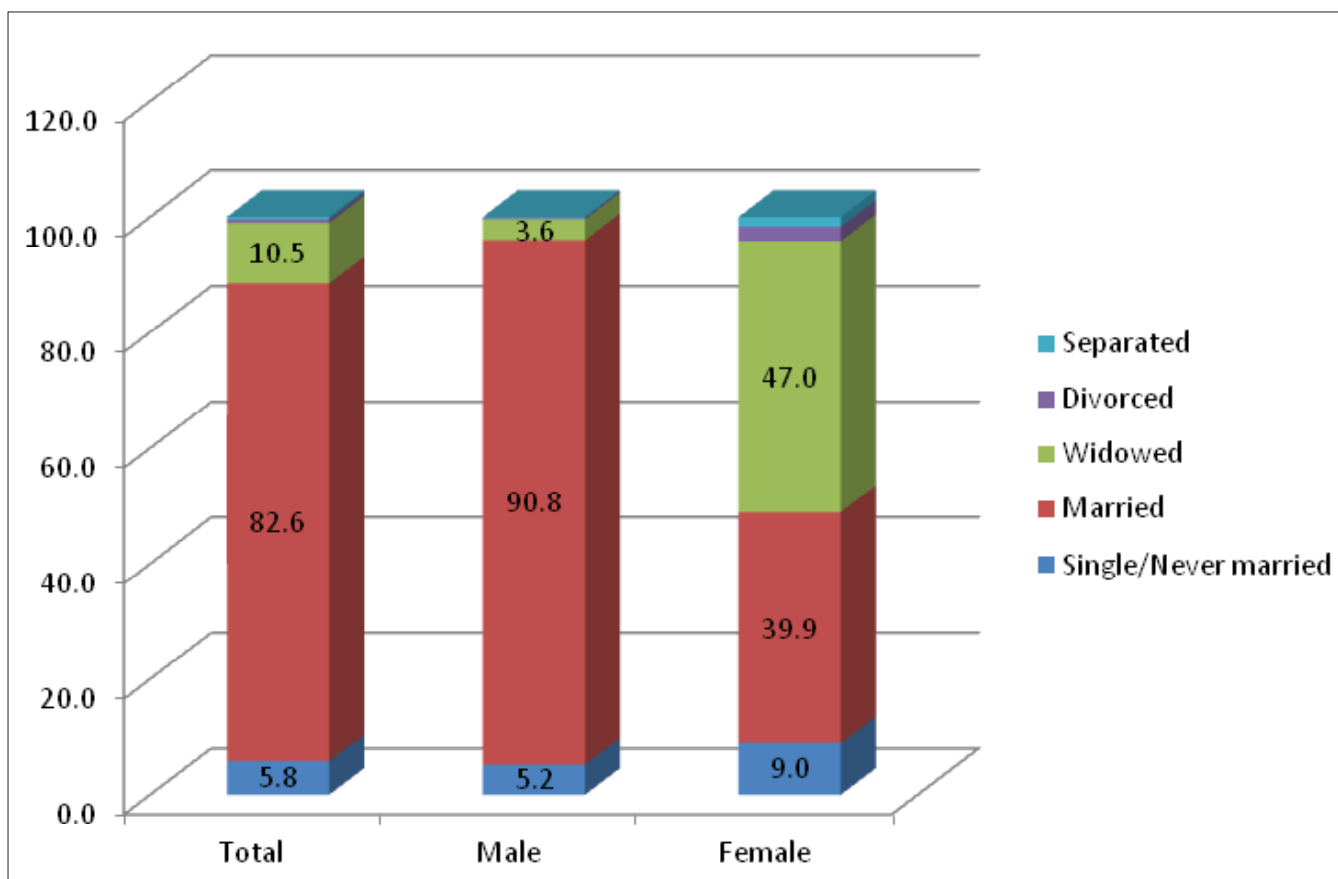
⁵ As sited in <http://www.un.org/esa/socdev/family/Publications/mtdesilva.pdf>

3.4 Characteristics of female headed households

3.4.1 Female headed households and marital status

The census data made a comparison between female and male headed households. Majority (90.8 %) of the male heads of households were married while only 39.9 percent of the female heads of households were married. Another contrast was that a significant 47 percent of female heads of households were widowed compared to only 3.6 percent of the male heads of households who were widowed (Figure 3.7).

Figure 3.7: Percentage households by sex of head and marital status – census 2010



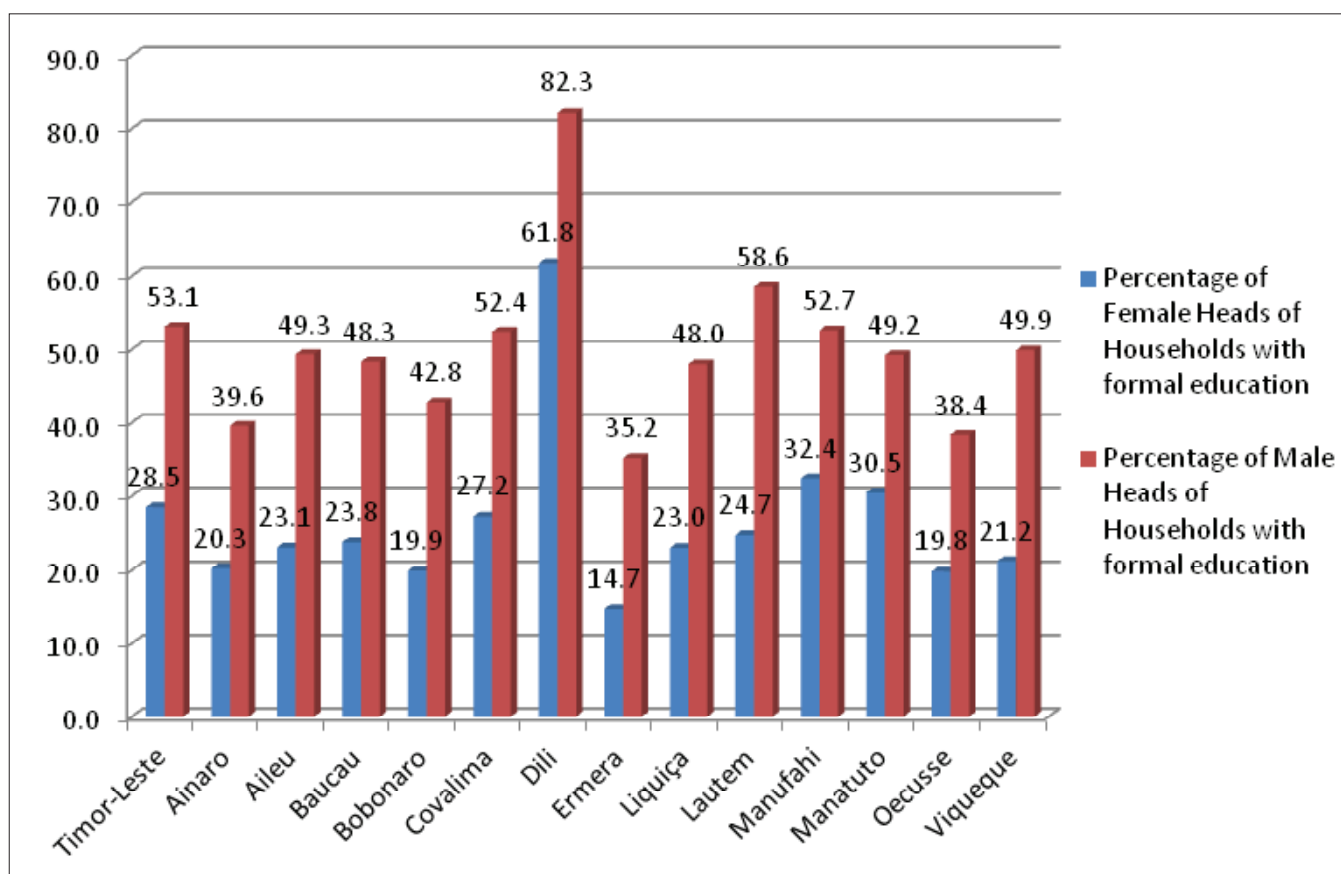
The situation in Figure 3.7 above is replicated in most of the districts where over 40 percent of the female heads of households were widowed. The highest rate of widowed female heads was recorded in Aileu at 57.3 percent while the lowest was in Dili at 34.1 percent.

3.4.2 Female headed households and education of head

A closer look at the education profile of the female heads of households exposes the fact that at the national level, fewer (28.5 %) of the female household heads had formal education (primary to university) as compared to 53.1 percent of the male heads with formal education.

The situation is replicated across all the districts with somewhat the same variance between the percentages of female heads with formal education vis-a-vis the male heads. Except that the variance is a little conspicuous in some districts such as Lautem with a variance in percentage of male versus female heads with formal education reaching a highest of 33.8 percent (Figure 3.8).

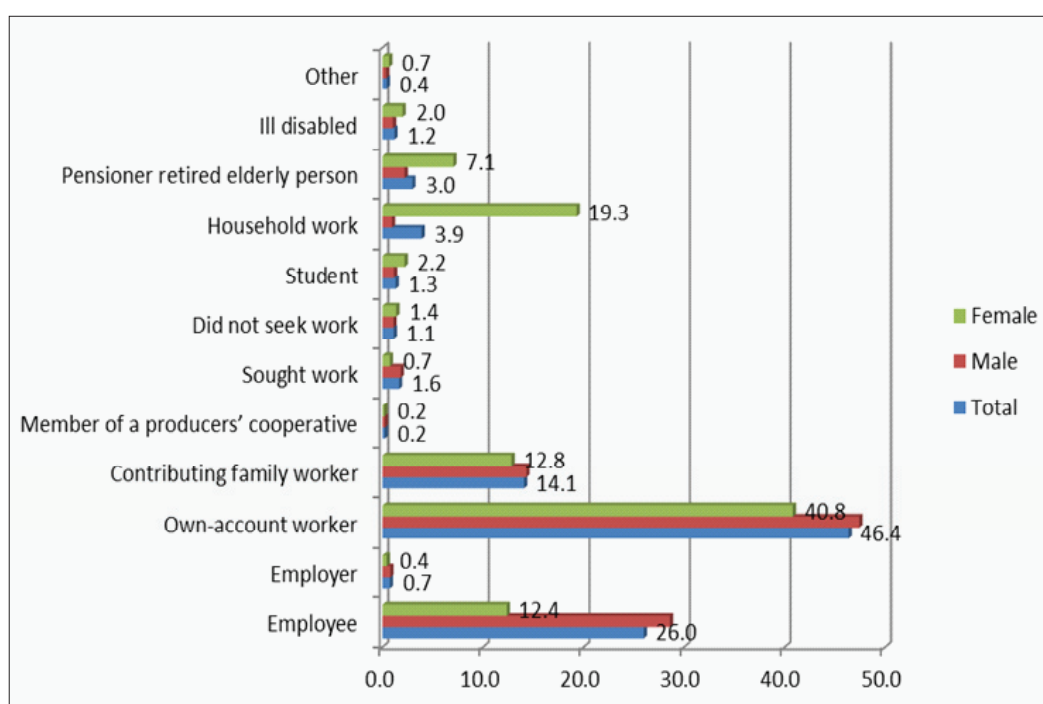
Figure 3.8: Percentage households by formal education of head and districts–census 2010



3.4.3 Female headed households and economic activity of head

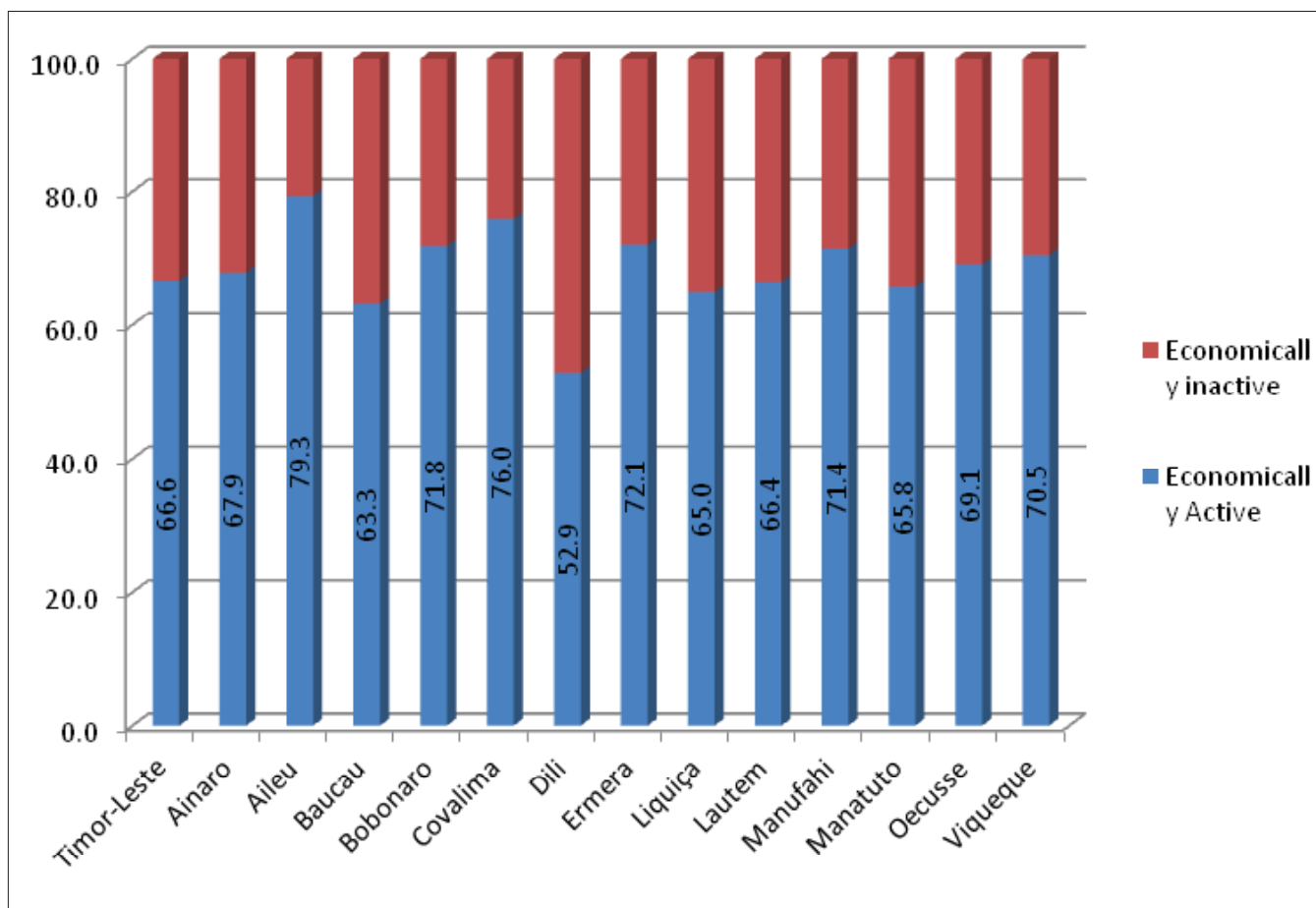
At the national level, the data shows that majority of female heads were own-account workers while a significant percentage 19 percent were engaged in house work. Only 12.4 percent of the female heads are employees compared to 28.6 percent of the male heads (Figure 3.9).

Figure 3.9: Percentage households by sex of head and economic activity – census 2010



Overall, 66.6 percent of female heads were economically active compared to 91.4 percent of male headed households. In the districts, the percentages of female household heads who were economically active are generally close to the national figures with slight variations. Most districts had over 63 percent of female heads who were economically active, the exception being Dili with only 52.9 percent (Figure 3.10).

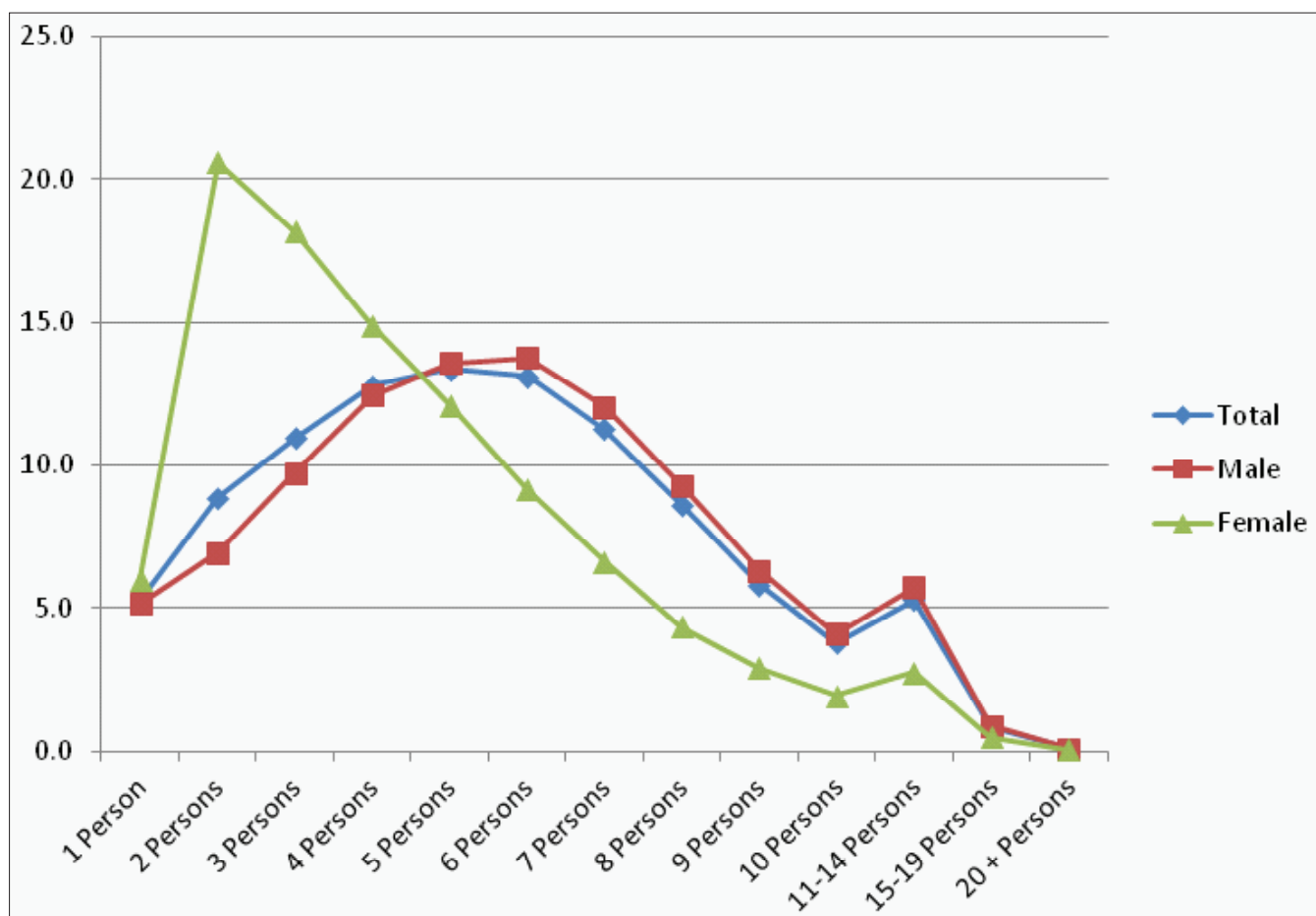
Figure 3.10: Percentage households by economic activity and district



3.4.4 Female headed households and household size

The data reveals that most female headed households both at the national level and in the districts were smaller compared to the male headed households. In actual fact, this is represented by the fact that out of the female headed households the greater percentage on average had 3 members compared to male headed households whose majority were on average of household size of 7 members. This trend is maintained in the districts. The national patterns are reflected in the figure 3.11 below.

Figure 3.11: Percentage households by sex of head and size (National)



3.5 Household Formation

3.5.1 Rate of Household Formation

The number of households that live in an area can increase through household formation or migration. Household formation is mainly driven by three major forces:

- Demographics
- Social factors, such as marriage and divorce rates.
- Economic factors such as the state of the economy, wages.

Demographics determine household formation to a significant extent, as new households are formed at different rates within the various age and income groups. Thus, an increase in the number of households within a jurisdiction can occur by simple aging of the existing population, that is to say, age groups with higher household-formation rates increase their percentage contribution to the area's total population (assuming no loss of households due to deaths).

The percentage of a population in a given age group who are heads of households is the headship rate. Headship rate may be expressed in a methodological way through the following steps expressed by algebraic equation. Let $P(i, j, t)$ be the population of sex i , age j and at time t , and let $H(i, j, t)$ be the number of heads of households by sex i , age j and time t . Then the headship rate specific for sex and age at time t , $h(i, j, t)$, is expressed by the following formula:

$$h(i, j, t) = \frac{H(i, j, t)}{P(i, j, t)}$$

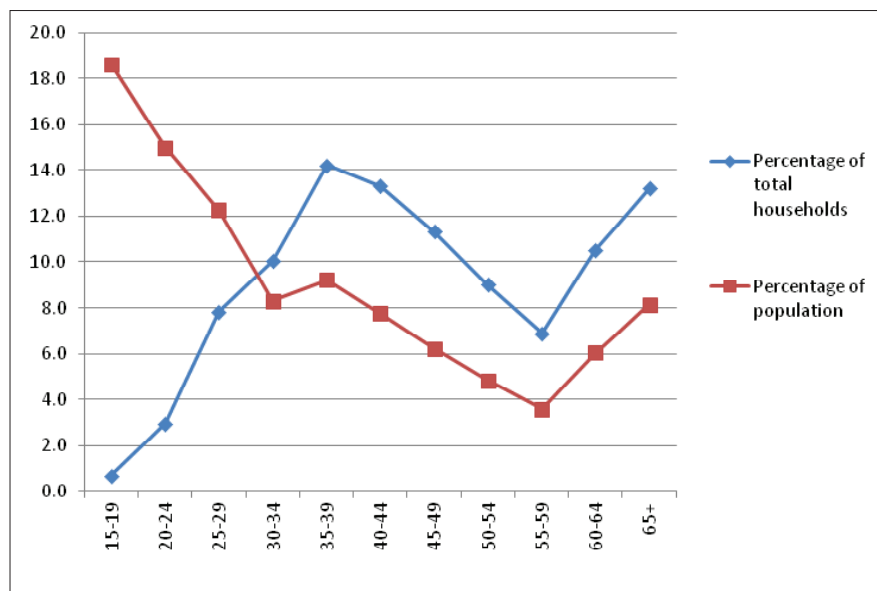
Data from the 2010 Census indicates that household formation (as measured by the percent of household heads in each age group) rose sharply from 0.7 percent at ages 15 - 19 to 57.8 percent by ages 55 – 59 (Table 3.6). Household formation rates then slightly declined to 48.6 percent by the age of 65 and over. Obviously, if by the dynamics of deaths, aging, and migration, the number of persons aged above 30 years captured in an area increases significantly, then, all factors remaining constant, the number of households and demand for housing in that market must increase significantly.

Table 3.6: Headship Rates

Age-Group	Number of Heads of households	Percentage total households	Households as percentage of population			Population		
			Total	Male	Female	Total	Male	Female
15-19	1,274	0.7	1.1	1.4	0.9	114,304	57,397	56,907
20-24	5,455	3	5.9	9.7	2.2	91,997	45,720	46,277
25-29	14,458	7.8	19.2	34.4	4.3	75,312	37,263	38,049
30-34	18,554	10	36.4	66.3	7.2	50,940	25,180	25,760
35-39	26,218	14.2	46.4	81.9	8.2	56,502	29,285	27,217
40-44	24,587	13.3	51.6	88.6	11.2	47,605	24,873	22,732
45-49	20,921	11.3	54.8	92	14	38,195	19,956	18,239
50-54	16,622	9	56.1	92.6	17.5	29,628	15,243	14,385
55-59	12,764	6.9	57.8	93.3	18.4	22,079	11,621	10,458
60-64	19,439	10.5	52.3	88.7	20.5	37,142	17,312	19,830
65+	24,359	13.2	48.6	76.8	21.2	50,078	24,725	25,353
Total	184,651	100	30.1	51.3	8.6	613,782	308,575	305,207

Figure 3.12 below even further illustrates that in the younger age groups of less than 29 years, the households as a percentage of the population is higher than the households as a percentage of the total households. The two graphs meet somewhere between ages 29 to 30. In figure 3.12 below, the intersection between the two graphs (showing the percentage of total households and the percentage of population) falls between 29 and 30 years. This implies that by the age of 29 to 30, virtually all individuals become heads of households.

Figure 3.12: households as percentage of total and population



Linking demographic structures and changes in housing demand reveals interesting trends with respect to three critical age groups, which tend to represent the three major stages of a household's life cycle:

The 25-34 age group mainly includes young, newly married households, with few or no children, demanding mostly rental housing and smaller, lower-priced, single-family units or apartments (this is referred to as the pre-nest stage of the life cycle).

While the 35-54 age group encompasses launching and maturing (move-up) families, demanding mostly owner-occupied housing and larger, higher-quality, single-family units, depending on income (this is referred to as the full-nest stage).

Households headed by individuals aged 55 years and above are demanding mostly owner-occupied housing and smaller, single-family units, condominiums, or apartments, depending on income (this is referred to as the empty-nest stage)

It is noteworthy to appreciate that, based on the above peculiarities of these three groups; we can infer the following dynamics and prospects regarding increases in housing demand:

- Increased households whose heads fall in the group of 25-34 will trigger increase in demand for smaller rental housing units and smaller low-priced single-family units
- While an Increase in households whose heads fall in the age group of 35-54 will trigger increase in demand for larger, higher-quality, owner-occupied, single-family housing units,
- Increase in the number of people over 55 should trigger increase in demand for smaller, owner-occupied, single-family units, condominiums, and apartments.

CHAPTER 4

TENURE CONDITIONS

4.1 Tenure status

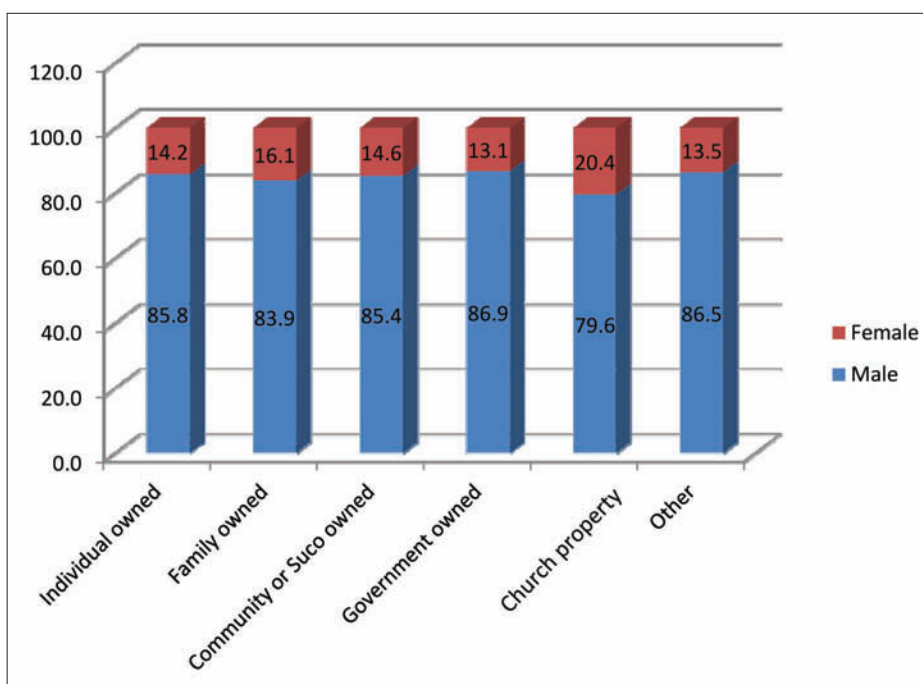
Housing tenure describes the legal status under which a household or particularly the people have the right to occupy their accommodation. The most common forms of tenure are home-ownership (including homes owned outright and mortgaged) and renting (including social rented housing and private rented housing). Legal status in tenure therefore does not imply that there must be strict legal documents for occupation but rather clarity of and predictability in terms of occupation. In the case of the 2010 Timor-Leste Population and Housing Census, tenure is categorized into owned (either individually through construction, outright purchase or loan) and not owned (in this case the house is provided either by the government).

Overall, the census results reflect a fairly high ownership rate of 95.7 percent at the national level and 87.1 and 98.6 percent in urban and rural areas respectively. The results at the district level generally portray the picture at the national level with most of the districts posting an ownership rate of at least 96 percent with the exception of Dili (a mainly urban district) whose ownership rate is 87.5 percent.

4.2 Tenure status by sex of household head

Figure 4.1 below shows the relationship between tenure status and gender of the household head. On average, over 80 percent of the heads across all types of tenure systems are male. This is mainly due to the fact that, the unique tenure system in Timor-Leste allows the majority of households to live in dwellings that are either owned by a community, family or an individual, and therefore gender inclination does not present itself strongly.

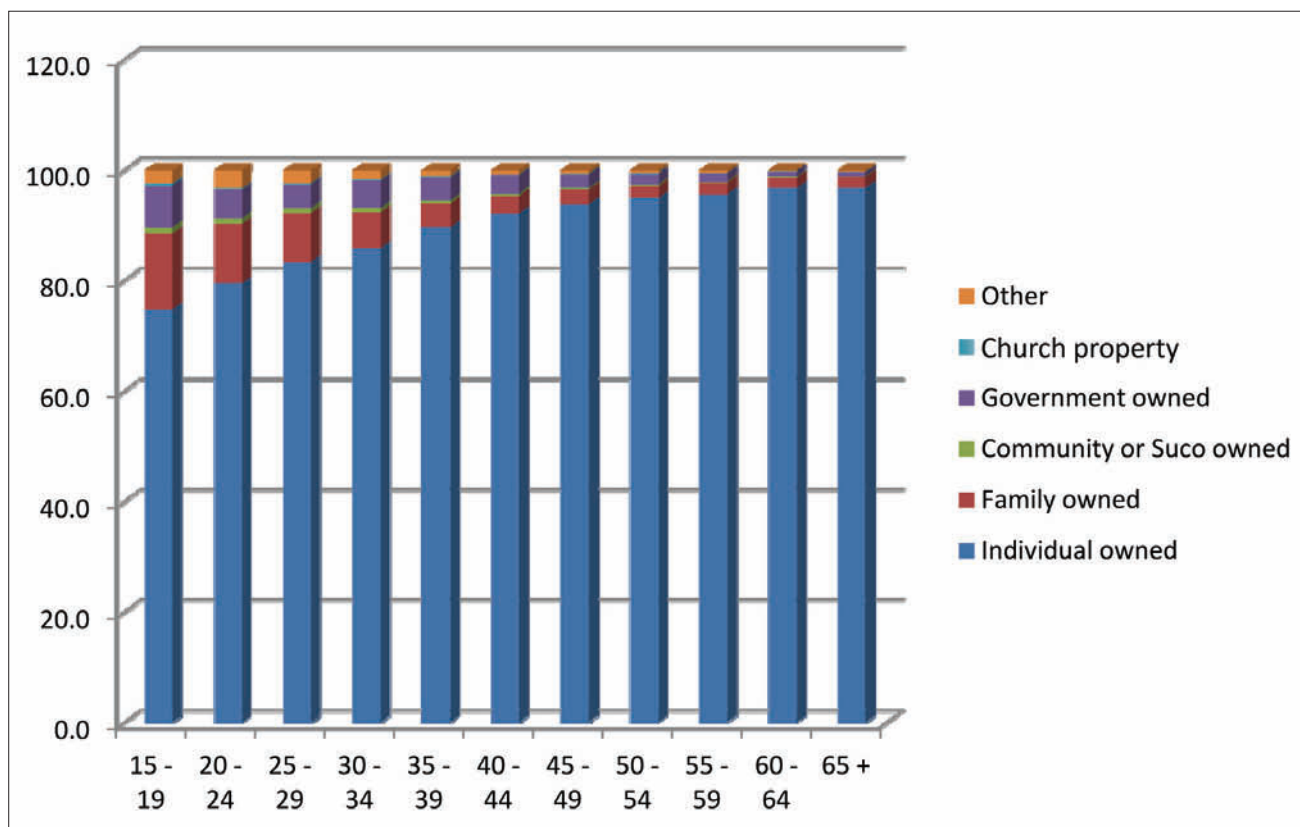
Figure 4.1: Percentage households by tenure and sex



4.3 Tenure status by age of head of household

From the data collected, it is evident that although a majority of Timorese stay in either individual or family owned housing, it is generally more likely that a younger head of household is less likely to occupy an individually or family owned dwelling compared to older household heads (Figure 4.2).

Figure 4.2: Percentage households by tenure and age of household head



4.4 Tenure and construction materials

The census data revealed some variance in the dominant wall materials, when comparing households who live in houses owned by either the family or an individual on one hand and those who live in houses owned by other agencies (Table 4.1). For instance out of the households captured in rural areas, 69.6 percent of households who do not own houses had their dwelling outer walls in concrete and/or brick, compared to 16.7 percent of those who own houses and have their dwelling outer walls in concrete and/or brick. This essentially indicates that those who do not own their dwellings in the rural areas occupy houses with slightly superior materials than those who live in their own houses. This may have arisen from the fact that majority of rural households prefer to construct with locally available materials and are unable to afford construction with contemporary modes and materials.

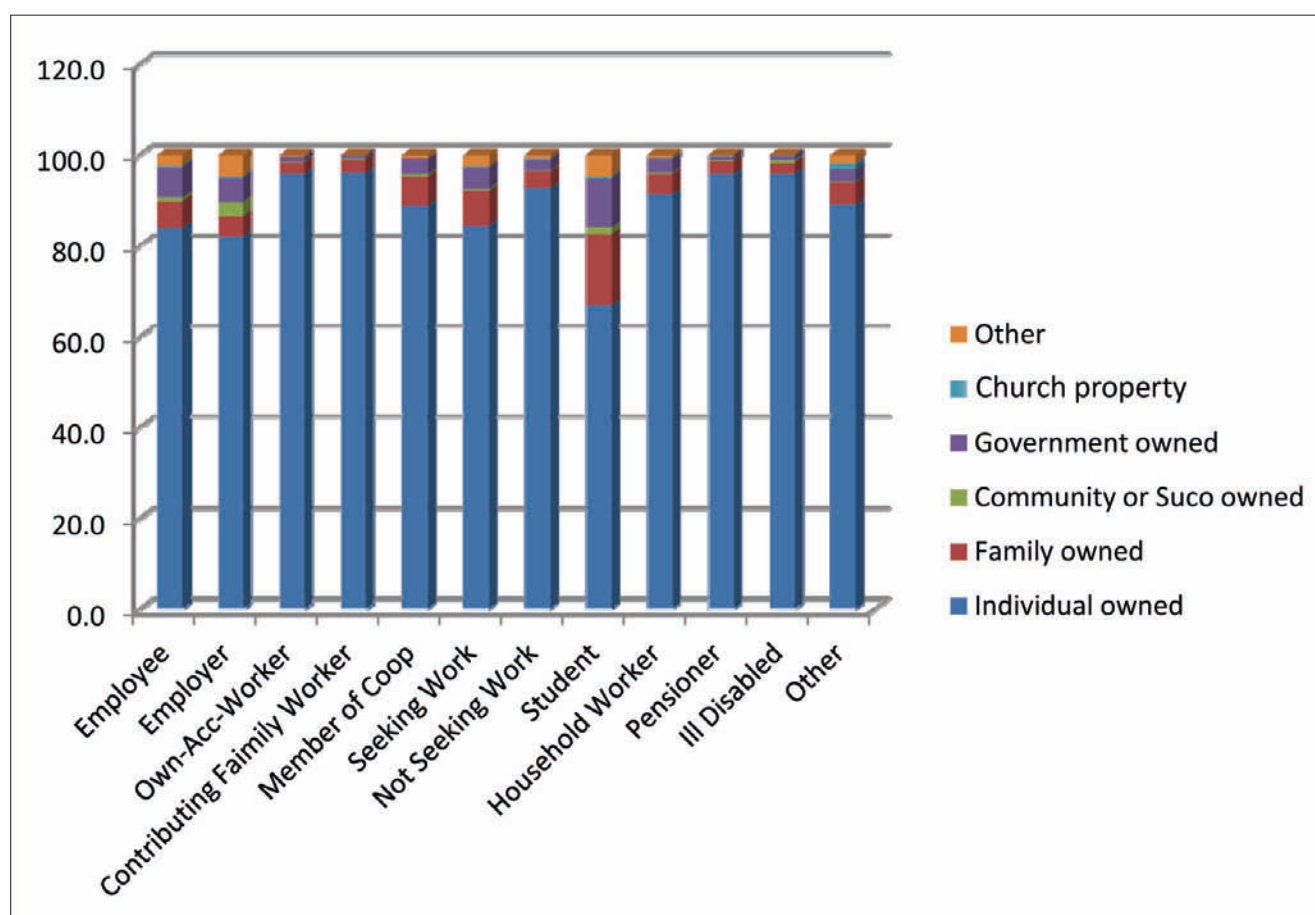
Table 4.1: Percentage households by type of wall materials

		Concrete / Brick	Wood	Bamboo	Corrugated iron/ Zinc	Clay	Palm Trunk/ Bebak	Rock	Other
Total	Own	27.4	4.2	32.3	3.2	1.4	29.1	1.4	1
	Own other	79.5	4.3	1.8	3.7	0.2	8	1.2	1.3
	All	29.6	4.2	31	3.2	1.4	28.2	1.4	1
Urban	Own	62.1	4.3	4.9	3.9	0.9	22.1	0.9	0.8
	own other	82.4	4.2	0.5	3.6	0.1	7	0.9	1.2
	All	64.7	4.3	4.4	3.9	0.8	20.2	0.9	0.8
Rural	Own	16.7	4.2	40.7	3	1.6	31.3	1.5	1
	own other	69.6	4.5	5.8	4.2	0.3	11.3	2.5	1.8
	All	17.4	4.2	40.3	3	1.6	31	1.5	1

4.5 Tenure and economic status of household head

The data did not show any direct relationship between the tenure status and economic status of the head of household as reflected in figure 4.3. This is mainly because of the unique tenure system in Timor-Leste where a majority live in dwellings that are either owned by a community, family or an individual, the normal market system that would necessitate some relationship between tenure and economic status of heads of households does not arise or present itself strongly.

Figure 4.3: Percentage households by tenure and economic activity of head



CHAPTER 5

BUILDING MATERIALS

One of the key challenges of the 21st century to housing and the construction industry is how to minimize carbon dioxide – a green house gas - which is a major by-product in the manufacturing of the two most important materials of construction: Cement and steel. It is noteworthy that as we strive to mitigate climate change effects, the concentration of carbon dioxide in the environment has risen by 50 percent (Mehta and Burrows 2001). Therefore, the construction industry needs to determine how future infrastructural needs can be met without further increases in the production of cement and steel.

While conservation of these materials through enhancing the durability of structures is one of the ways of minimizing green house gas emissions and ensuring sustainable development, it is important to note that neither structural design nor materials were responsible for the lack of durability. In most cases, it was the construction practice that turned out to be the culprit (Mehta and Burrows 2001).

The above illustration already hints to the fact that durability of a structure is determined by a combination of factors including the nature of materials used, design, adherence construction procedures and practice, appropriate maintenance standards and procedures as well as level and nature of exposure to climatic and environmental peculiarities. For instance while steel may generally be regarded as durable if the right design factors are applied, correct construction practices are applied and the structure generally well maintained, in corrosive environments, the steel structure may not last as long as would otherwise be the case.

Based on the foregoing then, if all the above enumerated factors that affect durability are upheld, then a building or structure that is intended to remain in place for a period of more than 15⁶ years may be regarded as durable or permanent. On its part, UNESCO⁷ proffers that a house is considered as durable if it is built on a non-hazardous location and has a structure permanent and adequate enough to protect its inhabitants from the extremes of climatic conditions such as rain, heat, cold or humidity.

Even with above detailed explanation on the basis for determining the durability of a dwelling by the materials, it none the less still remains a subjective matter given that some traditional construction materials can meet the criteria. As a result dwelling units captured in the 2010 census have been classified as modern/contemporary and traditional depending on their predominant construction materials of wall, roof and floor. Houses with wall materials of concrete/block and with roof materials of tiles, asbestos sheets, corrugated iron/zinc and concrete are considered as modern. The traditional dwellings are with either wall or roof made of materials other than those identified for the modern house.

⁶ Duration is derived from the average mortgage loan term in the country. Since most banks and housing financing agencies value permanence when evaluating applications for mortgage.

⁷ Slum profile indicators - http://www.unesco.org/water/wwap/wwdr/indicators/pdf/C3_Slum_profile_in_human_settlements.pdf

5.1 External Wall Materials

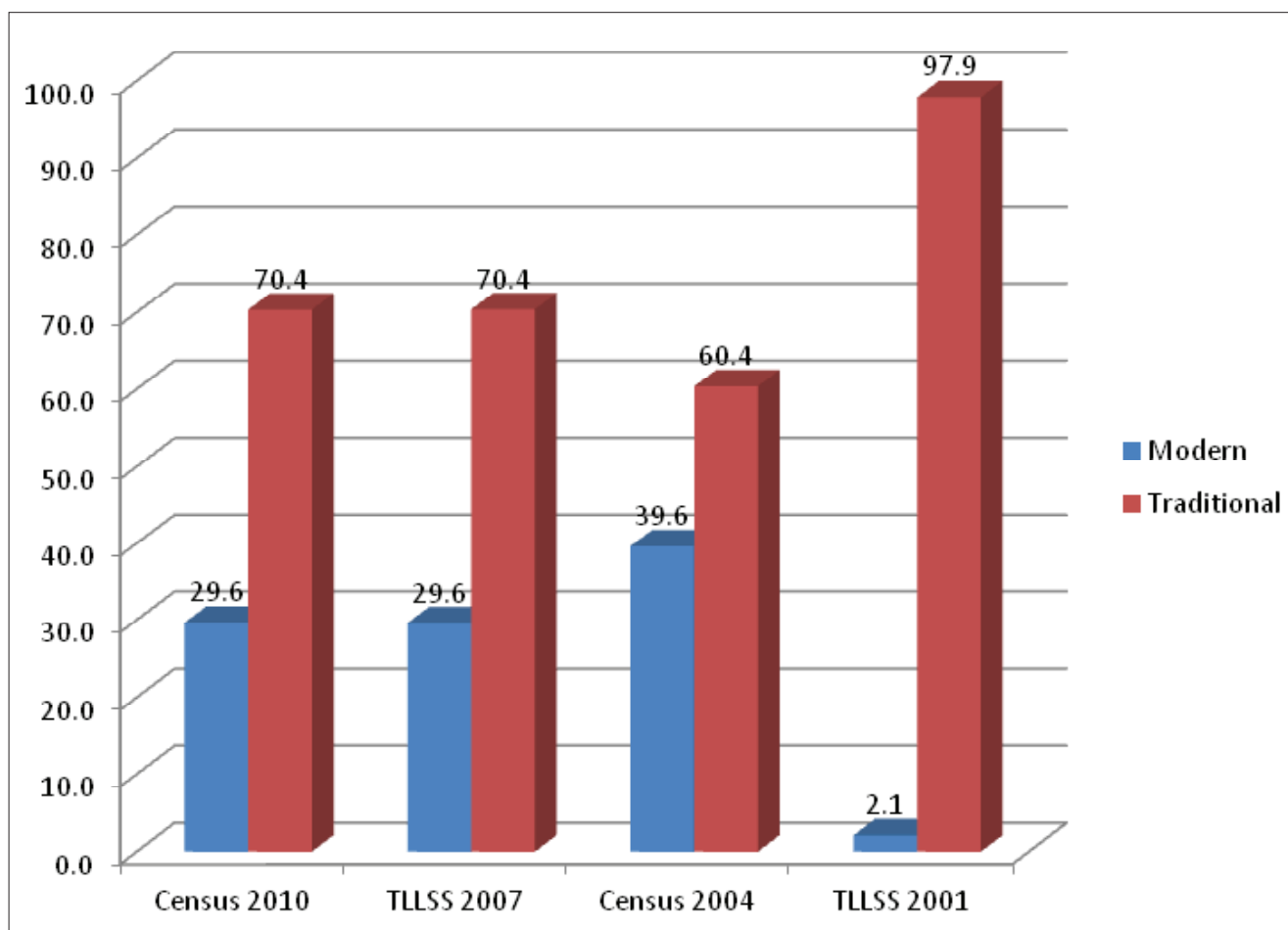
At the national level, the predominant external wall materials in Timor-Leste are Brick/Concrete and Bamboo which accounted for 29.6 and 31 percent respectively of the households covered in the 2010 census. Direct comparison with previous censuses and surveys both at national and sub-national levels was problematic because the classification of wall materials used in census 2010, census 2004 and Timor-Leste Living Standards Survey (TLLSS) 2001 and 2007 were very varied as shown below.

Table 5.1: Classification and coding of wall materials in Censuses and Surveys

Census 2010	Concrete/Brick, Wood, Bamboo, Corrugated iron/Zinc, Clay, Palm Trunk/Bebak, Rock
Census 2004	Concrete/Brick, Wood, Bamboo, Corrugated Iron, Clay
TLLSS	Concrete, brick/unbaked brick/wood, bamboo, rattan/tin/mud

Due to different classifications in the surveys and censuses, the author settled on comparison by grouping the materials as modern/contemporary (mainly brick/concrete) and traditional/indigenous (bamboo, palm trunk, wood, clay, mud, rock and others). According to this grouping the census and other surveys revealed that between 2001 and 2010, majority (over 60 %) of Timorese households occupied houses with walls made from traditional materials. It is notable however that in 2001, only 2.1 percent of the households lived in houses with modern external walls. The overall picture of households and the dominant materials for the wall is reflected in Figure 5.1 below.

Figure 5.1: Percentage households and wall materials

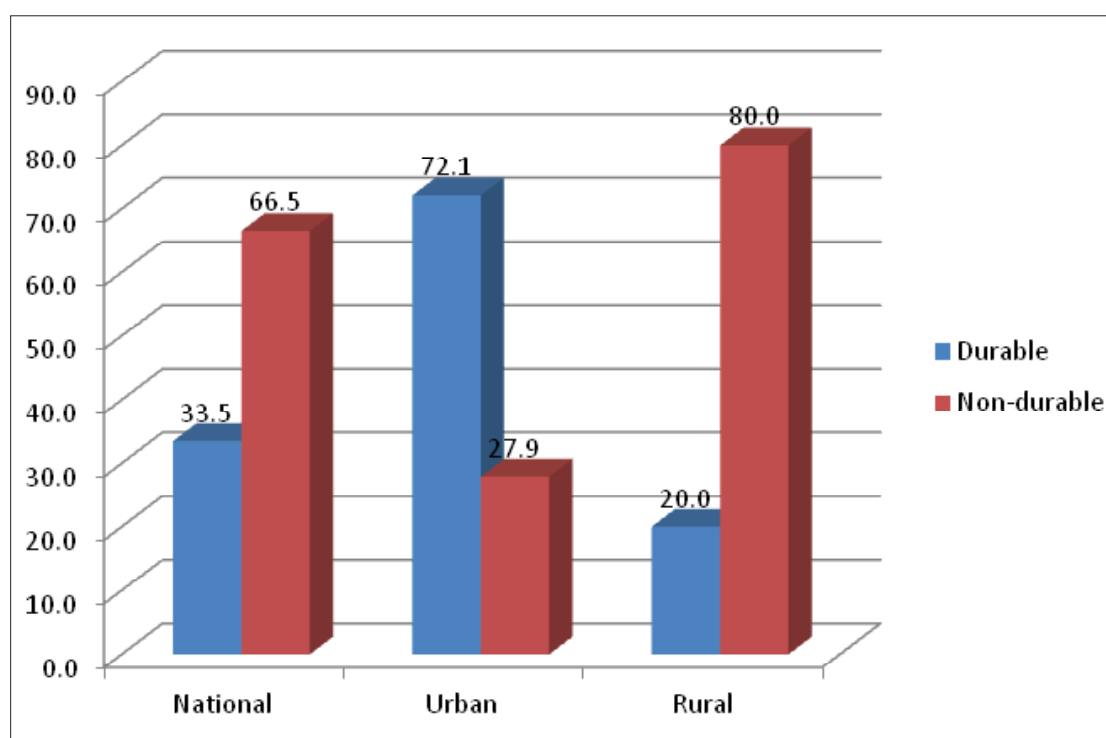


5.2 Floor Materials

Analysis of the floor materials revealed that the most common floor finish for urban households was cement/concrete, tiles and earth which accounted for 52.2, 19.9 and 21.1 percent respectively while rural households with cement/concrete and earth floor finish accounted for 17.3 and 71.8 percent respectively for rural households. At the national level, the proportion of households with cement/concrete and earth floor finish, were 26.3 and 58.7 percent respectively. These results compare favourably with results of other recent surveys in Timor-Leste such as the DHS 2010 which depicted the proportion of households nationally with earth floor to be 60.3 percent while those with cement were 30.8 percent.

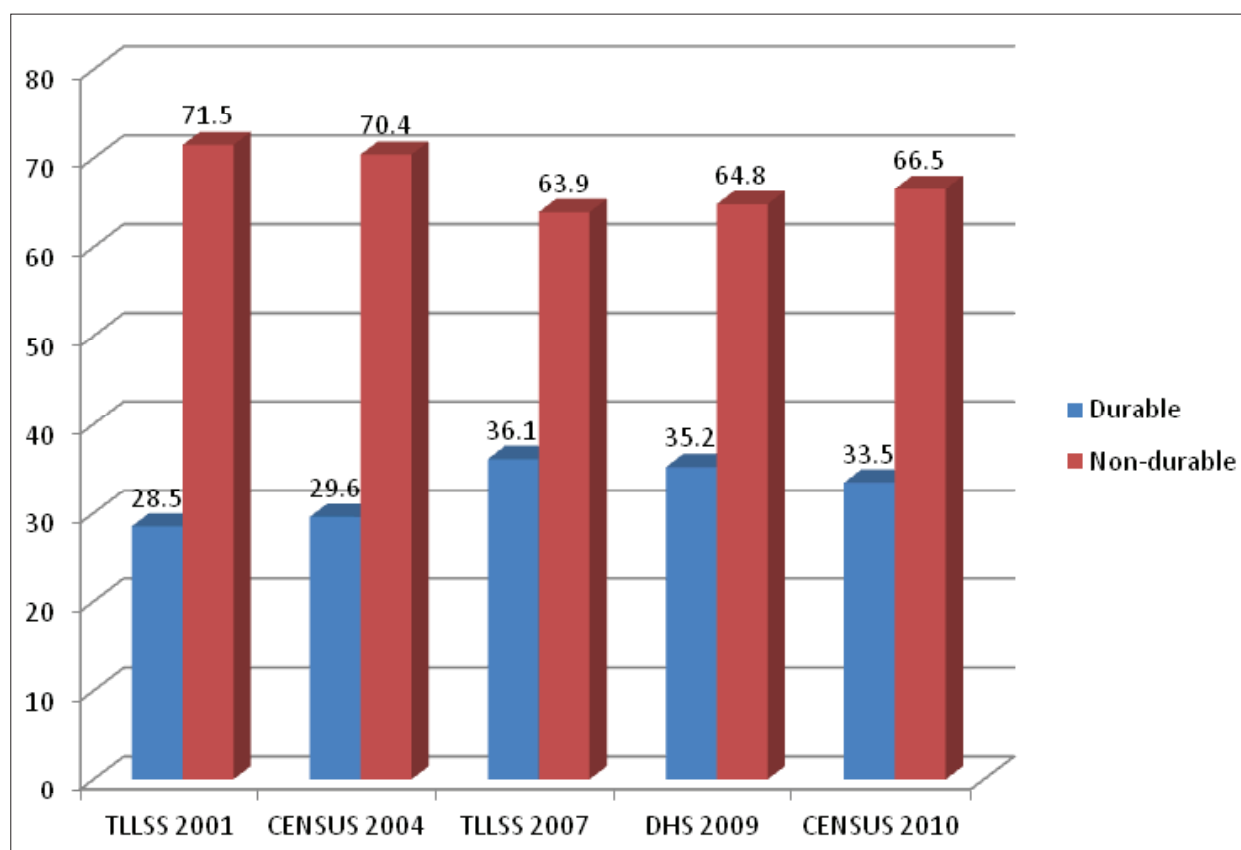
When the floor materials are categorised into durable and non durable floor materials, one clearly sees the disparity between the rural and urban scene as depicted in the Figure 5.2.

Figure 5.2: Percentage households and floor materials



Evaluating the census results against previous surveys and censuses, presented a mixed but somewhat improving situation. It provides a fairly worse scenario in 2001 that remained almost static up to the TLLSS of 2007 when some form of improvement was portrayed by Census 2010. As depicted in Figure 4.3, the proportion of households with durable floor minimally increased from 63.9 percent in 2007 to 66.5 percent in 2010 while those with non-durable floor reduced from 36.1 percent in 2007 to 33.5 percent in 2010.

Figure 5.3: Percentage households by floor material (Census, TLLSS and DHS)



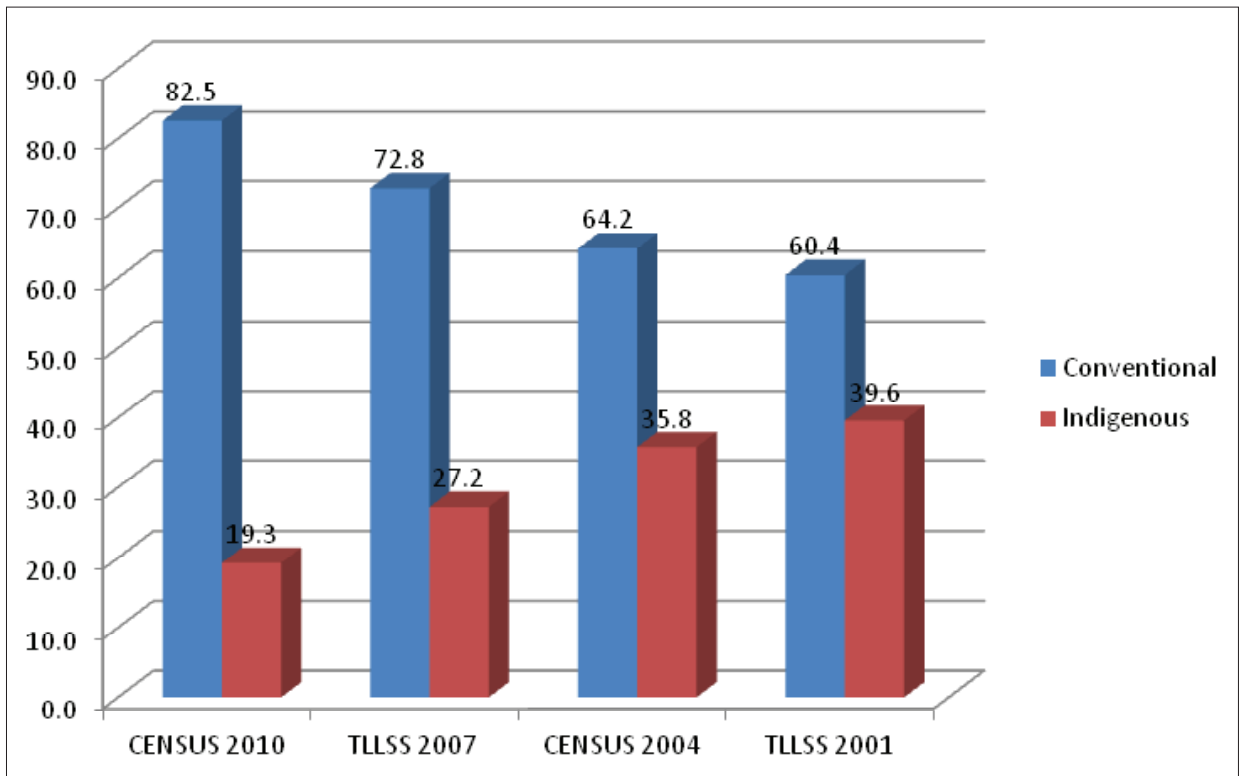
5.3 Roof materials

In analysing the roof materials, the results were presented as was done with external wall materials, grouped into modern and traditional or indigenous roofing materials. The modern/contemporary roofing materials included concrete, corrugated iron/zinc, asbestos and tiles while the traditional/indigenous included palm leaves/tali tahan/thatch/grass and bamboo. With this classification the census results at the national level revealed that a significant majority (over 65 %) of the households had modern roofing materials. The scenario is consistent but somehow different in magnitude when comparing urban and rural areas where 91 and 60.4 percent of households in urban and rural areas respectively have modern materials for their roofing.

A comparison between districts and sub-districts, showed that Vera Cruz, Dom Aleixo and Nain Feto sub-districts reported the highest percentage (96 %) of households with modern roofing materials while Laclo, Nitibe and Passabe sub-districts reported the lowest with 32.4, 26.9 and 14.7 percent respectively of households with modern roofing materials. Evaluating the results by districts, Dili posted the best percentage of households with modern roofs at 93.7 percent while Oecussi posted the worst result with only 34.6 percent of households with modern roofs.

An evaluation of the census 2010 against previous censuses and surveys presents an encouraging trend where the percentage of households using traditional roofing materials has steadily declined over the years from 39.6 percent in 2001 to 19.3 in 2010 while the proportion of households using contemporary roofing materials has increased from 60.4 percent in 2001 to a significant 82.5 percent in 2010 as depicted in the figure 5.4.

**Figure 5.4: Percentage households by roofing materials
(Census 2004& 2010, TLLSS 2001&2007)**



CHAPTER 6

HOUSING AMENITIES

6.1 Water and Sanitation

The analysis of the census data with regard to water and sanitation was anchored on the joint WHO/UNICEF Joint Monitoring Programme for water supply and sanitation particularly the 2008 regional report on South East Asia and the Pacific.

6.1.1 Main source of drinking Water

Water no doubt is a vital life saving requirement and lack of access to clean and safe drinking water as well as for other household uses can result in physical, economic and social costs of monumental proportions. For instance in 1970, water-related diseases cost an estimated \$125 billion per year(see⁸) in direct medical costs and lost work time for sick people plus the (un-quantified) social costs of lost education, family disruption and shortened life expectancy. This illustrates the magnitude of problems resulting from lack of access to safe drinking water at national and global levels.

Analysis of main source of water for the household in this report is presented as a three-step ladder that includes the proportion of households as well as the population using:

- Unimproved drinking water sources (Unprotected dug well, unprotected spring, cart with small tank/drum, tanker truck, and surface water (river, dam, lake, pond, stream, canal, irrigation channels) and bottled water⁹.
- Improved drinking water sources other than piped water (Public taps or standpipes, tube wells or boreholes, protected dug wells, protected springs and rainwater collection.
- Safe water sources which include water piped into a dwelling, plot or yard.

Evaluating the census data at the national level presents a fairly pleasant picture where 65.9 percent of households use safe and improved water sources for drinking. This compares well - although lower -with the situation in Southeast Asia where in 2006, 73 percent of households obtained their drinking water from safe and improved sources(WHO/UNICEF 2008). With regard to monitoring the achievement of the MDG target¹⁰ on water, the results indicated a steady progress towards the achievement of the MDG target: Compared to 2001 when only 50.1 percent of households had access to improved water sources (TLLSS, 2007 pg45); the Census 2010 results showed an improvement of 15.8 percentage points over a period of 9 years. If this trend is maintained, then in the next five years the country may reduce by half the percentage of people who by 2001 did not have access to sustainable safe drinking water.

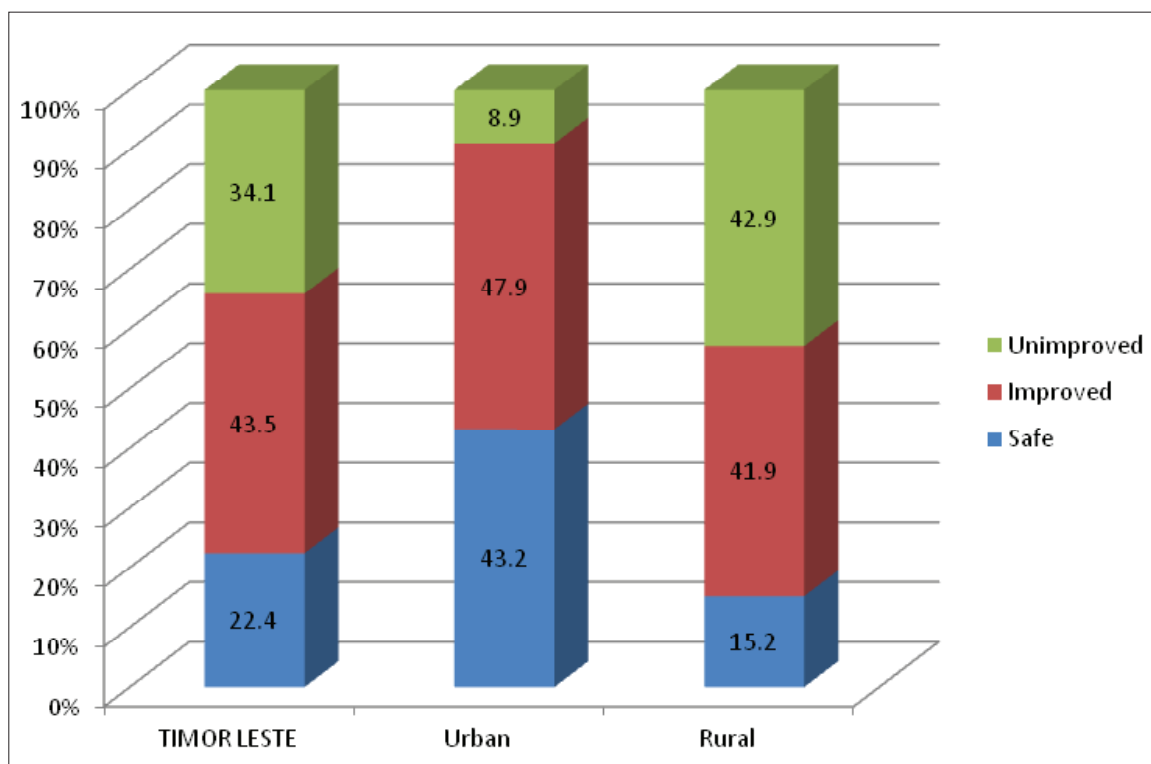
The situation presented is even much more encouraging in urban areas where 91.1 percent of households use safe and improved water sources for drinking as compared to only 57.1 percent of rural households (Figure 6.1).

⁸ http://www.sulabhinternational.org/sm/magnitude_sanitation_problemnational_global.php

⁹ According to World Health Organization 2004(Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level), pg. 9, services can be defined as unimproved not only if they are unsafe, but also if they are unnecessarily costly, such as bottled water or water provided by tanker truck.

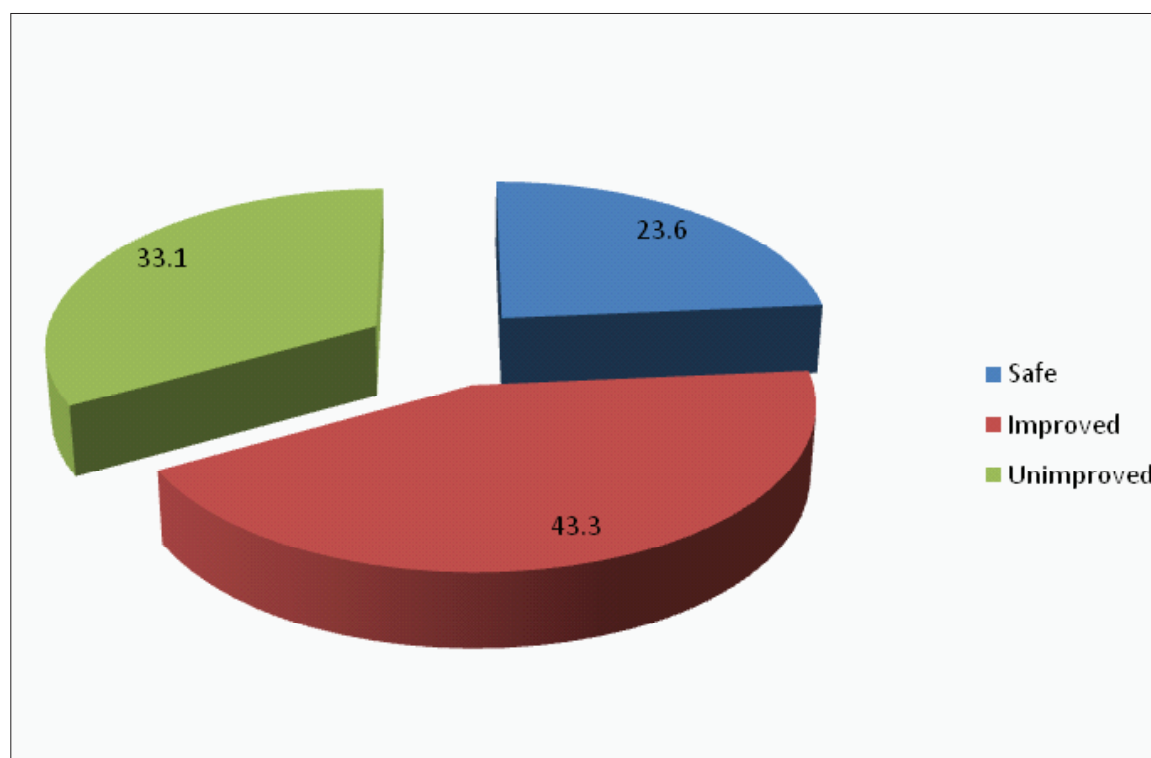
¹⁰ By 2015, reduce by half the proportion of people without sustainable access to safe drinking water

Figure 6.1: Percentage households by drinking water sources



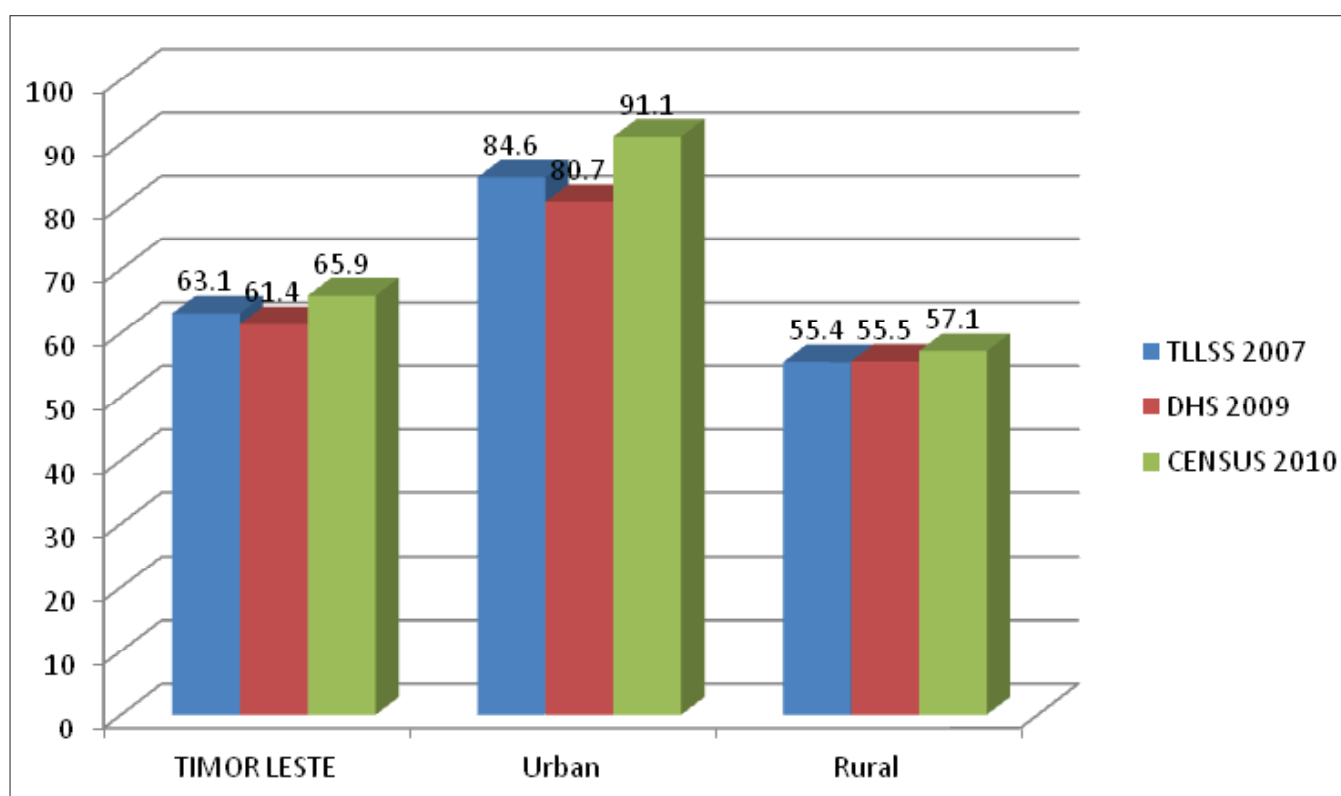
In terms of the percentage of population with access to safe, improved and unimproved water sources at the national level, the situation does not drift far from the picture presented when analysed at household levels. Figure 6.2 depicts the percentage of population with access to safe, improved and unimproved water sources.

Figure 6.2: Percentage Population by drinking water sources



These results show slight improvements from previous surveys, both nationally and regionally as depicted in Figure 6.3.

Figure 6.3: Percentage households by access to improved drinking water sources



6.1.2 Human waste disposal modes

Safe disposal of human waste is a component of sanitation which includes and interacts with water supply; waste water and solid waste management, control of vectors and diseases, domestic and personal hygiene, food, sanitation and housing. Effectively, sanitation is a key indicator of the quality of any living environment. Accordingly, environmental sanitation is viewed as *“the control of all those factors in man’s physical environment which exercise a deleterious effect on his physical development, health and survival”* (WHO, 1992). Environmental sanitation is vital for protecting the environment, improving health, alleviating poverty, enhancing quality of life and raising productivity – all of which are essential for sustainable development.

According to WHO/UNICEF 2008 and WHO/UNICEF 2006, an improved sanitation facility refers to facilities that are not shared between households and hygienically separate human excreta from human contact. Such sanitation facilities are deemed to be both adequate and improved. It is however noteworthy to mention that certain technologies are more likely than others to meet these adequacy standards. And to allow for international comparability of estimates, the JMP uses the following (Table 6.1) classification to differentiate between improved and unimproved types of sanitation facility.

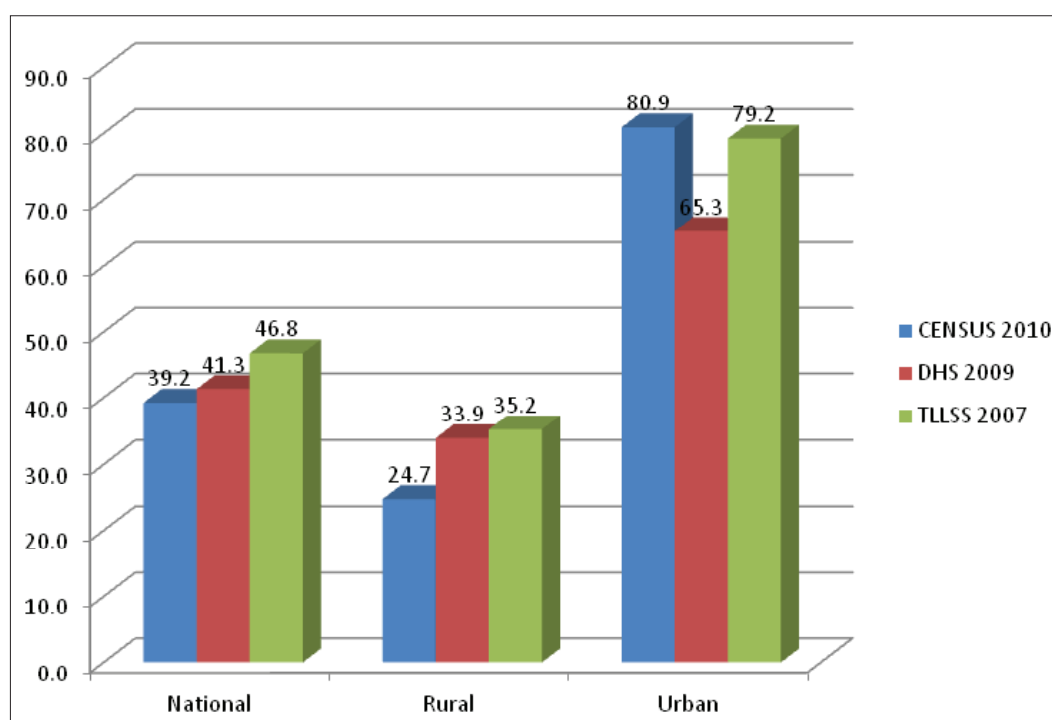
Table 6.1: classification of sanitation facilities

Improved sanitation facilities ²	Unimproved sanitation facilities
Flush or pour-flush to:	Flush or pour-flush to elsewhere ³
- pipe sewer system	Pit latrine without slab or open pit
- septic tank	Bucket
- pit latrine	Hanging toilet or hanging latrine
Ventilated improved pit latrine (VIP)	No facilities or bush or field (open defecation)
pit latrine with slab	Public or shared facilities
Composting toilet	

Source: WHO/UNICEF JMP 2008

Applying the above classification, the census results indicated that at the national level, 39.2 percent of Timorese households had access to improved sanitation facilities while 60.8 percent did not have access to improved sanitation facilities. This compared well with the regional statistics that showed that Timor-Leste was among the few countries in the region where 50 percent or less of its households had access to improved sanitation facilities. The results also compared well with results from other recent surveys conducted in Timor-Leste. For instance from the Demographic and Health Survey 2009/10, the percentage of households with access to improved sanitation was 41.3 percent nationally. The Living Standards Survey (LSS) of 2007 posted 46.8 percent although the definition¹¹ in the LSS was not congruent to the definition used in this analysis and the DHS 2009/10. The comparison between the census data and past surveys is presented in Figure 6.4. Note that these results should be interpreted with caution due to definition factors explained earlier.

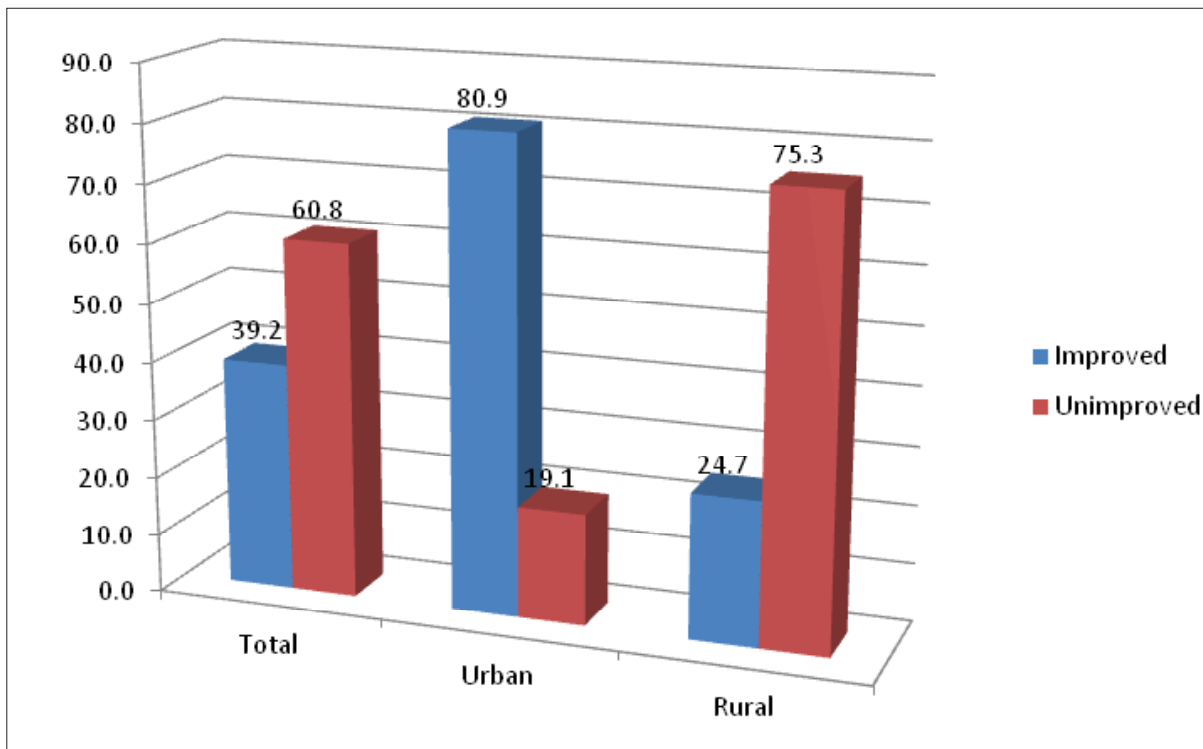
Figure 6.4: Percentage Households with access to improved sanitation (Census, DHS and TLLSS)



¹¹ TLSS 2007 pg. 45 footnote c/

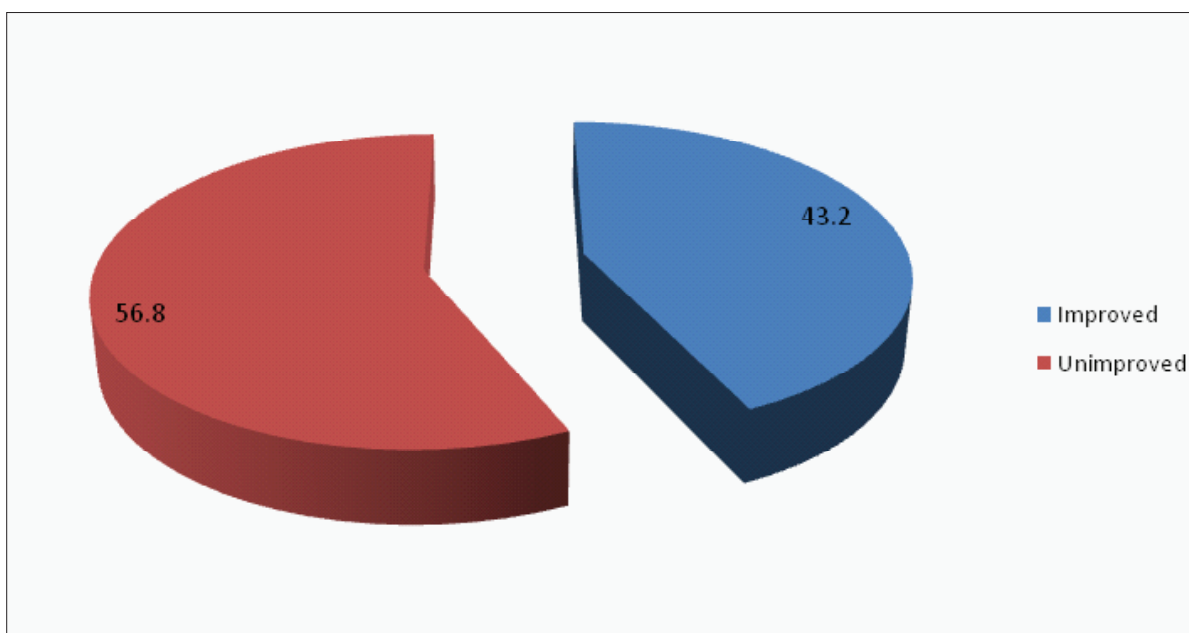
An assessment of the levels of access to improved sanitation between rural and urban areas reveals that 80.9 percent of households in urban areas had access to improved sanitation facilities as compared to only 24.7 percent of rural households having access to improved sanitation facilities (Figure 6.5). This analysis has not made comparison with the results of 2004 Timor-Leste census because the 2004 census did not include a question on human waste disposal.

Figure 6.5: Percentage households by access to sanitation



An analysis of the data based on population compared well with the results from household analysis. From this analysis 43 percent of the Timorese population used improved sanitation as depicted in Figure 6.6.

Figure 6.6: Percentage population by access to sanitation

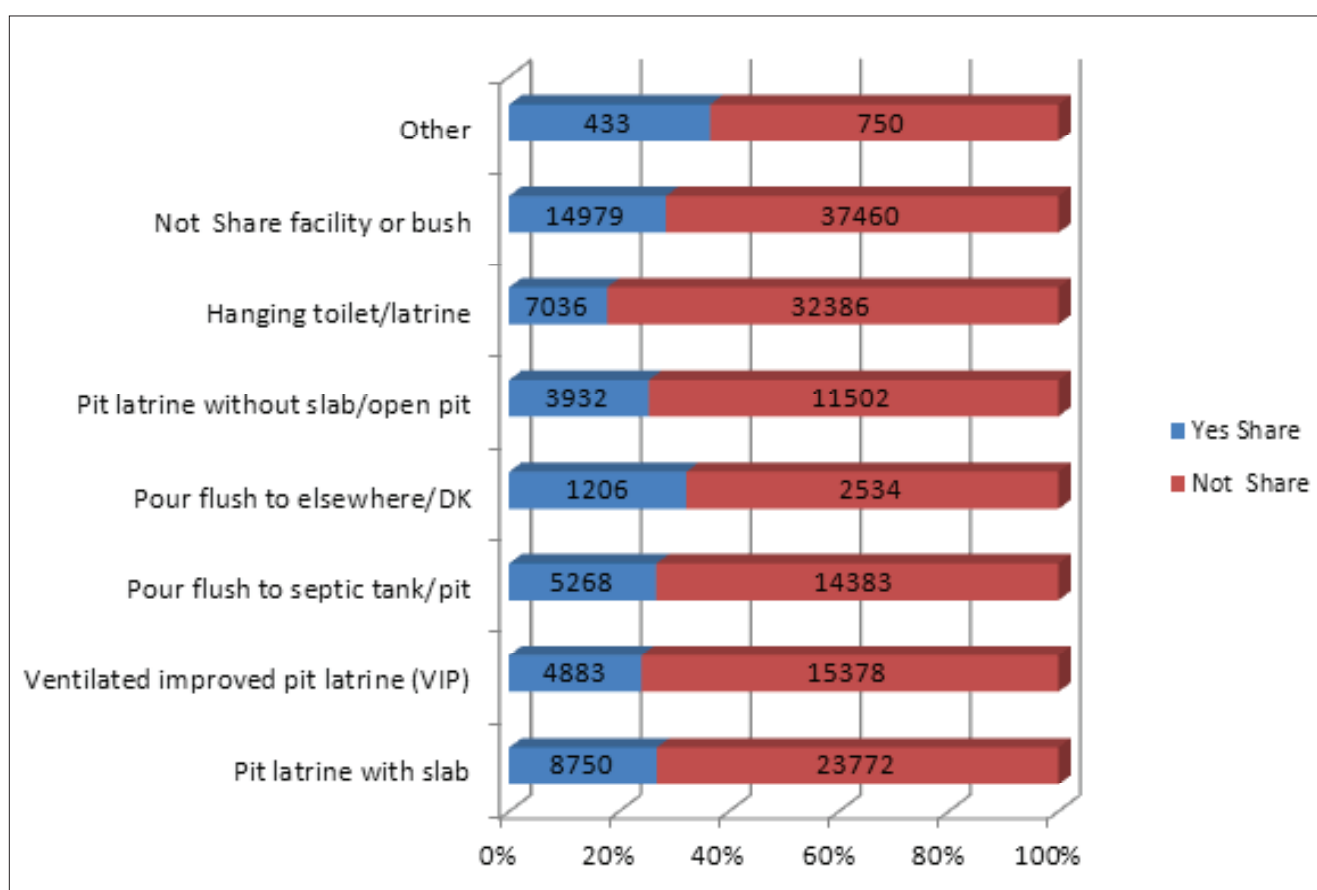


A comparison of access to sanitation between districts and sub-districts gave a different picture with some districts and sub-districts such as Nain Feto, Dom Aleixo, Vera Cruz, Dili¹² and Cristo Rei posting over 80 percent access to improved sanitation while Hatu-Builico, Hatu-Udo, Fatululic, Nitibe, Baguia and Quelicai posting the least access to improved sanitation of less than 10 percent.

6.2 Toilet Sharing

Toilet sharing besides the type of human waste disposal facility has implications on the level of access and hygiene standards of a household. Whereas standards for tolerance in sharing differ from country to country and region to region, it is conventionally agreed that the more the number of households share toilet facilities, the less the hygiene levels despite the type of facility. The extent of sharing was not covered by the 2010 Timor-Leste Census, however, households were required to indicate if, or not they shared their toilet facility. From the census results it emerges that a quarter of the households share their toilet facility at the national level. This situation prevails both in the rural and urban areas (Figure 6.7).

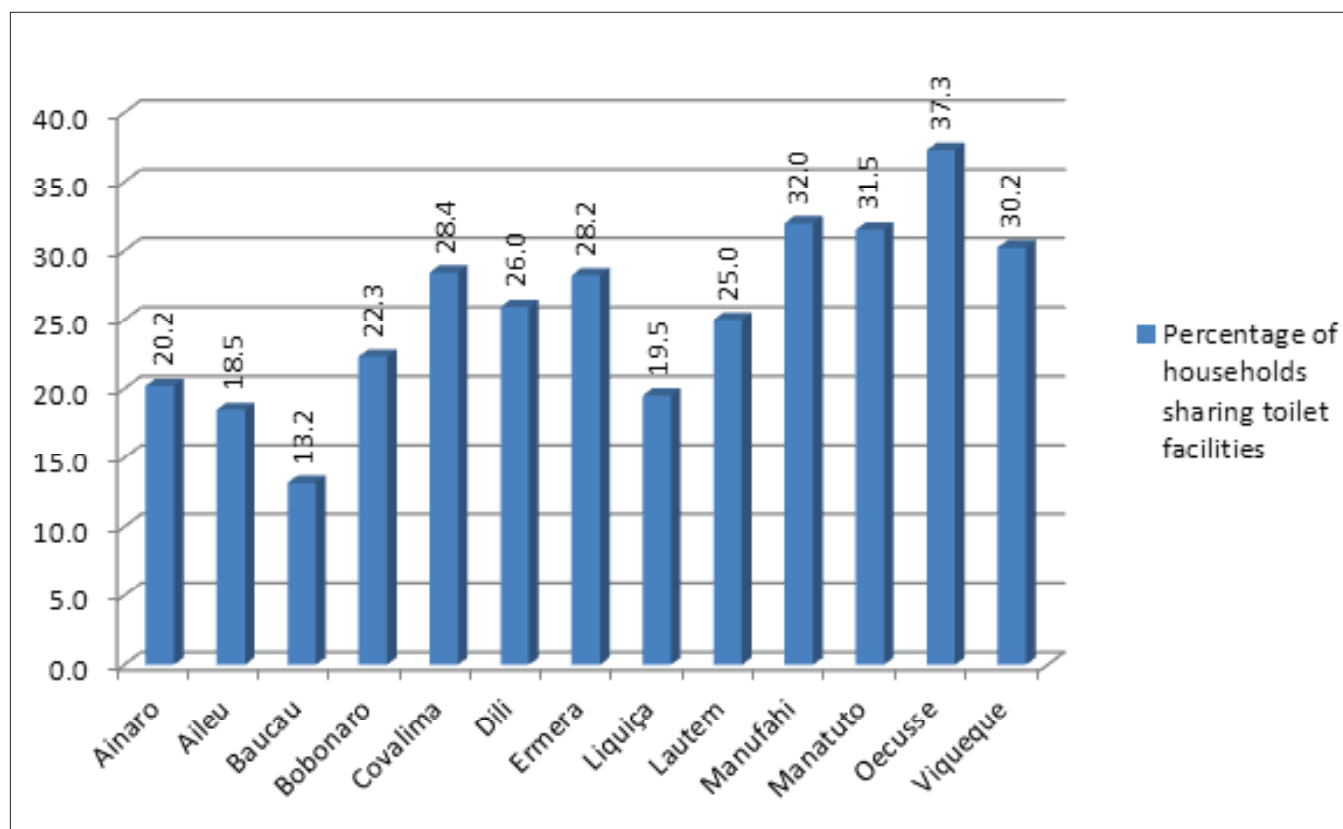
Figure 6.7: Households by type of human waste disposal and incidence of sharing – Timor-Leste



In regard to the incidences of toilet sharing in districts, some districts presented low sharing rates while others presented high sharing rates compared to the national average as depicted in figure 6.8 below. Baucau posted the least incidence of sharing at 13.2 percent while Oecusse presented the highest incidence of toilet sharing at 37.3 percent.

¹² This is a District and the Capital City

Figure 6.8: Percentage of households sharing toilet facilities by district



CHAPTER 7

ENERGY

7.1 Energy

Household energy consumption for lighting, warmth, cooling, water heating, electronic entertainment, computing, refrigeration, and cooking constitutes between 15 to 25 percent of the total energy consumption in most countries. An interesting dimension is that average per capita household energy consumption in developed countries is about nine times higher than in developing countries. This may be attributed to several factors including low levels of use of most household electronic equipments and favourable climatic conditions in developing countries compared to developed countries.

With the ever increasing population especially in the urban areas where the above enumerated demand for energy in residential buildings is intensive, energy consumption in buildings has been growing in aggregate over time. However, improvements in design, technologies and practices with regard to lighting fixtures, windows, insulation, building controls, and appliances, as well as whole-building design and construction can have great impact in reducing energy requirement and costs to households. Potential energy savings from the use of available efficient technologies for cooking, heating, lighting, electrical appliances and building insulation can reach as high as 75 percent.

The type of energy fuels used by households is determined by a combination of factors mainly, availability and/or access and cost factors. As a result there is an inalienable relationship between household energy use/consumption, poverty and health. In many developing countries due to poverty, particularly in rural areas, traditional fuels, such as fuel wood, charcoal and agricultural waste, constitute a major portion of total household energy consumption. These types of household fuels are detrimental to their health particularly in urban areas where such fuels are used indoors.

The problem of indoor air pollution has been with us for ages and without aggressively introducing a clean energy agenda, we may not win the war to reverse effects of indoor air pollution on health particularly of women and children. To illustrate the threat on health, small particles with a diameter of up to 10 microns (PM 10) are the most widely used indicators on the health hazard of indoor air pollution. Fine particles (with a diameter of up to 2.5 microns (PM 2.5) are able to penetrate deep into the lungs and appear to have the greatest health-damaging potential. It is known that these particles can cause inflammation of the airways and lungs and impair the immune response, yet the precise mechanism by which exposure to indoor air pollution translates into disease is still unknown.

Burning solid fuels produces extremely high levels of indoor air pollution: typical 24-hour levels of PM 10 in biomass-using homes in Africa, Asia or Latin America range from 300 to 3000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Peaks during cooking may be as high as 10 000 $\mu\text{g}/\text{m}^3$. By comparison, the United States Environmental Protection Agency has set the standard for annual mean PM 10 levels in outdoor air at 50 $\mu\text{g}/\text{m}^3$; the annual mean PM 10 limit agreed by the European Union is 40 $\mu\text{g}/\text{m}^3$. As cooking takes place every day of the year, most people using solid fuels are exposed to levels of small particles, many times higher than accepted annual limits for outdoor air pollution.

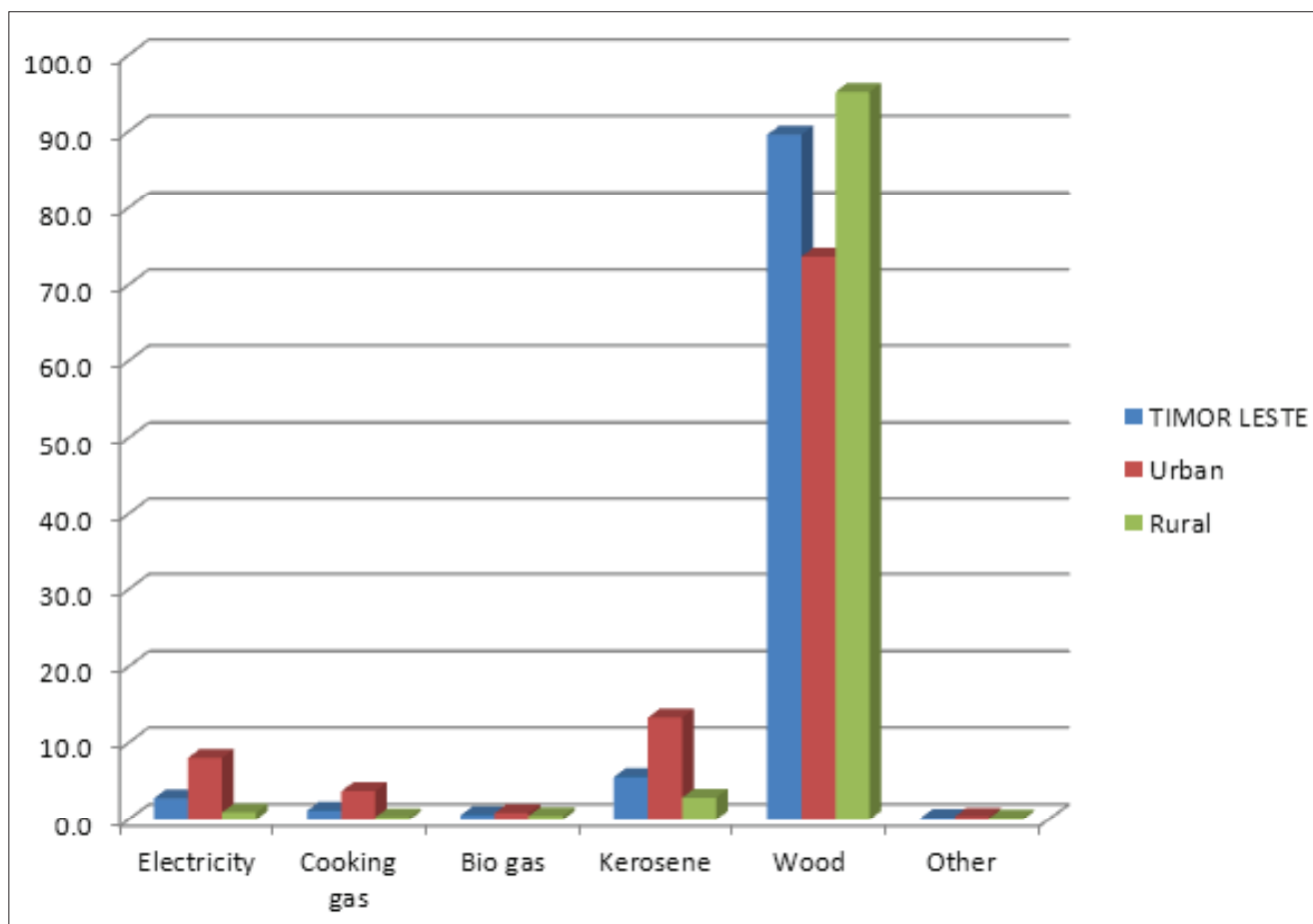
The more time people spend in this highly polluted environment, the more dramatic the consequences for health. Women and children, indoors and in the vicinity of the hearth for many hours a day, are mostly at risk from harmful indoor air pollution. Studies conducted and documented by WHO point to the fact that inhaling indoor smoke doubles the risk of pneumonia and other acute infections of the lower respiratory tract among children under five years of age. Women exposed to indoor smoke are three times more likely to suffer from chronic obstructive pulmonary disease (COPD), such as chronic bronchitis or emphysema, than women who cook with electricity, gas or other cleaner fuels. Coal use doubles the risk of lung cancer, particularly among women.

7.2 Cooking fuel

In this analysis, cooking fuels are categorized into clean, marginally clean and unclean fuels. In this categorization, electricity and cooking gas (LPG) are deemed to be clean energy sources while kerosene and bio gas are marginally clean energy sources and wood is considered unclean. Without categorization it is evident from the data that majority of households in Timor-Leste use wood as their cooking fuel. Nationally, 89.9 percent of households use wood for cooking. The picture is similar in urban and rural areas where 73.6 percent and 95.1 percent respectively of households use wood for cooking (Figure 7.1).

Similarly, over 90 percent of households in the districts and sub-districts use unimproved cooking fuels, mainly wood. The only slight deviation is in Dili, which is the capital city and mainly an urban district, where 14.1 percent, 17.4 percent and 68.5 percent of households use clean, improved and unimproved cooking fuels respectively.

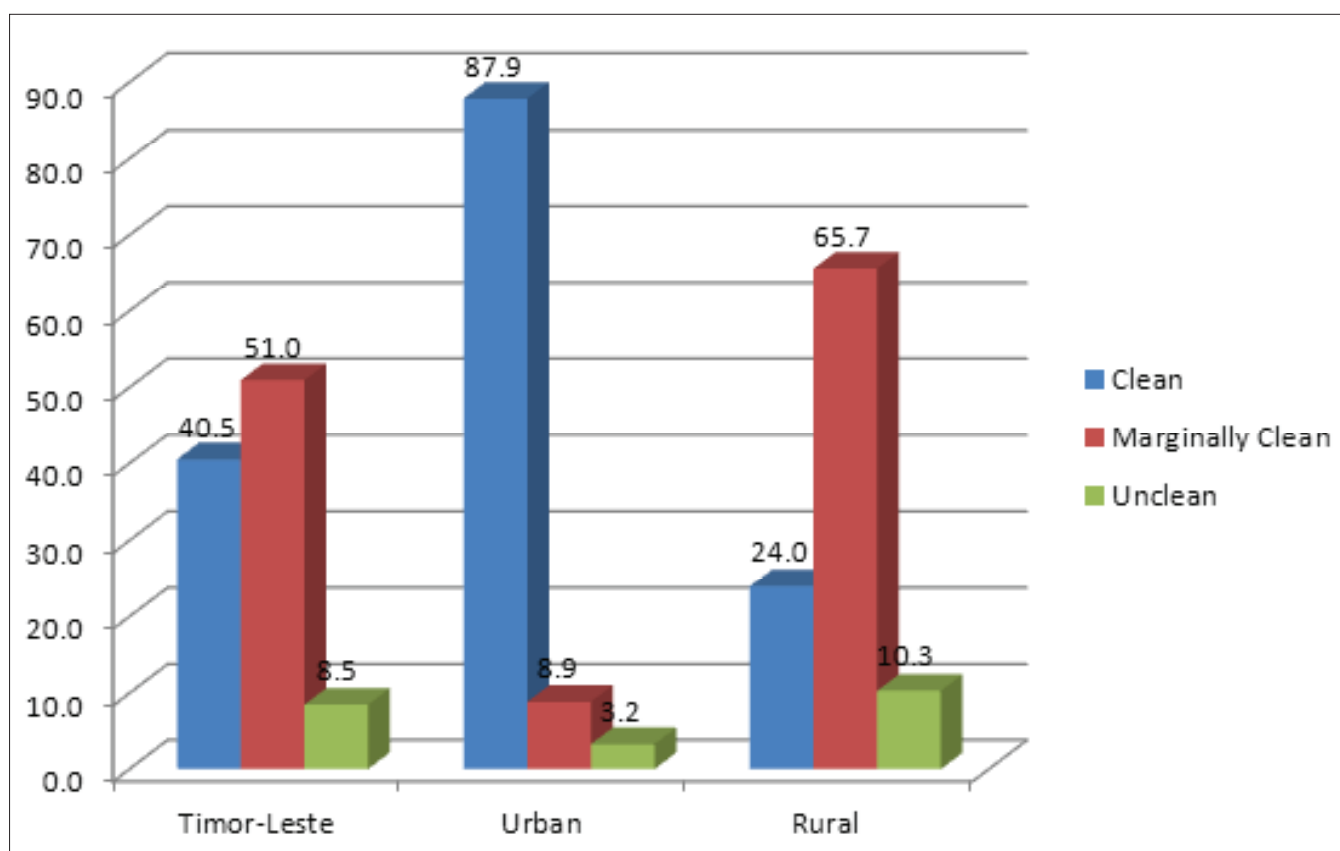
Figure 7.1: Percentage households by cooking fuel



7.3 Lighting fuel

Energy efficient lighting is one of the most cost-effective ways households can reduce energy use for the greener good and costs. In this analysis, lighting fuels are categorized into clean, marginally clean and unclean fuels. In the categorization, solar and electricity are classified as clean while kerosene, candle and biogas marginally clean besides wood and candle berry tree that are classified as unclean. With this classification, it emerges from the census data that at the national level, 40.5 percent, 51 percent and 8.5 percent of households use clean, marginally clean and unclean fuels respectively for lighting. The situation presents a marked contrast when comparing rural and urban areas. A significant majority (87.9 %) of urban households derive their lighting fuel from clean sources while a paltry 3.2 percent of the urban households derive their lighting fuel from unclean sources of lighting fuel. On the contrary, only 24 percent of rural households use clean lighting fuels while 76 percent either use marginally clean or unclean lighting fuels (Figure 7.2).

Figure 7.2: Percentage households by lighting fuel



Evaluating the situation in the districts and sub-districts presents a mixed outcome with Dili a largely urban district posting 89.5 percent of households using clean lighting fuels while most of the districts and sub-districts having less than 45 percent of households using clean lighting fuels. Apart from Dili, the second district with highest percentage of households using clean lighting fuel is Manatuto while Ainaro has the least, as presented in table 5.2.

Table 5.2: Percentage households with access to clean lighting fuel – districts

District	DILI	MANATUTO	LAUTEM	VIQUEQUE	BAUCAU	AILEU	LIQUIÇA	COVALIMA	BOBONARO	ERMERA
Percentage Households using clean lighting fuel	89.5	44.7	36.5	33.9	30.8	30.2	30	29.5	28.7	27.1

CHAPTER 8

HOUSEHOLD ASSETS

8.1 Household Assets

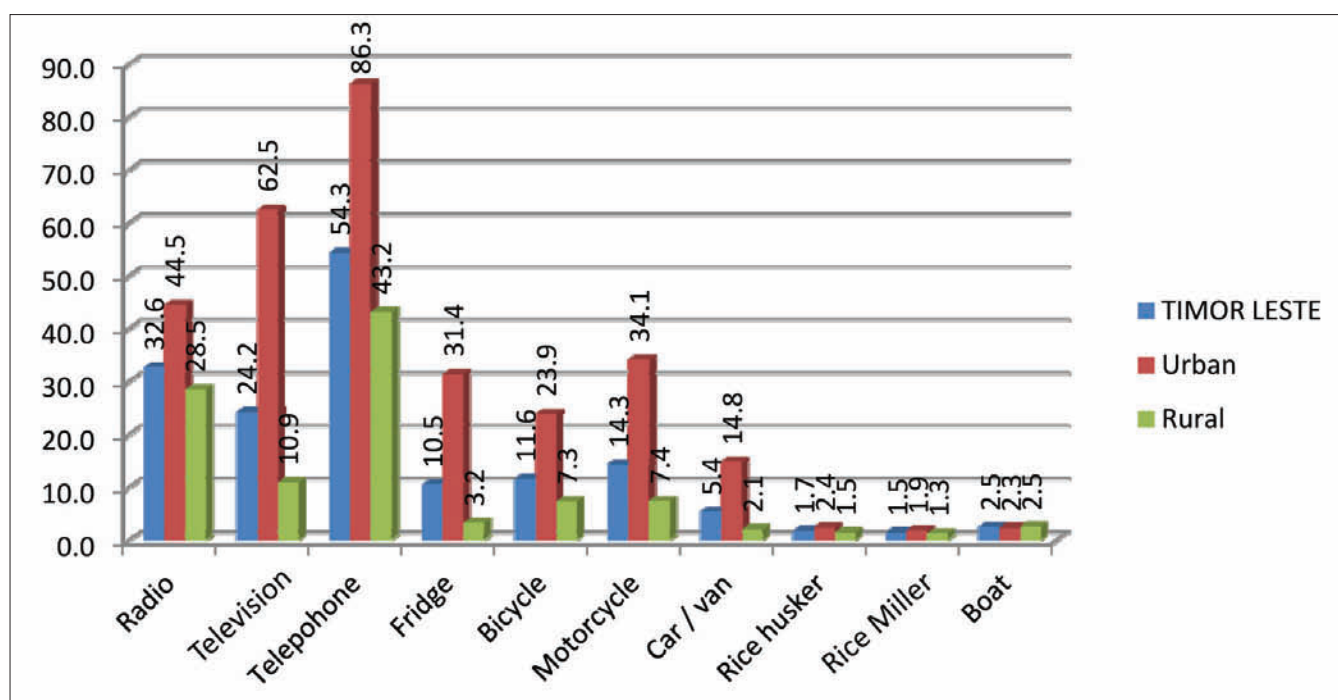
For a significant proportion of households the basic facilities and amenities of the dwelling and material quality of life generally are usually enhanced by possession of assets or consumer durables. These include devices for domestic labour saving (e.g. washing machines and dishwashers), for food storage (e.g. refrigerators and freezers), for communication (e.g. telephones and in some cases computers) and for entertainment (e.g. televisions, video and audio systems). One of the most expensive consumer durable for many households is a private motor vehicle which, although not internal to the dwelling (except perhaps in the case of integral garaging) is nevertheless like the consumer durables mentioned in being an adjunct of the relatively affluent lifestyles enjoyed by many households.

Consumer durables or assets may be deemed as a component for measuring consumption when attempting to obtain direct measure of living standards. This therefore may be reflected in the state of housing a household lives in. However it needs to be pointed out from the on-set, that since most of these durables are bought once in a long span, they are not adequate to gauge consumption levels at households.

8.2 Ownership of household assets

The census results indicate an expected variation in ownership of assets especially electronic goods between rural and urban areas. At least 30 percent of households in urban areas owned a radio, television, telephone and a motorcycle (Figure 8.1).

Figure 8.1: Percentage households by ownership of household items



Overall, over half of the households at the national level owned a telephone and 5.4 percent own a car/van.

Ownership of assets across districts depicts a fairly congruent pattern with the exception of Dili. As depicted in table 8.1, over 10 percent of households in all the districts own at least a radio, television and telephone while very minimal proportions(less than 2 % of households) in all the districts own cars, rice huskers, rice millers and boats.

Table: 8.1: Percentage households by ownership of household assets (Districts)

	Radio	TV	Phone	Fridge	Bicycle	Motorcycle	Car / van	Rice husker	Rice Miller	Boat
AINARO	39.8	11.1	45	2.1	4.5	6.8	2	0.9	0.8	0.9
AILEU	37.6	12.9	48	3	6.3	9.6	2.5	1.3	1.3	1.3
BAUCAU	26.3	17.6	51.7	6.7	5.2	7.8	3.1	2.1	1.7	2.4
BOBONARO	26.9	14.7	49.8	4.2	7.3	12.6	2.6	2.3	1.4	2.8
COVALIMA	24.9	14.3	44.8	4.9	13.3	18.1	2.7	1.5	1.6	2.2
DILI	45.1	66.8	87.4	36.2	24.5	34.6	17	1.9	1.5	3.7
ERMERA	40.7	10.1	48.6	2.4	4.6	5.5	2.7	1.3	1.7	1.1
LIQUIÇA	36	16.3	57.4	7.2	8.2	9.5	3.4	1.4	1.4	3.9
LAUTEM	23.5	16	50.2	4.2	11.7	9.6	2.8	1.3	1.6	1.9
MANUFAHI	37.1	15.8	55	4.5	15.7	11.7	2.8	1.5	1.3	2.9
MANATUTO	25	20	45	7.4	13.8	8.5	3.1	2.4	1.9	3.4
OECUSSI	23	11.1	24	3.1	8.9	10.5	1.7	2.3	1.1	2.3
VIQUEQUE	21	13.4	40.5	4.5	11.1	7.7	2.2	1.6	1.7	1.7

CHAPTER 9

HOUSING ADEQUACY

9.1 Housing quality

One of the uses of housing censuses is the assessment of the quality of housing (UN 2008, pg13). Housing quality is a comprehensive concept that outlines whether or not housing is sufficient to meet recognized housing quality standards as well as specific household needs (Conley and McCray 1997 pg 5). It takes into account, type of construction, materials used, amount of space, services and facilities, condition of facilities within and outside the dwelling, function and aesthetics among many others (Jiboye 2010 pg 79)

While it is generally acknowledged that implications of housing quality on the wellbeing of members of a household are comprehensible, there is no concurrence on the appropriate way of constructing a housing quality index. Housing quality is a composite good; as a result, the index combines scores for materials of the outer walls, roof and floor finish, type of cooking fuels, type of lighting fuels, type of water services and type of human waste disposal services. These elements are combined to form a single latent factor called “**a consolidated housing quality index**”. The main aim of this analysis is to estimate the share of deficient housing stock.

The absence of enumerator evaluations in census data collection suggests that any measure of housing quality as reported by the household is fundamentally arbitrary. Nonetheless, census data provides the only comprehensive information on the nation’s housing stock (Conley and McCray 1997 pg 5).

9.1.1 Methodology to assess housing quality

According to Conley and McCray (1997), structural condition is the most visible component associated with housing quality. However, a comprehensive view of housing quality encompasses many quality measures, including plumbing facilities, persons per room, age of dwelling and house value as well as affordability requirements, access to public water and sewer, structure types and home ownership issues. Water supply, sewage disposal and sources of house heating fuel also serve as indicators of housing quality.

It is important to note that while some frameworks for measuring housing quality do include tenure as one of the variables, this has not been included in this analysis since it may be argued that the fact that one has rented their dwelling does not necessarily mean that they are staying in poor conditions. It is a fact that in most countries rental accommodation is normally available for all income groups and what normally limits households to access the best rental housing is their level of earnings. Empirically from the 2010 Timor-Leste census data, when comparing the tenure and wall materials as a proxy to the structural adequacy, the results revealed that actually households who actually rent their dwelling live in better housing than those who own their dwellings. For instance from the 2010 Timor-Leste census, 27.4 percent of households who own their dwellings had stone/and concrete wall compared to a massive 79.5 percent of households who do not own their dwelling whose wall are stone/concrete.

On the other hand, a key variable for determining housing quality i.e. space adequacy or crowding measured by persons per room could not be included in this index because the census did not cover a question on habitable rooms.

This index therefore applies the concept housing quality as depicted above within the overall framework of adequate housing as reflected in the Habitat Agenda to the extent that is possible to accommodate from the 2010 Timor-Leste Census data. *The Habitat Agenda emphasizes that “adequate shelter means more than a roof over one’s head. It also means adequate privacy; adequate space; physical accessibility; adequate security; security of tenure; structural stability and durability; adequate lighting, heating and ventilation; adequate basic infrastructure, such as water-supply, sanitation and waste-management facilities; suitable environmental quality and health-related factors; and adequate and accessible location with regard to work and basic facilities: all of which should be available at an affordable cost”*

In construction of the index, wall, roofing and floor materials are assigned values according to their durability and/or fines in finish. The main source of drinking water is ranked based on hygienic conditions of the water source; water from an indoor tap is considered safer than water from rivers, lakes or ponds, for example. This approach is somewhat modeled along the principles of the **Likert Scale Invention** (a measurement method invented by Likert which applies a form of rating scale to analyse responses that are based on assessments of adequacy or otherwise of a facility, situation or item), it deviates slightly from Likert’s approach due to the fact that the ranking/scores are not based on attitudes, emotion or opinion but on agreed standards. As earlier illustrated, the fact as to whether water from an indoor tap is safer for drinking than water from an open surface source like a dam cannot be doubted. Equally that wall finished from concrete material is more durable than wall constructed by say carton cannot be contested.

The variables separated into structural and service adequacy are ranked according to their adequacy as described above (see table 9.1). The census options for these variables are then assigned scores that are consolidated for every household as shown in Table 9.2. The Numbers in each table column represent the materials as coded in the questionnaire, see appendix. Since they are seven housing quality variables, the top consolidated score (score 1 for each item) is 7 per household, while the lowest score (score 5 for each item) is 35 per household. The consolidated scores are thereafter ranked and then aggregated. Ranking is done as follows:

Table 9.1: Scores Range

Scores 7 to 11	Rank 1
Scores 12 to 17	Rank 2
Scores 18 to 23	Rank 3
Scores 24 to 29	Rank 4
Scores 30 to 35	Rank 5

Table 9.2: Housing Quality Order

Quality Order	Structural Adequacy				Service Adequacy										
	Wall		Floor		Roof	Code	Drinking Water	Human Waste Disposal	Cooking Fuel	Lighting	code	Material	code	Material	code
	Material	code	Material	code	Material	Code	Material	Material	Material	Material	code	Material	code	Material	code
1	Concrete/ Brick	1	Tile	2	Tile	3	Bottled water	Pour/Flash to septic tank/pit	Electricity	1	Electricity	3	Electricity	1	Electricity
2	Bamboo	3	Concrete	1	Concrete	5	Piped pumped indoor	VIP Latrine	Cooking gas	2	Solar	2	Cooking gas	2	Solar
3	Rock	7	Wood	3	Corrugated Iron/Zinc	2	Piped pumped outdoors	Pit latrine with slab	Biogas	3	Bio gas	1	Biogas	3	Bio gas
4	Palm Trunk	6	Bamboo	5	Asbestos	4	Public Tap	Pour/Flash to elsewhere	Kerosene	4	Candle	4	Kerosene	4	Candle
5	Corrugated Iron/zinc	4	Soil/Clay	4	Palm Leaves, thatch	1	Rain water collection	Pit Latrine without slab/open pit	Wood	5	Kerosene	5	Wood	5	Kerosene
6	Wood	2			Bamboo	6	Protected Well/spring	Hanging toilet/ latrine		6	Candlenut/ candle berry tree	6			Candlenut/ candle berry tree
7	Clay/Soil	5					Tube well/ borehole	No facility or bush		7	Wood	7			Wood
8							Unprotected well/spring			8					
9							Water vendor / tank			9					
							River, lake, stream			10					

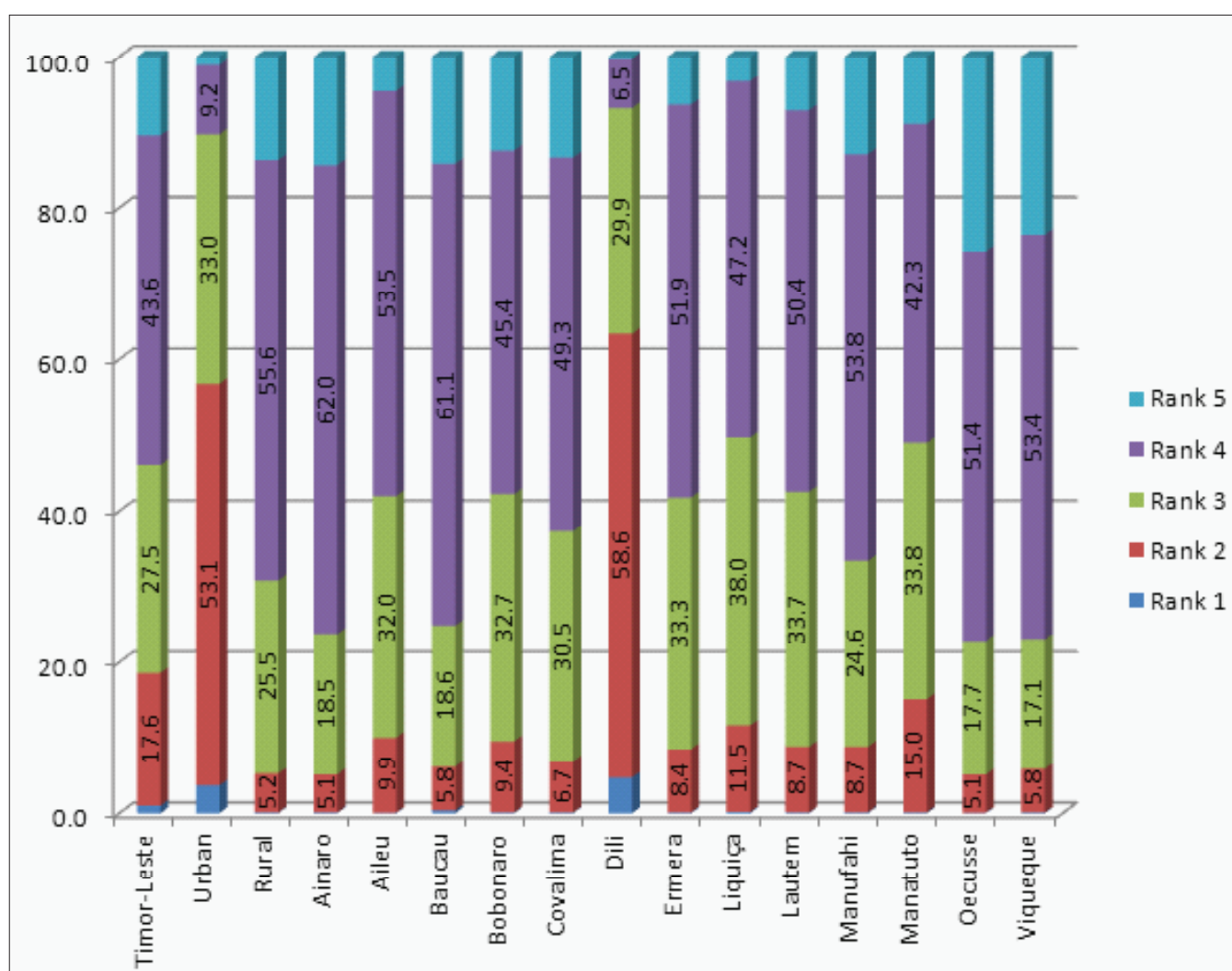
Table 9.3: Housing Quality ranking

	Roof	Wall	Floor	Water	human waste disposal	Cooking fuel	Lighting fuel
Scores	Codes	codes	codes	codes	codes	codes	Codes
Score 1	3	1	2	7 & 1	3	1	1 & 7
Score 2	5	3 & 7	1	2 & 3	2 & 1	2	2 & 4
Score 3	2	6	3	6	4	3	3
Score 4	4	4	5	5 & 4	5	4	6
Score 5	1 & 6	5 & 2	4	8 & 9 & 10	6 & 7	5	5

9.2 Housing Quality Dynamics

From the ranking order earlier presented, the results of Census 2010 divulge that at the national level, the quality of housing for most households was either ranked¹³ 2, 3 and 4 at 17.6, 27.5 and 43.6 percent respectively. The situation in the districts closely mirrors the national picture except Dili which has a high percentage (58.6 %) of households with quality rank 2 for their housing. Overall, very few households at the national and district level attained quality rank 1 (Figure 9.1).

Figure 9.1: Percentage households by housing quality ranking in districts

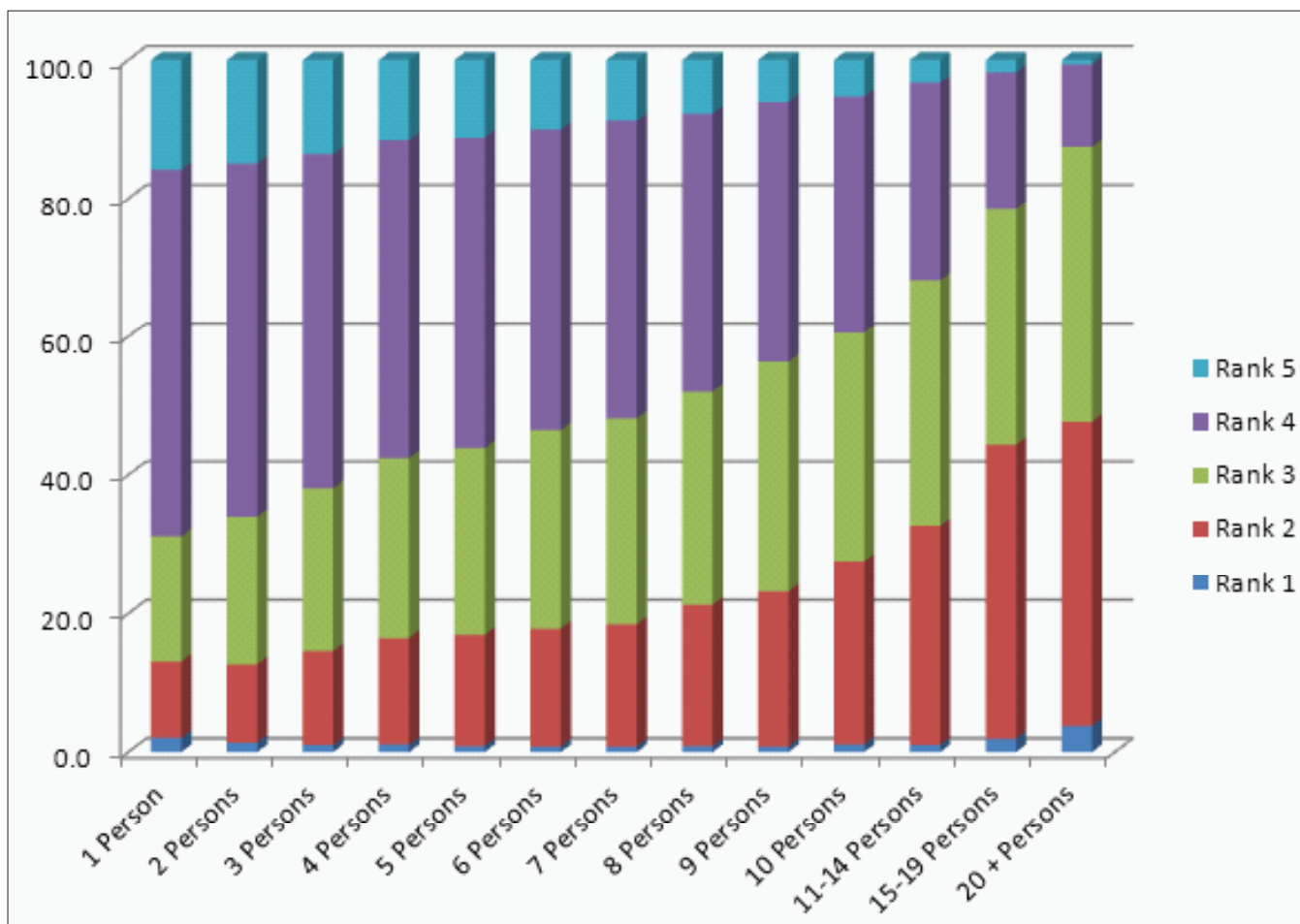


¹³ Rank 1 denotes best and rank 5 worst (comparatively)

9.3 Housing quality and household size

The census results point to a strong relationship between household-size and the overall housing quality. As can be observed in the figure 9.2 below, at the national level, a higher percentage of smaller households occupied housing of less quality compared to larger households.

Figure 9.2: Percentage households by housing quality and household size

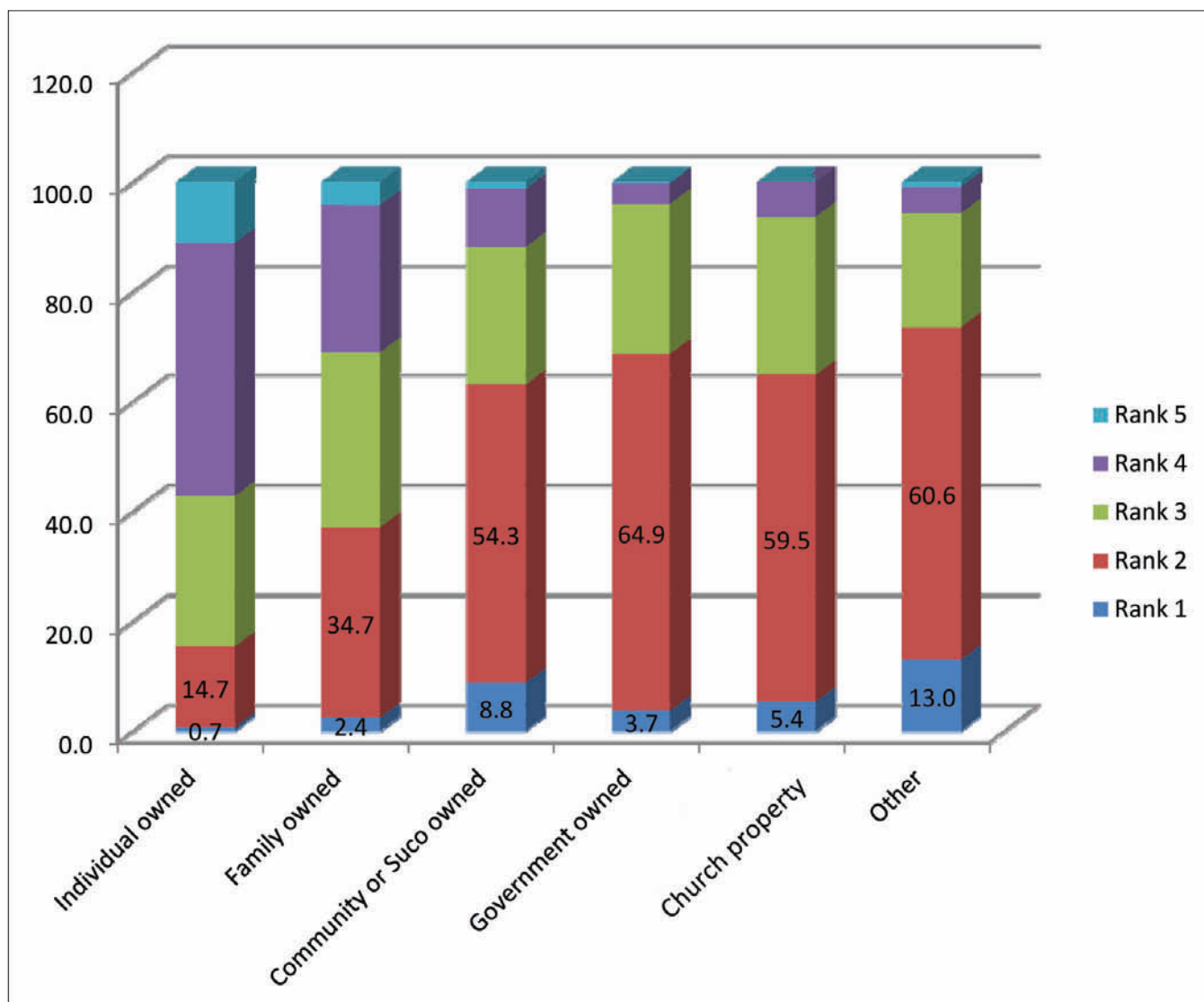


9.4 Housing quality and tenure

The general thrust of the results vindicates the observations earlier made when comparing the external wall materials and tenure. It emerges that the general quality of housing which is individually or family owned is poorer compared to housing owned by community, government or church. For instance at the national level, the percentage of households with housing of quality rank 2 for individual, family, community, government and church owned housing was 14.7, 34.7, 54.3 and 64.9 respectively as depicted in the Figure 9.3.

On the contrary, among the households who own their dwelling individually, a significant 46.1 percent were of quality rank 4 compared to only 10.6, 3.8 and 6.4 percent of those in housing owned by Community, Government and Church respectively whose housing was of quality rank 4. This phenomenon may be attributed to the fact that most individually owned housing are self built from traditional materials and are in most instances lacking in quality structural finesse and basic services due to individual financial and technical limitations.

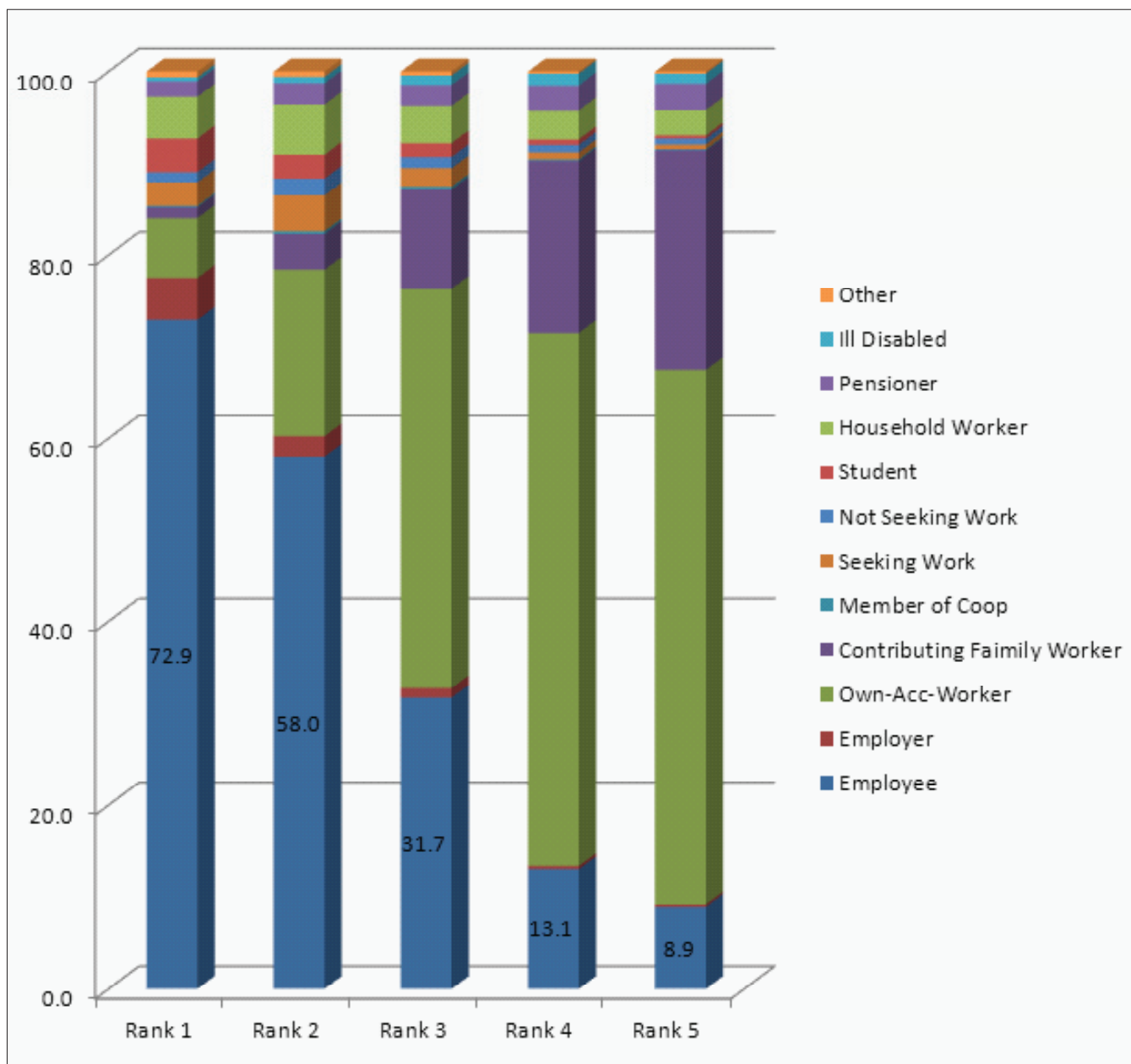
Figure 9.3: Percentage households by housing quality ranking and tenure



9.5 Housing quality by economic activity of head

The census data reveals a relationship between the economic activity of the head of household and the overall housing quality for the households. At the national level, out of the households whose dwellings attained housing quality rank 1, a whopping 72.9 percent of the heads of those households are employees compared to only 8.9 percent of households with quality rank 5 whose heads were employees (Figure 9.4).

Figure 9.4: Percentage households by housing quality ranking and economic activity



9.6 Homelessness

One of the key factors that result in homelessness includes housing affordability stress, family breakdown, poor life transitions (particularly from statutory or institutional settings) and untreated mental health and substance abuse disorders. These factors operate and encourage homelessness not in their individual manifestation but as composite determinants.

From the census data, there were 12,427 homeless people or outdoor sleepers out of which 37.2 percent were female and 62.8 percent were male. 65.9 percent were netted in the urban areas while only 34.1 percent were in rural areas. Homeless people were captured in all the districts and Lautem and Manufani districts had the least proportion of homeless people (0.1 % each) while Dili had the highest proportion of 44 percent followed by Baucau at 12.3 percent.

9.7 Housing requirements

As the population of any country including that of its towns and cities grows, so does the need for housing. It is thus necessary to fathom the extent to which this need can be assessed. Whereas there is agreement on the necessity of assessment of housing need, there is no equivalent consensus

on the approach and methodology for assessing that need in any jurisdiction. However, the following methodology propagated by Struyk et al (1990) has been one of the pillars for housing need assessment. Struyk’s approach is anchored on estimating the need for new and upgraded housing units based on the number required to meet a minimum acceptable standard that is pre-defined.

The approach has however evolved from the theories developed earlier and variations applied by many professionals throughout the world. The variations in Struyk’s approach have mainly been informed by the different structures of the housing market in various countries and the nature of housing data available for undertaking this assessment.

From the various attempts to derive housing requirements and from the data collected from the 2010 Timor-Leste Census, the following are some of the variables that constitute housing requirement:-

- Unmet current housing needs
- Homeless
- Households with deficient physical attributes to the extent that their shelter is irreparable
- Households without adequate access to basic services such as toilet(sharing toilet), safe water, human waste disposal etc
- Newly arising housing needs

Applying the above enumerated procedure, the following equation may be derived :

Current unmet needs is = A

Number of Homeless = B

Deficient (physical and access to services) Housing = C

Newly arising need = D

The Housing Requirement = A + D, where A = B + C

This calculation is then done at the national level as follows. From the census data, the number of homeless persons is 12,427, the percentage of households whose housing is deficient (extremely or minimally) either physically or due to lack of services are 10.4 percent¹⁴ (equivalent to 19, 204 households) as derived from Table 9.4.

Table 9.4: Housing Conditions

	Excellent	Good	Requires Minimal Repairs	Somewhat Deficient	Extremely deficient
Timor-Leste	1	17.6	27.5	43.6	10.4

The current unmet need A = Number of Homeless (12,427) + Deficient Housing (19, 204) = 31, 631. Therefore for Timor-Leste, some 31,631 housing units are required urgently. The cost of providing this from the public finances depends first on the acceptable national standard for each household in terms of space, design and materials.

¹⁴ Depending on the extent to which the category designated as “Somewhat deficient” is lacking in physical soundness and access to services, this percentage may include a proportion in the category of somewhat deficient. Therefore depending on the national consensus and further research both categories “somewhat deficient” and “extremely deficient” can be included as current deficient stock

CHAPTER 10

RECOMMENDATIONS AND CONCLUSION

This analysis has mainly revealed that while most households own their dwellings, majority of those who own live in housing that is comparatively physically deficient in quality compared to those who do not own. In terms of the structure and composition of households, which was illustrated earlier as the basic unit of consumption of housing; most households were fairly large (the national average household size is 5.8) in size and apparently the size of households was not significantly different between the urban and rural areas.

Access to basic services such as water and sanitation portrayed a rather mixed picture with the majority of households lacking access to improved water and sanitation. Only 40 percent of the households had access to improved sanitation at the national level. However comparing the urban and rural scenario, the situation looked better in the urban areas where 81 percent of households had access to improved sanitation compared to only 25 percent of rural households.

Overall, considering the general quality of housing, 54 percent of households lived in housing unit that were deficient at the national level, and only 18.5 percent of households lived in housing unit that were sufficient.

10.1 Recommendations

While the past two censuses in Timor-Leste have endeavored to adhere to the UN recommendations on undertaking housing censuses, there is need for future census to further improve compliance especially with the core topics recommended for coverage. One key topic that should be included in future censuses is a count of the housing stock and number of habitable rooms. There are very vital indicators such as crowding that can be derived from these two topics that would further inform data particularly with regard to the household sizes and more so deriving the housing needs of the country.

At the level of concepts, the author noted that, there was a specific housing design and materials for wall that is unique to Timor-Leste. This involves a sub-structure about a meter high from the ground level which is constructed of either block/brick/rocks then the top half of the wall is covered by mainly bamboo. This kind of construction should be categorised and assigned its unique code in future censuses.

Access to water should ideally cover key uses such as drinking water; separate from other uses (purposes). While the inclusion of a question in census 2010 on drinking water was laudable especially in tracking the Millennium Development Goals (MDGs) Goal 7 Target which aims to “*halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation*”, it is noteworthy to recognize that out of all the uses of water, drinking is a small fraction of the total water requirements as depicted in table 10.1.

Table 10.1: Recommended Water Requirements

A recommended basic water requirement for human domestic needs	
Purpose	Recommended commitment (1 per person per day)
Drinking water ^a	5
Sanitation services	20
Bathing	15
Food preparation ^b	10

^a This is a true minimum to sustain life in moderate climatic conditions and average activity levels.

^b Excluding water required to grow food. A rough estimate of the water required to grow the daily food needs of an individual is 2700 l.

Source: (Gleick, 1999)

This therefore necessitates a complementary question on source of water for other uses particularly for cooking.

While the 2010 Census adhered to the UN concepts in principle and as far as they were applicable, future modifications in the census concepts and instruments should be undertaken in such a way that comparison over years is not completely impeded.

Since surveys build on the census data, it is important to note that survey instruments and concepts should not be too divergent from that of the census in order to facilitate comparisons and track progress of some indicators in between censuses.

10.2 Conclusion

Housing is a critical element of the socio-economic, cultural and political progress for any given country and it has to be understood and guided by effective and relevant policies. There is no better way to do this than to use housing census data as the benchmark for guiding housing development.

While housing can be developed by individuals from locally available materials, there is need to ensure that this is done in a sustainable manner guided by appropriate planning and building procedure standards. Census data is at the core of informing state intervention on appropriate building materials, building standards and appropriate planning regimes.

The findings of this analysis revealed the extent to which some progress had been in some fronts while in other fronts there was either a stagnation or a slip in addressing the housing needs of Timorese population.

Some of the areas where the results indicate progress is with households that own their dwellings either communally or individually and use of modern modes of construction for wall which has improved from a paltry 2.1 percent in 2001 to almost 30 percent in 2010. An area that depicts total lack of progress is access to clean cooking fuels. Over 90 percent of households in Timor-Leste cook with wood which does not portray well with clean in-door air quality and environmental sustainability in general.

There is need for continuous concerted effort to address the challenges of access to clean energy especially for cooking and lighting and improved water and sanitation on the other hand.

Housing is a composite commodity as depicted in deriving the housing quality index for this analysis. As such efforts to improve housing quality must address all the elements of housing as a composite good in order to achieve progressive and a holistic impact in human settlements development.

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Appendices

Households by composition and size

		Household Composition															
		Couple							Non-couple								
Total	Type No.	Head/ Spouse	Head/ Spouse/ Children	Head/ Spouse/ Children/ Other	Head/ Spouse/ Children/ Other/ Non	Head/ Spouse/ Other	Head/ Spouse/ Non	Head/ Spouse/ Other/ Non	Head only	Head/ Children	Head/ Children/ Other	Head/ Child/ Non	Head/ Child/ Other/ Non	Head/ Other Rels	Head/ Non	Head/ other/ Non	
		1	2	3	4	5	6	6	6	7	8	9	10	11	12	12	12
		7631	67382	53883	296	479	7517	53	66	9744	12734	11965	70	112	12279	293	147
1	9744	0	0	0	0	0	0	0	0	9744	0	0	0	0	0	0	0
2	16390	7631	0	0	0	0	0	0	0	3996	0	0	0	0	4662	101	0
3	20200	0	9402	0	0	3301	30	0	0	2956	1457	13	0	2965	52	24	0
4	23604	0	12233	3533	40	1795	14	20	0	2259	1916	12	4	1711	40	27	0
5	24636	0	12761	6144	53	964	7	9	0	1583	1911	14	11	1113	28	18	0
6	24195	0	12070	7870	56	607	1	8	0	969	1825	12	20	686	22	21	0
7	20800	0	9451	8477	49	305	0	11	0	548	1446	13	16	384	9	22	0
8	15883	0	5950	7921	50	193	0	3	0	263	1097	2	14	292	8	8	0
9	10752	0	3180	6298	20	141	1	4	0	96	755	1	9	180	1	3	0
10	6983	0	1451	4651	13	80	0	4	0	46	568	1	9	103	2	8	0
11-14	9781	0	877	7622	12	113	0	5	0	18	814	1	23	146	17	12	0
15-19	1524	0	7	1248	3	17	0	2	0	0	157	0	4	33	11	3	0
20+	159	0	0	119	0	1	0	0	0	0	19	1	2	4	2	1	0
Total		4%	36%	29%	0%	4%	0%	0%	5%	7%	6%	0%	0%	7%	0%	0%	0%

Main Construction Material

	Total	Concrete/Brick	Wood		Bamboo		Corrugated iron/ Zinc		Clay	Palm Trunk/Bebak		Rock		Other		
Total	Own	48356	7426	4.2	57076	32.3	5640	3.2	2559	1.4	51471	2413	1.4	1698	1.0	
	Own other	6367	342	4.3	141	1.8	299	3.7	15	0.2	642	100	1.2	106	1.3	
	All	54723	7768	4.2	57217	31	5939	3.2	2574	1.4	52113	2513	1.4	1804	1.0	
Urban	Own	25811	1771	4.3	2053	4.9	1637	3.9	381	0.9	9197	383	0.9	332	0.8	
	Own other	5077	258	4.2	33	0.5	222	3.6	9	0.1	433	7	0.9	72	1.2	
	All	30888	2029	4.3	2086	4.4	1859	3.9	390	0.8	9630	437	0.9	404	0.8	
Rural	Own	22545	5655	4.2	55023	40.7	4003	3	2178	1.6	42274	313	2030	1.5	1366	1.0
	Own other	1290	84	4.5	108	5.8	77	4.2	6	0.3	209	11.3	46	2.5	34	1.8
	All	23835	5739	4.2	55131	40.3	4080	3	2184	1.6	42483	31	2076	1.5	1400	1.0
Ainaro	Own	1397	511	5.4	4157	43.7	433	4.5	317	3.3	2455	99	1	152	1.6	
	Own other	95	7	4.9	9	6.3	7	4.9	2	1.4	16	1	0.7	6	4.2	
	All	1492	518	5.4	4166	43.1	440	4.6	319	3.3	2471	100	1	158	1.6	
Aileu	Own	1263	170	2.5	3922	58.3	464	6.9	433	6.4	346	61	0.9	70	1.0	
	Own other	201	6	2.5	4	1.7	10	4.2	1	0.4	5	7	3	2	0.8	
	All	1464	176	2.5	3926	56.4	474	6.8	434	6.2	351	68	1	72	1.0	
Baucau	Own	3647	706	3.4	10225	49.1	390	1.9	569	2.7	4703	458	2.2	110	0.5	
	Own other	361	17	3.8	15	3.4	16	3.6	1	0.2	25	1	0.2	11	2.5	
	All	4008	723	3.4	10240	48.2	406	1.9	570	2.7	4728	459	2.2	121	0.6	
Bobonaro	Own	3769	403	2.5	1818	11.1	745	4.5	330	2	8516	727	4.4	104	0.6	
	Own other	290	20	4.2	9	1.9	26	5.5	4	0.8	89	24	5.1	9	1.9	
	All	4059	423	2.5	1827	10.8	771	4.6	334	2.0	8605	751	4.4	113	0.7	
Covalima	Own	1531	625	5.7	860	7.9	199	1.8	219	2.0	7370	39	0.4	51	0.5	
	Own other	161	9	4.3	3	1.4	3	1.4	0	0	33	1	0.5	1	0.5	
	All	1692	634	5.7	863	7.8	202	1.8	219	2	7403	40	0.4	52	0.5	
Dili	Own	20608	1346	4.4	1428	4.6	1327	4.3	78	0.3	5454	228	0.7	354	1.1	
	Own other	3652	207	4.7	20	0.5	157	3.6	4	0.1	262	6	0.8	65	1.5	
	All	24260	1553	4.4	1448	4.1	1484	4.2	82	0.2	5716	262	0.7	419	1.2	

Continued

Main Construction Material

	Total	Concrete/Brick	Wood		Bamboo		Corrugated iron/ Zinc		Clay		Palm Trunk/Bebak		Rock		Other			
Ermera	Own	4518	23.9	787	4.2	11642	61.6	523	2.8	130	0.7	791	4.2	401	2.1	113	0.6	
	Own other	293	78.1	18	4.8	26	6.9	19	5.1	0	0	10	2.7	6	1.6	3	0.8	
	All	19280	4811	25	805	4.2	11668	60.5	542	2.8	130	0.7	801	4.2	407	2.1	116	0.6
Liquica	Own	2441	24.5	185	1.9	4234	42.4	183	1.8	53	0.5	2764	27.7	85	0.9	34	0.3	
	Own other	299	80.4	9	2.4	9	2.4	9	2.4	1	0.3	42	11.3	3	0.8	0	0	
	All	10351	2740	26.5	194	1.9	4243	41	192	1.9	54	0.5	2806	27.1	88	0.9	34	0.3
Lautem	Own	11209	22.3	443	4	5137	45.8	617	5.5	51	0.5	2146	19.1	67	0.6	245	2.2	
	Own other	238	189	79.4	8	4	1.7	23	9.7	0	0	10	4.2	2	0.8	2	0.8	
	All	11447	2692	23.5	451	3.9	5141	44.9	640	5.6	51	0.4	2156	18.8	69	0.6	247	2.2
Manufahi	Own	7618	13.1	117	1.5	3180	41.7	85	1.1	30	0.4	3123	41	59	0.8	27	0.4	
	Own other	238	160	67.2	8	9	3.8	10	4.2	1	0.4	38	16	10	4.2	2	0.8	
	All	7856	1157	14.7	125	1.6	3189	40.6	95	1.2	31	0.4	3161	40.2	69	0.9	29	0.4
Manatuto	Own	6753	1600	23.7	182	2.7	2642	39.1	305	4.5	20	0.3	1936	28.7	48	0.7	20	0.3
	Own other	171	142	83	6	9	5.3	4	2.3	0	0	6	3.5	3	1.8	1	0.6	
	All	6924	1742	25.2	188	2.7	2651	38.3	309	4.5	20	0.3	1942	28	51	0.7	21	0.3
Oecusse	Own	13518	2550	18.9	1630	12.1	2320	17.2	243	1.8	283	2.1	6193	45.8	52	0.4	247	1.8
	Own other	372	285	76.6	9	3	0.8	7	1.9	0	0	66	17.7	1	0.3	1	0.3	
	All	13890	2835	20.4	1639	11.8	2323	16.7	250	1.8	283	2.0	6259	45.1	53	0.4	248	1.8
Viqueque	Own	13470	1532	11.4	321	2.4	5511	40.9	126	0.9	46	0.3	5674	42.1	89	0.7	171	1.3
	Own other	337	239	70.9	18	21	6.2	8	2.4	1	0.3	40	11.9	7	2.1	3	0.9	
	All	13807	1771	12.8	339	2.5	5532	40.1	134	1	47	0.3	5714	41.4	96	0.7	174	1.3

Percentage households by age and sex

		15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 +	
Timor-Leste	Total	0.7	3	7.8	10	14.2	13.3	11.3	9	6.9	10.5	13.2	
	Male	0.5	2.8	8.1	10.5	15.1	13.9	11.6	8.9	6.8	9.7	12	
	Female	1.9	3.9	6.2	7.1	8.5	9.7	9.7	9.6	7.3	15.5	20.5	
	Urban	1	4.2	11.1	14.2	17.2	14.3	14.8	11.1	8	5.6	5	6.2
	Male	0.7	3.9	11.5	15	18.2	14.8	14.8	11.1	8	5.6	5	6.2
	Female	2.9	6	8.8	9.5	10.5	10.9	10.9	9.7	10	7.6	9.8	14.3
	Rural	0.6	2.5	6.7	8.6	13.2	13	13	11.5	9.3	7.3	12.2	15.2
	Male	0.4	2.4	6.9	9	14	13.6	13.6	11.8	9.2	7.3	11.3	14
	Female	1.5	3.2	5.3	6.3	7.9	9.3	9.3	9.8	9.4	7.2	17.5	22.5
Ainaro	Total	0.7	2.2	6.5	9.5	14.7	13.5	9.1	6.8	4.7	18.1	14.3	
	Male	0.4	2.2	6.8	9.9	15.8	14.1	9.3	6.7	4.7	16.9	13.4	
	Female	2.3	2.2	4.8	7.4	8.3	9.6	8.2	7.4	4.6	25.3	19.8	
	Urban	1.5	2.5	7	9.1	14.8	13.9	13.9	11.4	7	4	14.8	14
	Male	1.1	2.5	7.1	9.3	16.2	14.2	14.2	11.6	7	4.5	13.4	13.1
	Female	3.6	2.7	6.6	8.1	8.4	12.3	12.3	10.2	6.9	1.8	21.1	18.1
	Rural	0.5	2.1	6.3	9.7	14.6	13.4	13.4	8.6	6.7	4.8	18.9	14.4
	Male	0.3	2.1	6.7	10.1	15.7	14.1	14.1	8.8	6.6	4.7	17.6	13.4
	Female	1.9	2	4.3	7.1	8.3	8.7	8.7	7.6	7.6	5.5	26.6	20.3
Aileu	Total	0.9	2.1	6.2	6.1	11.7	14.7	12.8	11.6	8.1	12.8	13	
	Male	0.5	1.9	6.4	6.4	12.2	15.4	13.4	11.3	8.2	12	12.2	
	Female	3.4	3.4	4.9	3.8	7.9	9.6	9.6	8.6	13.5	7.6	18.5	18.8
	Urban	2	3.8	8.8	13.1	16.2	15.8	15.8	10.8	8.6	7	6.8	7.2
	Male	1.1	3.8	9.6	14.2	17.8	15.9	15.9	12.1	8.2	6.8	5.8	4.7
	Female	6.3	3.8	5.1	7.6	8.9	15.2	15.2	5.1	10.1	7.6	11.4	19
	Rural	0.8	2	6.1	5.6	11.4	14.6	14.6	13	11.8	8.2	13.2	13.4
	Male	0.5	1.8	6.2	5.9	11.9	15.3	15.3	13.5	11.5	8.3	12.4	12.6
	Female	3.1	3.3	4.9	3.5	7.8	9	9	9	13.9	7.6	19.3	18.7

Continued

Percentage households by age and sex

		15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 +
Baucau	Total	0.5	2.2	5.4	6.9	13	12.6	12.1	9.4	9.1	11.5	17.3
	Male	0.3	2	5.5	7.4	14.1	13.3	12.7	9.5	9.2	10.6	15.4
	Female	1.7	3.2	4.3	4.4	6.9	9	8.7	8.9	8.1	17	27.9
	Total	1.3	2.5	6.4	11.3	16.8	14.2	11.9	9.4	7.1	7.8	11.3
	Male	0.5	2.2	6.1	12.1	18.2	14.9	12.4	9.3	7	7.3	10
	Female	5.3	4.3	8.2	7.2	9	10.5	9.2	10.3	7.4	10.5	18.1
	Total	0.4	2.2	5.2	6.2	12.3	12.4	12.1	9.4	9.4	12.2	18.3
	Male	0.3	2	5.4	6.6	13.4	13	12.7	9.5	9.6	11.1	16.3
	Female	1	3	3.6	3.9	6.5	8.7	8.6	8.6	8.2	18.1	29.7
Bobonaro	Total	0.8	2.4	6.8	8.5	11.7	12.5	12.3	9.3	6.8	11.8	17
	Male	0.5	2	7.1	9	12.4	13.2	12.8	9.2	6.6	11.2	15.8
	Female	2.4	4.2	5.2	6.2	7.9	8.8	9.8	9.6	7.8	14.7	23.2
	Total	1.9	3	7.4	11.8	13.7	14	12.5	9.9	6.5	8.1	11.1
	Male	1	2.4	7.4	12.6	14.9	15.2	13.2	9.8	6	7.8	9.7
	Female	6.5	5.9	7.2	7.8	8.1	8.3	9.4	10.2	8.9	9.6	18.1
	Total	0.6	2.2	6.7	7.9	11.3	12.2	12.3	9.2	6.8	12.5	18.2
	Male	0.5	1.9	7.1	8.3	11.9	12.9	12.7	9.1	6.7	11.9	17
	Female	1.5	3.9	4.8	5.9	7.8	9	9.9	9.5	7.6	15.8	24.3
Covalima	Total	0.7	3.2	8.2	9.5	14	12.9	11.3	8.5	5.5	12.1	14.3
	Male	0.5	3.1	8.5	9.7	14.6	13.3	11.5	8.7	5.6	11.3	13.2
	Female	2.1	3.4	6.5	8.3	9.4	9.9	9.8	7.3	4.9	16.9	21.6
	Total	1.6	3.6	8.3	11.6	16.2	16	12.2	10.3	7.6	4.5	8.1
	Male	1.1	3.7	8.2	11.6	16.7	17	12.2	11.2	7.9	3.6	6.8
	Female	4.5	3.4	8.4	11.2	13.4	10.1	12.3	5	6.1	10.1	15.6
	Total	0.6	3.1	8.2	9.3	13.7	12.5	11.1	8.3	5.2	13	15
	Male	0.4	3.1	8.5	9.5	14.4	12.8	11.4	8.4	5.3	12.3	14
	Female	1.7	3.4	6.2	7.9	8.8	9.8	9.4	7.6	4.8	17.9	22.4

Continued

Percentage households by age and sex

		15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 +
Dili	Total	0.4	4.2	12.5	14.8	17.5	14.3	11	8.4	5.7	4.9	6.3
	Male	0.4	4	13	15.5	18.5	14.7	11.2	8.1	5.3	4.3	5.2
	Female	1.1	5.7	9.5	9.7	10.8	11.2	9.9	10.4	8.5	9.5	13.9
	Total	0.4	4.5	13.3	15.7	18.4	14.2	10.6	7.9	5.4	4.3	5.4
	Male	0.4	4.2	13.8	16.5	19.4	14.6	10.7	7.5	4.9	3.6	4.3
	Female	0.9	6.4	10	10	11.8	11.3	9.4	10.4	8.8	8.5	12.4
Rural	Total	0.5	2.6	9	10.6	13.3	14.5	13	10.8	7.2	8.1	10.5
	Male	0.3	2.6	9.3	11	14.3	15.1	13.2	10.8	7.2	7.2	9
	Female	1.8	2.4	7	8.4	6.1	10.9	11.9	10.3	7.1	13.8	20.3
	Total	0.8	2.9	6.8	9.1	13.9	15	11.8	10.3	7.7	9.9	11.7
	Male	0.6	2.7	7.1	9.5	14.9	15.7	11.9	10.1	7.7	8.9	10.8
	Female	1.9	3.8	5.1	6.8	8	10.8	11	11.7	7.9	16.1	16.9
Ermera	Total	2.4	4.4	7.6	13.4	17	14.7	9.9	9.1	6	6.2	9.2
	Male	1.9	4.3	8	13.8	18.2	15.5	9.9	8.3	6.4	5.6	8.1
	Female	5.6	4.9	4.9	11.1	9.9	9.9	9.9	14.2	3.7	9.9	16
	Total	0.7	2.8	6.8	8.9	13.7	15	11.9	10.4	7.8	10.2	11.9
	Male	0.5	2.6	7.1	9.3	14.7	15.7	12.1	10.2	7.7	9.1	11
	Female	1.7	3.7	5.1	6.5	7.9	10.8	11.1	11.5	8.2	16.4	16.9
Liquiça	Total	0.9	3.1	6.5	6.7	12.3	12.4	11.4	10.8	8	13.2	14.6
	Male	0.6	2.9	6.7	7.1	13.1	13	11.6	10.9	8.4	12.2	13.5
	Female	3.2	3.9	5.1	3.7	6.6	8.8	10.6	10.2	5.7	19.8	22.4
	Total	4.6	8.2	9	11.7	13.6	12.1	9.1	8.3	6.1	7.8	9.4
	Male	3.2	7.3	9.9	13.1	14.9	12	8.6	8.3	6.8	7.6	8.1
	Female	10.8	12.2	5	5	7.9	12.2	11.5	8.6	2.9	8.6	15.1
Rural	Total	0.7	2.6	6.3	6.3	12.1	12.5	11.6	11	8.2	13.6	15.1
	Male	0.4	2.6	6.5	6.7	12.9	13	11.8	11.1	8.5	12.6	13.9
	Female	2.2	2.8	5.1	3.5	6.5	8.4	10.5	10.4	6	21.2	23.3

Continued

Percentage households by age and sex

		15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 +
Lautem	Total	0.9	2.2	4.9	10	14.5	13.9	12	8.9	7.8	8.6	16.2
	Male	0.7	1.9	4.6	10.6	15.9	15.1	12.3	8.6	7.8	7.6	15
	Female	1.7	3.7	5.8	8	9.3	9.5	11.1	10.1	7.7	12.5	20.7
	Total	2.7	4.6	6.5	11.7	15.7	13.5	12.3	9	7.1	6.5	10.4
	Male	2	4	6.4	11.8	17.2	14.6	12.4	8.8	7.2	6.5	9.2
	Female	5.4	7.3	6.8	11.7	10.1	9.4	11.9	9.8	6.6	6.3	14.8
	Total	0.5	1.7	4.5	9.7	14.3	14	12	8.9	8	9	17.4
	Male	0.5	1.4	4.3	10.3	15.6	15.2	12.3	8.5	8	7.8	16.3
	Female	0.8	2.8	5.6	7.2	9.2	9.5	10.9	10.2	7.9	13.8	22
Manufahi	Total	0.4	2.2	7.2	8.5	13.2	13.7	10.7	9.4	8.1	11.8	14.8
	Male	0.3	1.9	7.2	8.7	14	14	11	9.4	8	11.4	14
	Female	1.6	4.1	6.9	6.7	7.7	11	9.1	8.8	8.6	15.1	20.4
	Total	0.7	2.8	7.1	11.3	14	14.9	11.6	9	8.4	8.3	11.9
	Male	0.4	2.3	7.1	11.7	14.9	15.1	11.9	9.3	8.9	7.6	10.7
	Female	2.5	6.3	7.2	8.9	7.6	13.5	9.3	7.2	5.1	12.7	19.8
	Total	0.4	2	7.2	7.6	13	13.3	10.5	9.5	8	12.9	15.6
	Male	0.2	1.8	7.2	7.9	13.7	13.7	10.7	9.5	7.8	12.5	14.9
	Female	1.3	3.4	6.8	5.9	7.8	10.2	9.1	9.3	9.8	15.9	20.5
Manatuto	Total	0.5	2.5	6.3	7.8	12.7	12.4	12.6	9.8	7.3	12.2	15.8
	Male	0.3	2.3	6.3	8	13.7	12.9	12.6	9.7	7.1	11.7	15.2
	Female	1.7	3.7	6	6.7	5.7	8.9	12.6	11	8.3	15.6	19.6
	Total	0.6	1.2	5.7	10.8	13.4	14.8	13.8	10.4	7.4	8.8	13.2
	Male	0.4	1	6.2	11.2	14.7	16.1	13.8	9.6	6.9	7.7	12.3
	Female	1.7	2.3	2.3	8	5.7	6.9	13.2	15.5	10.3	15.5	18.4
	Total	0.5	2.8	6.4	7.2	12.5	11.9	12.3	9.7	7.3	13	16.4
	Male	0.3	2.6	6.4	7.3	13.5	12.3	12.3	9.7	7.2	12.6	15.9
	Female	1.7	4.1	7	6.4	5.7	9.4	12.5	9.9	7.8	15.7	19.9

Continued

Percentage households by age and sex

		15 - 19	20 - 24	25 - 29	30 - 34	35 - 39	40 - 44	45 - 49	50 - 54	55 - 59	60 - 64	65 +
Oecusse	Total	0.8	3.8	9.4	11.8	13.3	12.5	11.1	8.1	6.3	11.8	11
	Male	0.7	3.6	9.6	12.3	14.1	13	11.5	8.1	6.3	11	9.8
	Female	1.8	4.6	7.8	8.6	8.6	9.8	9.1	8.5	6.8	16.6	17.8
	Total	3.5	9.2	14.7	15.6	13.7	14.8	8.9	6.2	4.4	4.4	4.7
	Male	2.9	8.9	15.2	16.9	14.9	15.3	9.2	6	3.9	3.3	3.5
	Female	7.4	10.6	11.6	7.9	6	11.6	6.9	7.4	7.4	11.1	12
Viqueque	Total	0.5	3.1	8.7	11.3	13.2	12.2	11.4	8.4	6.6	12.8	11.8
	Male	0.4	3	8.9	11.8	14	12.7	11.8	8.3	6.6	12	10.7
	Female	1.2	3.8	7.3	8.6	8.9	9.6	9.4	8.6	6.8	17.2	18.5
	Total	0.8	3	6.8	11.5	15.7	11.4	9.1	7.4	5.9	11.6	16.9
	Male	0.6	3	7	12.2	16.7	11.9	9.3	7.6	5.9	10.6	15.2
	Female	1.8	2.8	5.3	7.3	9.5	7.9	8.1	6.8	5.7	17.8	27
Viqueque	Total	1.8	3.4	7.9	15.8	18.1	15	9.1	7.6	6.2	6.6	8.5
	Male	1.4	3.3	7.4	16.2	19.2	16	9.2	7.1	6.4	5.8	8
	Female	3.9	3.9	10.5	13.7	12.4	9.8	8.5	10.5	5.2	10.5	11.1
	Total	0.7	2.9	6.7	11.2	15.5	11.1	9.1	7.4	5.9	11.9	17.5
	Male	0.6	3	7	11.9	16.5	11.7	9.3	7.6	5.9	10.9	15.8
	Female	1.6	2.7	4.9	6.8	9.3	7.7	8.1	6.5	5.8	18.4	28.4

Percentage households by sex of head and size

	Total Households	1 Person	2 Persons	3 Persons	4 Persons	5 Persons	6 Persons	7 Persons	8 Persons	9 Persons	10 Persons	11-14 Persons	15-19 Persons	20+ Persons	
Timor-Leste	Total	184,651	5.3	8.9	10.9	12.8	13.3	13.1	11.3	8.6	5.8	3.8	5.3	0.8	0.1
	Male	158,389	5.2	6.9	9.7	12.4	13.5	13.8	12	9.3	6.3	4.1	5.7	0.9	0.1
	Female	26,262	6	20.6	18.2	14.9	12.1	9.1	6.6	4.3	2.9	1.9	2.8	0.5	0.1
Ainaro	Total	9,664	4.2	7.3	9.4	11.7	13.1	13.1	12.9	10	6.9	4.4	5.9	0.9	0.1
	Male	8,254	4.1	5.6	7.9	11.3	13.1	13.6	13.8	10.8	7.4	4.7	6.6	0.9	0.1
	Female	1,410	4.5	17.5	18.2	14.3	13.5	10	7.7	5.1	3.7	2.6	2.2	0.6	0.1
Aileu	Total	6,965	5.5	7.3	7.5	9.9	10.8	14	12.5	10.7	7.7	5.3	7.4	1.3	0.1
	Male	6,107	5.6	6	6.3	9.4	10.7	14.4	13	11.5	8.2	5.6	7.9	1.3	0.1
	Female	858	4.7	16.4	16.1	13.9	11.1	11.3	9	5	4.3	3.1	4.1	1	0
Baucau	Total	21,255	8.1	12.1	12.5	12.8	13	11.9	10.1	7.4	4.7	3.2	3.7	0.5	0
	Male	18,094	8	9.5	11.3	12.7	13.4	12.6	10.9	8.2	5.2	3.5	4.1	0.5	0
	Female	3,161	8.9	26.5	19.2	13.2	10.4	8.1	5.3	3.1	1.9	1.4	1.6	0.4	0
Bobonaro	Total	16,883	4	8.8	12.8	15.1	15	13.7	11.4	8	4.6	2.9	3.3	0.3	0.1
	Male	14,180	4	6.1	11.2	14.7	15.4	14.7	12.6	8.9	5.1	3.2	3.6	0.4	0.1
	Female	2,703	3.9	22.8	21.2	17.2	12.6	8.3	5.5	3.6	2	1.2	1.6	0.1	0
CovaLima	Total	11,105	2.8	8	13.2	16.8	16.3	15.2	11.2	7.1	4.1	2.3	2.9	0.1	0
	Male	9,665	2.8	6.1	12.2	16.5	16.6	16.1	12	7.7	4.4	2.4	3.1	0.1	0
	Female	1,440	3	21	20.1	18.6	14.3	8.7	6.4	3.1	1.7	1.5	1.5	0.1	0
Dili	Total	35,224	4	6.4	8.9	11.3	12.3	12.3	11.1	9.4	6.9	5.6	9.5	2	0.2
	Male	30,751	3.9	5.5	8.2	11	12.2	12.6	11.5	9.9	7.3	5.8	9.9	2.1	0.2
	Female	4,473	4.5	12.2	14	13.6	13.1	10.8	8.5	6.6	4.6	3.8	6.6	1.4	0.3
Ermera	Total	19,280	5	6.9	9.4	11.3	12.4	12.8	12.1	10.5	7.7	4.7	6.4	0.8	0
	Male	16,433	4.7	5	8	10.8	12.2	13.3	12.8	11.5	8.4	5.1	7.1	0.9	0
	Female	2,847	6.5	18.2	17.4	14	13.5	9.9	7.8	4.8	3.5	1.8	2.4	0.1	0

Continued

Percentage households by sex of head and size

	Total Households	1 Person	2 Persons	3 Persons	4 Persons	5 Persons	6 Persons	7 Persons	8 Persons	9 Persons	10 Persons	11-14 Persons	15-19 Persons	20 + Persons
Liquiça	Total	4	7	9.8	11.4	12.8	13.6	11.9	9.6	7.4	4.9	6.5	1	0.1
	Male	4	5.3	8.6	10.9	13	14.1	12.4	10.3	7.9	5.3	7	1	0.1
	Female	3.9	19	18.5	15	11.4	10.3	8.1	4.2	4	2	3.1	0.5	0.1
Lautem	Total	8.9	11.9	11.1	11.3	12	12.3	11.5	8.8	6	2.9	3.1	0.3	0
	Male	8.6	8.9	9.3	10.6	12.3	13.4	12.9	10.1	6.8	3.3	3.5	0.3	0
	Female	10.3	23.7	18.3	13.8	10.4	8	6.1	3.6	2.6	1.2	1.7	0.3	0
Manufahi	Total	2.7	6.8	9.5	12	12.8	14.3	13.1	10	7	4.1	6.8	0.9	0.1
	Male	2.5	5.7	8.5	11.5	12.7	14.7	13.8	10.6	7.4	4.3	7.2	0.9	0.1
	Female	4.3	15.4	16.8	16.2	13	10.7	8.2	5.3	3.5	2.5	3.4	0.6	0
Manatuto	Total	4.2	8.6	10.3	12.4	13.1	13.1	11	8.8	6.6	4.2	6.3	1.3	0.2
	Male	3.9	6.8	9.3	12.1	13.3	13.7	11.6	9.4	7.2	4.5	6.6	1.3	0.2
	Female	5.9	20.7	17.5	14.5	11.9	9	6.5	4.6	2.3	2.2	3.6	1.2	0
Oecusse	Total	7	12.2	14.8	17	16.8	13.9	9.3	5	2.3	1	0.7	0	0
	Male	7.1	9.5	13.6	17	17.8	14.9	10.2	5.4	2.5	1	0.8	0	0
	Female	6.4	27.8	21.3	17	11	7.6	3.7	2.9	1.1	0.5	0.5	0.1	0
Viqueque	Total	7.1	12.6	12.5	13.2	13.4	13.4	10.8	7.3	4.4	2.3	2.6	0.2	0
	Male	7	10.3	11.4	12.9	13.9	14.4	11.8	7.9	4.8	2.5	2.8	0.3	0
	Female	7.7	26.8	19.7	15.1	10.6	7.3	4.7	3.4	2	1.1	1.5	0.1	0.1

Table . Household Tenure and age of head of household by district

	All										Owned by other entities				
	Own by individual or family					Owned by other entities									
	Total	15-24	25-34	35-44	45+	Total	15-24	25-34	35-44	45+	Total	15-24	25-34	35-44	45+
Total	184651	6729	33012	50805	94105	176639	6055	30476	48075	92033	8012	674	2536	2730	2072
Urban	47723	2510	12076	14991	18146	41565	1982	9985	12870	16728	6158	528	2091	2121	1418
Rural	136928	4219	20936	35814	75959	135074	4073	20491	35205	75305	1854	146	445	609	654
Ainaro	9664	279	1548	2718	5119	9521	271	1514	2671	5065	143	8	34	47	54
Aileu	6965	207	859	1835	4064	6729	190	782	1758	3999	236	17	77	77	65
Baucau	21255	583	2614	5449	12609	20808	556	2496	5281	12475	447	27	118	168	134
Bobonaro	16883	540	2594	4088	9661	16412	497	2471	3948	9496	471	43	123	140	165
Covalima	11105	431	1970	2977	5727	10894	409	1917	2900	5668	211	22	53	77	59
Dili	35224	1630	9603	11186	12805	30823	1296	8030	9687	11810	4401	334	1573	1499	995
Ermera	19280	705	3079	5566	9930	18905	668	2990	5444	9803	375	37	89	122	127
Liquiça	10351	414	1368	2555	6014	9979	362	1260	2432	5925	372	52	108	123	89
Lautem	11447	361	1707	3258	6121	11209	347	1654	3173	6035	238	14	53	85	86
Manufahi	7856	207	1229	2114	4306	7618	190	1166	2028	4234	238	17	63	86	72
Manatuto	6924	209	978	1740	3997	6753	199	941	1680	3933	171	10	37	60	64
Oecusse	13890	642	2938	3585	6725	13518	567	2805	3471	6675	372	75	133	114	50
Viqueque	13807	521	2525	3734	7027	13470	503	2450	3602	6915	337	18	75	132	112

Percentage households by sex and marital status of head

		Total Households	Single/Never married	Married	Widowed	Divorced	Separated
Timor-Leste	Total	184,651	5.8	82.6	10.5	0.6	0.4
	Male	158,389	5.2	90.8	3.6	0.2	0.2
	Female	26,262	9	39.9	47	2.4	1.7
Ainaro	Total	9,664	4.7	82.5	11.8	0.7	0.3
	Male	8,254	4.4	90.6	4.6	0.3	0.2
	Female	1,410	6.6	38.4	51.2	2.7	1.1
Aileu	Total	6,965	5.3	81.5	12.5	0.4	0.3
	Male	6,107	4.8	89.5	5.3	0.2	0.2
	Female	858	8.3	31.7	57.3	1.5	1.2
Baucau	Total	21,255	4.5	81.3	13.1	0.7	0.5
	Male	18,094	3.6	90.7	5.1	0.3	0.2
	Female	3,161	8.3	38.1	49.7	2.3	1.7
Bobonaro	Total	16,883	4.7	82.1	12.1	0.8	0.4
	Male	14,180	3.9	92.2	3.5	0.3	0.1
	Female	2,703	8.2	35	52.2	3.1	1.5
Covalima	Total	11,105	3.1	85.9	10	0.7	0.3
	Male	9,665	2.6	94.5	2.5	0.3	0.1
	Female	1,440	6.3	33.1	55.5	3.2	1.9
Dili	Total	35,224	9.7	83.5	6	0.5	0.3
	Male	30,751	8.9	89	1.8	0.2	0.1
	Female	4,473	14.7	47	34.1	2.8	1.3
Ermera	Total	19,280	5.2	80.9	13	0.5	0.4
	Male	16,433	5	89.5	5.1	0.3	0.2
	Female	2,847	6.5	34.8	55	1.9	1.7
Liquiça	Total	10,351	6.7	82.5	9.9	0.5	0.4
	Male	9,054	5.9	89.6	4	0.2	0.2
	Female	1,297	11.7	36.9	47.8	1.9	1.7
Lautem	Total	11,447	5.5	79.4	13.7	0.8	0.7
	Male	9,120	5.2	90.6	3.7	0.3	0.2
	Female	2,327	6.3	44.9	44.3	2.2	2.3
Manufahi	Total	7,856	3.8	86.6	8.9	0.4	0.3
	Male	6,913	3.5	92.3	3.8	0.2	0.2
	Female	943	6.2	47.1	44.1	1.6	1
Manatuto	Total	6,924	5.4	85.5	8.3	0.4	0.4
	Male	6,061	4.5	92.1	3	0.1	0.2
	Female	863	11.2	43.5	42	2	1.4
Oecusse	Total	13,890	4.7	84.3	10.1	0.5	0.4
	Male	11,869	4.2	93.5	2	0.2	0.1
	Female	2,021	6.9	43.7	46	1.9	1.5
Viqueque	Total	13,807	5.8	81.5	11.3	0.7	0.7
	Male	11,888	4.8	90.3	4.4	0.3	0.3
	Female	1,919	10.8	37.4	46	3.1	2.8

Percentage households by sex and education of head

	Total Households	Pre-Primary	Primary	Pre-Secondary	Secondary	Polytechnic/ Diploma	University	Non Formal	N.A.
Timor-Leste	Total	1	19.4	7.9	14.8	1.3	4.9	1.3	49.5
	Male	1	21	8.4	16	1.4	5.3	1.3	45.5
	Female	0.8	10.9	5	8.5	0.7	2.6	1.3	70.3
Ainaro	Total	1.1	13.1	8.3	11.8	0.8	1.5	1.3	62.2
	Male	1.2	14.5	9	12.6	0.8	1.6	1.3	59.1
	Female	1.1	5.5	4.6	7.3	0.7	1.1	1.2	78.5
Aileu	Total	0.6	23.7	7.8	10.6	0.8	2.2	1.4	52.9
	Male	0.7	25.7	8.3	11.3	0.9	2.4	1.3	49.3
	Female	0.5	11.3	4.4	5.9	0.1	0.8	2	74.9
Baucau	Total	1.4	20	6.4	12.3	1.6	2.3	1.8	54.3
	Male	1.5	22.3	6.8	13.4	1.7	2.6	1.8	49.9
	Female	0.9	9.4	4.5	7	0.9	1.1	1.9	74.3
Bobonaro	Total	0.7	18.9	6	10.4	1	1.7	1.4	59.9
	Male	0.7	20.9	6.6	11.5	1.2	1.9	1.4	55.8
	Female	0.6	9.7	3.6	5	0.4	0.6	1.1	78.9
Covalima	Total	0.8	18.6	9.8	17.1	1.1	1.6	0.9	50.2
	Male	0.9	19.9	10.3	18.5	1.1	1.7	0.9	46.6
	Female	0.4	10.8	6.7	8.4	0.5	0.5	0.8	72
Dili	Total	1.7	20.7	9.6	28	2.3	17.3	1.4	19.1
	Male	1.7	21.1	9.9	29.1	2.4	18.1	1.4	16.3
	Female	1.9	17.7	7.9	20.7	1.8	11.8	1.3	36.9
Ermera	Total	0.6	15.9	5.7	7.9	0.6	1.3	1.1	67
	Male	0.7	17.7	6.2	8.6	0.6	1.4	1.2	63.7
	Female	0.2	6.5	2.7	4.3	0.5	0.6	0.6	84.7

Continued

Percentage households by sex and education of head

	Total Households	Pre-Primary	Primary	Pre-Secondary	Secondary	Polytechnic/ Diploma	University	Non Formal	N.A.
Liquiça	Total	10,351	22.7	8.5	10.3	0.6	2	0.9	54.4
	Male	9,054	0.6	24.6	9	0.6	2.2	0.9	51.1
	Female	1,297	0.3	10.7	5.5	0.2	0.6	1.1	75.8
Lautem	Total	11,447	0.5	21.1	10	1.2	2.2	1.5	48.3
	Male	9,120	0.5	24.5	11.5	1.5	2.8	1.4	40
	Female	2,327	0.5	10.6	5.4	0.3	0.5	1.7	73.6
Manufahi	Total	7,856	0.6	22.5	10.8	0.8	2.3	1.6	48.3
	Male	6,913	0.6	23.9	11.5	0.8	2.3	1.6	45.7
	Female	943	0.5	12.7	6.5	0.8	1.9	1.4	66.2
Manatuto	Total	6,924	0.7	23.2	7.9	0.9	1.6	1.2	52.1
	Male	6,061	0.7	24.4	8.3	1	1.7	1.2	49.6
	Female	863	1	15.1	5.3	0.6	0.9	1.3	68.2
Oecusse	Total	13,890	0.7	17.2	4.6	0.9	2.4	1.2	63.8
	Male	11,869	0.6	18.7	5	1.1	2.7	1.2	60.4
	Female	2,021	0.7	10.5	2.9	0.5	1	1.5	78.7
Viqueque	Total	13,807	0.8	18.4	8.7	1.4	2.4	0.9	54
	Male	11,888	0.8	20.4	9.6	1.5	2.7	1	49.1
	Female	1,919	0.6	8.5	4.4	0.6	0.8	0.5	78.3

Percentage households by sex and employment status of head													
	Total Households	Employee	Employer	Own-account worker	Contributing family worker	Member of a producers' cooperative	Sought work	Did not seek work	Student	Household work	Pensioner retired elderly person	Ill disabled	Other
Timor-Leste	Total	184,651	26	0.7	46.4	14.1	0.2	1.6	1.1	1.3	3.9	1.2	0.4
	Male	158,389	28.6	0.8	47.4	14.3	0.2	1.8	1.1	1.2	1	1	0.4
	Female	26,262	12.4	0.4	40.8	12.8	0.2	0.7	1.4	2.2	19.3	2	0.7
Ainaro	Total	9,664	11.6	0.6	60.3	13.4	0.3	2	1.8	0.9	2.9	1.4	0.3
	Male	8,254	12.6	0.6	61.8	14.1	0.3	2.2	1.7	0.7	0.6	1.3	0.2
	Female	1,410	6.1	0.1	51.8	9.7	0.1	1	2.1	1.7	15	2	0.7
Aileu	Total	6,965	13.5	0.8	74.2	5.1	0.4	0.2	0.2	1.1	1.7	1.6	0.1
	Male	6,107	14.8	0.8	75.2	5.1	0.3	0.2	0.2	0.9	0.2	1.3	0.1
	Female	858	4.9	0.7	67.8	5.2	0.7	0.3	0.2	2.8	10.7	3.4	0.2
Baucau	Total	21,255	22.9	0.6	40.2	21.9	0.2	1.2	1.2	0.6	4.7	1.8	0.4
	Male	18,094	25.3	0.6	41.9	22.7	0.2	1.3	1	0.5	1.7	1.5	0.3
	Female	3,161	12.2	0.3	32.4	18.3	0.1	0.6	2.3	1.4	18.7	3.1	0.7
Bobonaro	Total	16,883	25.1	0.6	57.4	7.1	0.1	0.4	0.8	0.8	3.3	0.8	0.4
	Male	14,180	27.3	0.7	59	7.3	0.1	0.5	0.7	0.6	0.4	0.7	0.4
	Female	2,703	15	0.3	50.2	6.1	0.2	0.2	1	2	16.9	1.1	0.4
Cova Lima	Total	11,105	17.5	0.8	55	20.4	0.2	0.6	0.3	0.8	2.1	0.3	0.1
	Male	9,665	18.9	0.8	56.1	20.7	0.2	0.6	0.2	0.6	0.1	0.3	0.1
	Female	1,440	9.5	0.4	47.9	18.1	0.1	0.4	0.6	1.9	14	0.8	0.2
Dili	Total	35,224	58.6	1.3	17.5	1.8	0.2	5.4	2.3	2.8	5.9	0.8	1
	Male	30,751	62.8	1.4	17.3	1.7	0.2	5.9	2.4	2.6	2.2	0.7	0.9
	Female	4,473	31	1.1	18.3	2.4	0.1	2.4	1.8	4.3	30.7	1.2	1.7

Continued

Percentage households by sex and employment status of head

	Total Households	Employee	Employer	Own-account worker	Contributing family worker	Member of a producers' cooperative	Sought work	Did not seek work	Student	Household work	Pensioner retired elderly person	Ill disabled	Other
Ermera	Total	14.2	0.6	64.2	10.8	0.4	0.7	1	0.9	3.2	2.2	1.5	0.2
	Male	15.4	0.7	66	11.1	0.4	0.7	0.9	0.8	0.6	1.8	1.3	0.2
	Female	7.5	0.3	54.8	9.2	0.2	0.4	1.6	1.3	17.3	4.5	2.7	0.2
Liquiça	Total	23.2	0.6	56.9	7.4	0.2	0.7	0.9	1.5	3.7	3	1.7	0.1
	Male	25.4	0.7	58.1	7.5	0.2	0.8	0.8	1.1	1.1	2.4	1.7	0.1
	Female	9.3	0.1	49.1	6.3	0.1	0.2	0.9	3.7	20.6	6.8	2.4	0.4
Lautem	Total	19.4	0.6	32.4	31.6	0.3	0.6	1.3	1.4	4.3	5.9	1.8	0.4
	Male	23.3	0.6	32.4	33.4	0.3	0.7	1.1	1.4	0.9	3.9	1.5	0.4
	Female	7.4	0.4	32.5	26.1	0.2	0.5	1.7	1.5	14.9	11.9	2.6	0.5
Manufahi	Total	16.2	0.4	70.4	4.9	0.6	0.3	0.6	0.5	3.1	1.9	0.9	0.1
	Male	17.2	0.4	72.7	4.7	0.6	0.3	0.6	0.4	0.4	1.6	0.9	0.2
	Female	9.3	0.3	54.5	6.8	0.5	0	0.5	1.3	21.9	3.6	1.2	0
Manatuto	Total	23.5	0.4	55.2	11.4	0.1	0.5	0.5	0.5	3.8	2.7	1.1	0.2
	Male	25.2	0.4	56.9	12	0.1	0.6	0.5	0.3	0.7	2.2	1.1	0.1
	Female	13.1	0.2	44.8	7.5	0.1	0.3	0.7	1.7	23.6	6.2	1.2	0.5
Oecusse	Total	15	0.7	41.5	33.1	0.2	0.8	0.5	1.7	4	1.6	0.5	0.3
	Male	17.3	0.8	42.1	34.9	0.2	0.9	0.5	1.5	0.2	0.9	0.4	0.2
	Female	4.8	0.4	38.6	25	0.2	0.6	0.8	2.3	20.7	4.8	1.2	0.7
Viqueque	Total	13.6	0.5	50.9	24.3	0.2	0.7	0.7	0.9	2.6	3.7	1.7	0.3
	Male	15.5	0.5	51.7	25.4	0.2	0.8	0.6	0.8	0.4	2.5	1.4	0.2
	Female	4.3	0.2	46.8	19.1	0.2	0.3	0.9	1.6	13.5	9.6	2.9	0.7

Households by tenure and main construction material for external walls and district										
	Total	Concrete/Brick	Wood	Bamboo	Corrugated iron/ Zinc	Clay	Palm Trunk/ Bebak	Rock	Other	
Timor- Leste	Owned	48356	7426	57076	5640	2559	51471	2413	1698	
	Owned other	6367	342	141	299	15	642	100	106	
Urban	Owned	25811	1771	2053	1637	381	9197	383	332	
	Owned other	5077	258	33	222	9	433	54	72	
Rural	Owned	22545	5655	55023	4003	2178	42274	2030	1366	
	Owned other	1290	84	108	77	6	209	46	34	
Ainaro	Owned	1397	511	4157	433	317	2455	99	152	
	Owned other	95	7	9	7	2	16	1	6	
Aileu	Owned	1263	170	3922	464	433	346	61	70	
	Owned other	201	6	4	10	1	5	7	2	
Baucau	Owned	3647	706	10225	390	569	4703	458	110	
	Owned other	361	17	15	16	1	25	1	11	
Bobonaro	Owned	3769	403	1818	745	330	8516	727	104	
	Owned other	290	20	9	26	4	89	24	9	
Covalima	Owned	1531	625	860	199	219	7370	39	51	
	Owned other	161	9	3	3	0	33	1	1	
Dili	Owned	20608	1346	1428	1327	78	5454	228	354	
	Owned other	3652	207	20	157	4	262	34	65	

Continued

Households by tenure and main construction material for external walls and district

		Total	Concrete/Brick	Wood	Bamboo	Corrugated iron/ Zinc	Clay	Palm Trunk/ Bebak	Rock	Other
Ermera	Owned	18905	4518	787	11642	523	130	791	401	113
	Owned other	375	293	18	26	19	0	10	6	3
Liquiça	Owned	9979	2441	185	4234	183	53	2764	85	34
	Owned other	372	299	9	9	9	1	42	3	0
Lautem	Owned	11209	2503	443	5137	617	51	2146	67	245
	Owned other	238	189	8	4	23	0	10	2	2
Manufahi	Owned	7618	997	117	3180	85	30	3123	59	27
	Owned other	238	160	8	9	10	1	38	10	2
Manatuto	Owned	6753	1600	182	2642	305	20	1936	48	20
	Owned other	171	142	6	9	4	0	6	3	1
Oecusse	Owned	13518	2550	1630	2320	243	283	6193	52	247
	Owned other	372	285	9	3	7	0	66	1	1
Viqueque	Owned	13470	1532	321	5511	126	46	5674	89	171
	Owned other	337	239	18	21	8	1	40	7	3

Household by main construction material for roof and district

	Total Households	Palm leaves/tali tahan /thatch/ grass	Corrugated iron/Zinc	Tiles	Asbestos	Concrete	Bamboo	Other
Timor-Leste	184,652	56,028	122,779	906	1,969	487	2,110	373
Urban	47,723	4,105	42,728	228	298	166	116	82
Rural	136,929	51,923	80,051	678	1,671	321	1,994	291
Ainaro	9,664	4,122	5,213	49	92	20	142	26
Aileu	6,965	1,474	5,345	43	28	14	55	6
Baucau	21,255	10,125	10,733	77	106	35	156	23
Bobonaro	16,883	4,881	11,773	48	59	63	51	8
Covalima	11,105	4,408	6,456	40	109	29	54	9
Dili	35,224	2,095	32,456	162	252	121	35	103
Ermera	19,280	4,073	14,333	160	88	67	513	46
Liquiça	10,351	1,499	8,186	109	76	18	445	18
Lautem	11,447	2,232	8,897	92	120	34	28	44
Manufahi	7,856	2,813	4,176	34	441	19	340	33
Manatuto	6,925	2,567	3,678	27	403	30	209	11
Oecusse	13,890	9,044	4,715	25	45	17	18	26
Viqueque	13,807	6,695	6,818	40	150	20	64	20

	Total Households	Concrete	Tile	Wood	Soil/Clay	Bamboo	Other
Timor-Leste	184,652	48,571	13,215	2,528	108,340	5,228	6,770
Urban	47,723	24,918	9,484	311	10,055	373	2,582
Rural	136,929	23,653	3,731	2,217	98,285	4,855	4,188
Ainaro	9,664	1,067	351	189	7,532	221	304
Aileu	6,965	1,387	206	52	5,200	107	13
Baucau	21,255	2,922	797	259	16,355	360	562
Bobonaro	16,883	5,179	745	312	10,090	161	396
Covalima	11,105	3,887	327	692	4,964	927	308
Dili	35,224	18,432	7,898	170	6,322	156	2,246
Ermera	19,280	3,000	693	289	14,479	341	478
Liquiça	10,351	2,725	348	50	6,768	98	362
Lautem	11,447	2,799	437	117	6,672	629	793
Manufahi	7,856	1,949	244	65	4,354	1,051	193
Manatuto	6,925	1,599	262	106	3,627	818	513
Oecusse	13,890	2,280	457	103	10,679	74	297
Viqueque	13,807	1,345	450	124	11,298	285	305

	Total Households	Concrete/Brick	Wood	Bamboo	Corrugated iron/Zinc	Clay	Palm Trunk/Bebak	Rock	Other
Timor-Leste	184,652	54,724	7,768	57,217	5,939	2,574	52,113	2,513	1,804
Urban	47,723	30,888	2,029	2,086	1,859	390	9,630	437	404
Rural	136,929	23,836	5,739	55,131	4,080	2,184	42,483	2,076	1,400
Ainaro	9,664	1,492	518	4,166	440	319	2,471	100	158
Aileu	6,965	1,464	176	3,926	474	434	351	68	72
Baucau	21,255	4,008	723	10,240	406	570	4,728	459	121
Bobonaro	16,883	4,059	423	1,827	771	334	8,605	751	113
CovaLima	11,105	1,692	634	863	202	219	7,403	40	52
Dili	35,224	24,260	1,553	1,448	1,484	82	5,716	262	419
Ermera	19,280	4,811	805	11,668	542	130	801	407	116
Liquiça	10,351	2,740	194	4,243	192	54	2,806	88	34
Lautem	11,447	2,692	451	5,141	640	51	2,156	69	247
Manufahi	7,856	1,157	125	3,189	95	31	3,161	69	29
Manatuto	6,925	1,743	188	2,651	309	20	1,942	51	21
Oecusse	13,890	2,835	1,639	2,323	250	283	6,259	53	248
Viqueque	13,807	1,771	339	5,532	134	47	5,714	96	174

Households by main Source of drinking water by District

	Total Households	Pipe or pump indoors	Pipe or pump outdoors	Public tap	Tube well/borehole	Protected Well or Protected Spring	Rainwater collection	Bottle water	Not Protected well or Spring	Water vendors/tank	River lake or stream	Other
Timor-Leste	184,652	9,968	30,341	42,667	11,471	25,301	842	1,115	35,883	1,597	23,731	1,736
Urban	47,723	7,712	12,116	11,291	7,543	4,003	27	773	1,805	1,190	891	372
Rural	136,929	2,256	18,225	31,376	3,928	21,298	815	342	34,078	407	22,840	1,364
Ainaro	9,664	254	1,205	1,689	48	1,513	169	20	3,125	42	1,573	26
Aileu	6,965	142	1,010	2,072	26	414	24	7	1,279	6	1,974	11
Baucau	21,255	386	1,431	2,991	213	3,276	145	26	8,183	1,189	3,382	33
Bobonaro	16,883	590	3,054	5,615	236	2,972	25	46	3,049	46	1,033	217
Covalima	11,105	285	876	3,024	1,150	2,184	10	42	2,628	11	880	15
Dili	35,224	5,755	8,239	9,376	7,500	1,561	276	761	448	143	807	358
Ermera	19,280	654	2,960	4,674	150	1,551	43	33	2,683	55	5,577	900
Liquiça	10,351	379	3,805	2,234	276	622	10	13	1,442	17	1,462	91
Lautem	11,447	197	1,646	2,883	353	3,122	16	28	2,816	9	360	17
Manufahi	7,856	366	967	1,355	121	1,789	30	15	2,185	10	1,001	17
Manatuto	6,925	235	1,168	2,147	495	743	19	15	612	16	1,459	16
Oecusse	13,890	245	2,499	1,824	259	3,885	7	63	4,651	40	399	18
Viqueque	13,807	480	1,481	2,783	644	1,669	68	46	2,782	13	3,824	17

Population by main source of water													
	Total	Pipe or pump indoors	Pipe or pump outdoors	Public tap	Tube well/borehole	Protected Well or Protected Spring	Rainwater collection	Bottle water	Not Protected well or Spring	Water vendors/vendors tank	River lake or stream	Other	N/A
Timor-Leste	1,053,982	63,982	184,807	246,385	70,523	134,925	4,125	6,041	186,658	10,600	131,172	10,525	4,239
Ainaro	58,148	1,773	7,896	10,192	253	8,868	956	103	18,334	223	9,335	183	32
Ainaro	14,588	1,184	4,192	2,753	111	2,041	16	24	2,223	37	1,967	32	8
Hatu-Builico	11,933	159	1,445	3,243	35	2,763	62	-	2,968	12	1,235	7	4
Maubisse	21,995	411	1,831	2,881	61	2,175	427	45	8,155	84	5,761	144	20
Hatu-Udo	9,632	19	428	1,315	46	1,889	451	34	4,988	90	372	-	-
Aileu	43,665	925	6,402	13,304	157	2,303	138	41	7,954	46	12,298	76	21
Aileu Vila	20,189	561	4,088	6,498	111	1,236	62	19	3,081	-	4,457	66	10
Liquidoe	6,251	52	484	1,961	14	651	33	-	749	16	2,285	-	6
Remexio	10,055	174	1,066	2,108	17	325	18	6	3,900	8	2,428	-	5
Laulara	7,170	138	764	2,737	15	91	25	16	224	22	3,128	10	-
Baucau	110,160	2,492	8,311	16,905	1,098	16,377	619	128	38,317	8,198	16,658	194	863
Baucau	45,163	2,124	5,441	11,762	188	6,006	147	44	6,340	8,125	4,617	111	258
Laga	14,268	186	781	166	280	2,292	44	47	4,589	16	5,760	63	44
Quelical	16,747	55	498	1,844	218	3,435	78	7	9,672	3	816	-	121
Baguia	9,465	23	101	814	12	1,970	271	-	6,125	18	81	15	35

Continued

Population by main source of water

	Total	Pipe or pump indoors	Pipe or pump outdoors	Public tap	Tube well/borehole	Protected Well or Protected Spring	Rainwater collection	Bottle water	Not Protected well or Spring	Water vendors/tank	River lake or stream	Other	N/A
Vemase	8,975	21	217	555	301	703	18	23	3,506	14	3,602	-	15
Venilale	15,542	83	1,273	1,764	99	1,971	61	7	8,085	22	1,782	5	390
Bobonaro	91,200	3,619	16,364	29,374	1,426	16,218	129	212	16,479	233	5,389	1,274	483
Maliana	24,614	2,362	6,023	7,766	1,016	5,623	22	50	1,105	63	359	19	206
Callaco	9,957	208	2,996	1,892	58	1,156	27	24	2,744	39	609	53	151
Balibo	14,777	90	1,130	5,368	81	2,120	-	57	4,299	20	1,443	122	47
Atabae	10,974	28	1,001	2,328	111	2,682	2	5	3,207	96	1,113	401	-
Lolotoe	7,129	85	1,062	4,052	21	846	-	15	814	-	160	-	74
Bobonaro	23,749	846	4,152	7,968	139	3,791	78	61	4,310	15	1,705	679	5
Covailima	59,047	1,752	5,094	15,736	5,977	11,437	48	216	13,772	76	4,559	92	288
Fatululic	1,894	16	-	1,652	6	35	-	2	93	-	84	6	-
Fatumean	3,332	17	338	1,677	-	333	2	-	720	25	214	6	-
Forohem	4,092	57	271	2,613	-	89	-	-	745	-	317	-	-
Maukatar	6,291	36	491	2,105	114	1,462	-	28	676	6	1,335	38	-
Suai	24,776	1,551	3,604	3,500	2,918	5,493	37	113	5,574	40	1,667	14	265
Tilomar	7,043	46	210	1,350	2,603	1,426	5	10	1,210	-	172	7	4
Zumalai	11,619	29	180	2,839	336	2,599	4	63	4,754	5	770	21	19

Continued

Population by main source of water													
	Total	Pipe or pump indoors	Pipe or pump outdoors	Public tap	Tube well/borehole	Protected Well or Protected Spring	Rainwater collection	Bottle water	Not Protected well or Spring	Water vendors/ tank	River lake or stream	Other	N/A
Dili	228,564	36,901	55,061	60,586	48,872	9,613	1,328	4,254	2,656	868	5,296	2,201	928
Vera Cruz	32,826	6,666	6,628	6,753	9,638	1,288	9	517	202	85	748	144	148
Nain Feto	25,563	4,473	6,560	4,751	5,650	776	8	1,803	404	134	314	474	216
Metinaro	4,727	359	575	1,448	1,247	247	12	-	216	-	623	-	-
Atauro	8,602	371	2,639	2,375	1	1,195	1,201	15	156	100	436	51	62
Dom Aleixo	103,669	18,604	21,040	27,052	28,118	3,696	62	1,601	805	216	977	1,151	347
Cristo Rei	53,177	6,428	17,619	18,207	4,218	2,411	36	318	873	333	2,198	381	155
Ermera	116,937	4,281	18,801	28,667	946	9,136	213	203	16,006	364	32,668	5,497	155
Railaco	10,279	321	2,272	2,678	114	1,064	7	17	988	-	2,772	46	-
Ermera	33,528	3,146	8,175	8,941	470	2,876	10	23	2,706	86	4,412	2,528	155
Letefoho	20,867	237	2,970	3,251	59	2,126	80	49	5,325	120	6,642	8	-
Atsabe	17,264	316	2,692	5,176	81	2,377	71	16	2,428	108	3,969	30	-
Hatolia	34,999	261	2,692	8,621	222	693	45	98	4,559	50	14,873	2,885	-
Liquica	63,172	2,513	24,366	13,053	1,804	3,718	40	76	8,696	90	8,172	555	89
Bazartete	23,840	472	8,519	5,261	1,371	1,489	23	49	4,168	54	2,310	116	8
Liquica	20,866	1,023	9,259	3,594	135	1,365	-	17	1,869	6	3,351	232	15
Maubara	18,466	1,018	6,588	4,198	298	864	17	10	2,659	30	2,511	207	66

Continued

Population by main source of water													
	Total	Pipe or pump indoors	Pipe or pump outdoors	Public tap	Tube well/borehole	Protected Well or Protected Spring	Rainwater collection	Bottle water	Not Protected well or Spring	Water vendors/tank	River lake or stream	Other	N/A
Lautem	59,776	1,228	8,883	14,555	1,975	16,509	71	180	14,072	61	1,773	90	379
Lospalos	29,227	1,058	4,163	5,541	1,195	8,882	36	151	7,326	32	397	67	379
Lautem	14,147	54	3,001	4,056	380	3,889	20	18	1,892	13	801	23	-
Iliomar	7,201	84	644	2,046	98	2,531	12	-	1,760	-	26	-	-
Luro	5,367	32	1,070	914	263	717	-	11	1,935	10	415	-	-
Tutuala	3,834	-	5	1,998	39	490	3	-	1,159	6	134	-	-
Manufahi	48,614	2,567	6,393	8,285	737	10,809	171	73	13,085	92	6,044	111	247
Same	27,540	2,385	5,420	5,848	540	5,476	140	42	4,961	21	2,608	80	19
Alas	7,179	45	107	597	75	3,163	21	3	2,694	-	463	-	11
Fatuberliu	6,902	21	18	417	122	1,399	-	22	3,284	22	1,385	18	194
Turiscail	6,993	116	848	1,423	-	771	10	6	2,146	49	1,588	13	23
Manatuto	41,709	1,593	6,969	13,302	2,803	4,121	93	87	3,656	101	8,435	76	473
Manatuto	11,533	1,111	2,331	3,663	863	1,552	-	47	412	-	1,432	18	104
Laleia	3,089	63	1,305	1,189	8	256	-	5	23	-	216	3	21
Laclo	7,616	144	1,172	2,921	481	260	5	21	1,106	46	1,450	-	10

Continued

Population by main source of water

	Total	Pipe or pump indoors	Pipe or pump outdoors	Public tap	Tube well/borehole	Protected Well or Protected Spring	Rainwater collection	Bottle water	Not Protected well or Spring	Water vendors/vendors tank	River lake or stream	Other	N/A
Soibada	3,030	133	401	1,403	38	174	3	-	78	-	720	5	75
Barique/Natarbora	4,766	18	217	537	1,364	1,349	11	14	521	2	447	45	241
Laclubar	11,675	124	1,543	3,589	49	530	74	-	1,516	53	4,170	5	22
Oecussi	63,514	1,327	11,915	8,271	1,225	17,817	38	260	20,453	189	1,690	93	236
Pante Macasar	34,715	988	6,238	4,948	846	8,303	2	150	12,318	51	662	82	127
Nitibe	11,366	108	2,585	690	9	5,219	6	20	1,989	94	599	9	38
Oesilo	9,861	198	2,055	1,596	366	3,172	30	90	1,995	44	291	-	24
Passabe	7,572	33	1,037	1,037	4	1,123	-	-	4,151	-	138	2	47
Viqueque	69,476	3,011	8,352	14,155	3,250	7,999	281	208	13,178	59	18,855	83	45
Uatucarbau	7,212	16	303	926	252	1,228	27	19	2,867	13	1,561	-	-
Ossu	15,153	273	2,152	7,044	60	2,303	227	37	1,954	17	1,055	24	7
Watulari	16,972	174	1,368	4,472	1,312	1,928	27	33	3,749	13	3,832	32	32
Viqueque	24,293	2,382	4,226	1,342	1,461	2,341	-	107	3,700	16	8,698	16	4
Lacluta	5,846	166	303	371	165	199	-	12	908	-	3,709	11	2

Households by mode of human waste disposal									
Urban Rural/District/Sub district	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/latrine	No facility or bush	Other
Timor Leste	184,652	32,522	20,261	19,651	3,740	15,434	39,422	52,439	1,183
Urban	47,723	17,589	9,413	11,605	1,558	2,213	1,762	3,268	315
Rural	136,929	14,933	10,848	8,046	2,182	13,221	37,660	49,171	868
Ainaro	9,664	460	551	593	184	457	5,033	2,329	57
Ainaro	2,292	219	275	349	114	249	339	735	12
Hatu-Builico	2,058	72	92	32	35	53	1,663	106	5
Maubisse	3,604	131	148	147	26	120	2,865	128	39
Hatu-Udo	1,710	38	36	65	9	35	166	1,360	1
Aileu	6,965	1,088	1,127	458	249	1,223	2,221	586	13
Aileu Vila	3,274	642	872	195	176	658	517	205	9
Liquidoe	1,104	69	167	139	29	137	533	28	2
Remexio	1,497	197	33	83	41	278	665	198	2
Laulara	1,090	180	55	41	3	150	506	155	0
Baucau	21,255	1,875	2,024	652	159	1,025	12,330	3,038	152
Baucau	7,438	1,297	1,218	328	63	464	2,461	1,565	42
Laga	2,868	131	104	76	10	92	1,776	591	88
Quelical	4,028	67	29	26	6	17	3,832	44	7
Baguia	2,109	14	36	32	6	216	1,780	22	3
Vemase	1,674	162	324	30	36	29	406	684	3
Venilale	3,138	204	313	160	38	207	2,075	132	9

Continued

Households by mode of human waste disposal										
Urban Rural/District/Sub district	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/latrine	No facility or bush	Other	
Bobonaro	16,883	2,473	1,826	1,208	191	342	2,992	7,764	87	
Maliana	4,320	1,406	774	732	65	77	191	1,026	49	
Caillaco	2,015	81	218	40	17	44	657	957	1	
Balibo	2,784	429	153	31	9	47	88	2,026	1	
Atabae	1,826	88	159	186	17	107	11	1,238	20	
Lolotoe	1,434	172	139	20	4	26	257	808	8	
Bobonaro	4,504	297	383	199	79	41	1,788	1,709	8	
Covalima	11,105	1,868	1,318	910	150	138	476	6,212	33	
Fatululic	422	12	18	1	0	1	4	376	10	
Fatumean	615	26	24	193	13	6	1	352	0	
Forohem	873	102	16	22	4	4	10	715	0	
Maukatar	1,174	118	124	54	16	9	10	843	0	
Suai	4,359	1,136	960	421	22	43	192	1,570	15	
Tilomar	1,355	359	46	158	45	48	31	665	3	
Zumalai	2,307	115	130	61	50	27	228	1,691	5	
Dili	35,224	13,508	5,870	10,360	1,478	1,756	927	1,099	226	
Vera Cruz	5,318	2,467	978	1,120	359	228	83	70	13	
Nain Feto	4,015	815	819	1,976	142	96	102	44	21	
Metinaro	872	210	108	182	66	67	36	201	2	
Atauro	1,618	280	102	175	12	477	415	104	53	
Dom Aleixo	15,896	5,655	2,738	5,887	686	520	86	238	86	
Cristo Rei	7,505	4,081	1,125	1,020	213	368	205	442	51	

Continued

Households by mode of human waste disposal									
Urban Rural/District/Sub district	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/latrine	No facility or bush	Other
Emera	19,280	2,749	1,540	1,206	419	4,003	4,914	4,226	223
Railaco	1,632	517	136	125	84	419	124	181	46
Emera	5,232	1,348	635	470	93	1,317	688	567	114
Letefoho	3,704	313	155	209	74	879	1,222	847	5
Atsabe	3,056	139	251	88	65	57	2,000	453	3
Hatolia	5,656	432	363	314	103	1,331	880	2,178	55
Liquiça	10,351	1,591	1,766	498	112	2,393	1,136	2,824	31
Bazartete	3,701	554	585	303	66	936	262	986	9
Liquiça	3,351	468	733	119	16	880	641	485	9
Maubara	3,299	569	448	76	30	577	233	1,353	13
Lautem	11,447	1,495	1,405	1,215	125	351	2,443	4,369	44
Lospalos	5,247	879	986	641	55	136	751	1,775	24
Lautem	2,932	314	281	291	34	110	501	1,389	12
Iliomar	1,429	194	64	81	18	64	568	437	3
Luro	1,108	87	36	69	16	38	580	280	2
Tutuala	731	21	38	133	2	3	43	488	3
Manufahi	7,856	1,086	370	435	231	1,160	1,763	2,770	41
Same	4,548	640	314	207	141	635	860	1,734	17
Alas	1,179	243	10	137	27	237	16	504	5
Fatuberíu	1,110	148	17	71	59	209	148	454	4
Turiscái	1,019	55	29	20	4	79	739	78	15

Continued

Households by mode of human waste disposal									
Urban Rural/District/Sub district	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/latrine	No facility or bush	Other
Manatuto	6,925	1,796	812	739	171	441	969	1,932	65
Manatuto	1,823	871	314	75	9	16	56	466	16
Laleia	752	234	97	245	6	10	16	135	9
Laolo	1,273	286	127	38	11	61	204	527	19
Soibada	444	54	110	72	15	48	70	74	1
Barique/Natarbora	843	165	24	96	86	97	24	339	12
Laclubar	1,790	186	140	213	44	209	599	391	8
Oecussi	13,890	1,549	1,017	469	65	1,395	1,351	7,902	142
Pante Macasar	7,290	1,088	726	424	42	461	351	4,128	70
Nitibe	2,609	88	48	11	5	66	45	2,342	4
Oesilo	2,224	341	62	25	3	533	485	763	12
Passabe	1,767	32	181	9	15	335	470	669	56
Viqueque	13,807	984	635	908	206	750	2,867	7,388	69
Uatucarbau	1,499	22	81	157	25	114	460	636	4
Ossu	3,134	260	148	202	43	82	866	1,517	16
Watulari	3,465	137	89	160	41	164	1,307	1,559	8
Viqueque	4,616	516	277	333	81	340	196	2,839	34
Lacluta	1,093	49	40	56	16	50	38	837	7

Population by mode of waste disposal										
	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/latrine	No facility or bush	Other	N/A
Timor-Leste	1053982	204533	127106	123247	23071	92845	206699	265844	6398	4239
Ainaro	58148	3097	3654	3912	1244	3052	29864	12974	319	32
Ainaro	14588	1564	1942	2330	745	1665	2059	4208	67	8
Hatu-Builico	11933	470	593	174	234	324	9526	578	30	4
Maubisse	21995	824	899	1005	198	807	17325	697	220	20
Hatu-Udo	9632	239	220	403	67	256	954	7491	2	0
Aileu	43665	7435	7309	2875	1367	7762	13533	3292	71	21
Aileu Vila	20189	4247	5610	1230	939	4036	2998	1078	41	10
Liquidoe	6251	448	1063	813	111	719	2939	144	8	6
Remexio	10055	1427	239	555	297	1973	4333	1204	22	5
Laulara	7170	1313	397	277	20	1034	3263	866	0	0
Baucau	110160	12063	13121	3913	952	5836	56919	15639	854	863
Baucau	45163	8795	8445	2145	399	3006	13441	8410	264	258
Laga	14268	764	653	428	66	534	8517	2764	498	44
Quelical	16747	362	136	161	29	57	15727	129	25	121
Baguia	9465	64	175	183	31	1073	7800	89	15	35
Vemase	8975	956	1981	147	230	156	1927	3555	8	15
Venilale	15542	1122	1731	849	197	1010	9507	692	44	390
Bobonaro	91200	14499	10377	7199	1043	2048	15535	39563	453	483
Maliana	24614	8414	4546	4321	361	415	940	5163	248	206
Callaco	9957	415	1231	224	93	236	3140	4462	5	151
Balibo	14777	2490	861	159	54	287	481	10393	5	47
Atabae	10974	567	972	1224	112	782	79	7114	124	0
Lolotoe	7129	866	729	109	25	130	1227	3938	31	74
Bobonaro	23749	1747	2038	1162	398	198	9668	8493	40	5

Continued

Population by mode of waste disposal										
	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/latrine	No facility or bush	Other	N/A
Covallima	59047	10667	7704	5301	818	762	2483	30886	138	288
Fatululic	1894	58	86	3	0	5	14	1695	33	0
Fatumean	3332	127	128	1149	72	31	5	1820	0	0
Foroheh	4092	601	86	105	19	16	36	3229	0	0
Maukatar	6291	638	743	295	79	57	62	4417	0	0
Suai	24776	6689	5604	2507	133	239	1078	8200	61	265
Tilomar	7043	1936	249	891	268	272	155	3257	11	4
Zumalai	11619	618	808	351	247	142	1133	8268	33	19
Dili	228564	88796	38325	67181	9666	10639	5392	6377	1260	928
Vera Cruz	32826	15092	6022	6803	2253	1460	488	475	85	148
Nain Feto	25563	5203	5226	12510	881	590	637	202	98	216
Metinaro	4727	1165	614	1016	353	376	164	1019	20	0
Atauro	8602	1496	628	1045	68	2407	2120	484	292	62
Dom Aleixo	103669	36809	17775	38643	4517	3251	557	1334	436	347
Cristo Rei	53177	29031	8060	7164	1594	2555	1426	2863	329	155
Ermera	116937	17500	10212	7897	2715	25379	28102	23706	1271	155
Railaco	10279	3314	887	845	558	2729	746	939	261	0
Ermera	33528	8934	4374	3256	613	8242	4118	3215	621	155
Letefoho	20867	1696	881	1288	433	5332	6767	4448	22	0
Atsabe	17264	819	1558	502	361	338	11222	2441	23	0
Hatolia	34999	2737	2512	2006	750	8738	5249	12663	344	0
Liquica	63172	10088	11770	3284	647	14441	6795	15859	199	89
Bazartete	23840	3783	4157	2074	398	6014	1558	5793	55	8
Liquica	20866	2939	4949	753	85	5289	3893	2886	57	15
Maubara	18466	3366	2664	457	164	3138	1344	7180	87	66

Continued

Population by mode of waste disposal										
	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/latrine	No facility or bush	Other	N/A
Lautem	59776	8567	8011	6830	671	1958	11960	21174	226	379
Lospalos	29227	5269	5836	3762	324	846	3845	8818	148	379
Lautem	14147	1630	1425	1507	158	535	2315	6539	38	0
Iliomar	7201	1123	363	447	84	351	2743	2081	9	0
Luro	5367	415	179	367	93	198	2842	1259	14	0
Tutuala	3834	130	208	747	12	28	215	2477	17	0
Manufahi	48614	7077	2452	2870	1444	7593	10875	15847	209	247
Same	27540	4223	2089	1399	875	4197	4786	9864	88	19
Alas	7179	1446	51	837	148	1528	119	3000	39	11
Fatuberliu	6902	979	82	460	378	1335	935	2522	17	194
Turiscail	6993	429	230	174	43	533	5035	461	65	23
Manatuto	41709	11133	5068	4378	1090	2830	5802	10557	378	473
Manatuto	11533	5837	1959	466	43	79	295	2679	71	104
Laleia	3089	971	384	1054	18	39	68	501	33	21
Laclo	7616	1754	820	248	70	429	1203	2937	145	10
Soibada	3030	349	785	526	145	340	423	383	4	75
Barique/Natarbora	4766	933	109	520	457	544	103	1782	77	241

Continued

Population by mode of waste disposal										
	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/latrine	No facility or bush	Other	N/A
Laclubar	11675	1289	1011	1564	357	1399	3710	2275	48	22
Oecussi	63514	7781	5257	2553	330	6379	5855	34470	653	236
Pante Macassar	34715	5633	3959	2335	211	2272	1586	18248	344	127
Nitibe	11366	365	222	65	19	300	204	10140	13	38
Oesilo	9861	1644	286	115	16	2317	2127	3277	55	24
Passabe	7572	139	790	38	84	1490	1938	2805	241	47
Viqueque	69476	5830	3846	5054	1084	4166	13584	35500	367	45
Uatucarbau	7212	112	431	790	130	603	2138	2989	19	0
Ossu	15153	1440	852	1054	200	436	3987	7086	91	7
Watulari	16972	745	543	857	218	871	6300	7369	37	32
Viqueque	24293	3231	1705	2051	440	1967	990	13722	183	4
Lacluta	5846	302	315	302	96	289	169	4334	37	2

Households by toilet facility and incidence of sharing										
Urban Rural/District/ Sub district	Sharing	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/ latrine	Not Share facility or bush	Other
Timor-Leste	Sharing	46,487	8,750	4,883	5,268	1,206	3,932	7,036	14,979	433
	Not Sharing	138,165	23,772	15,378	14,383	2,534	11,502	32,386	37,460	750
Urban	Sharing	12,678	4,571	2,075	3,058	555	720	432	1,107	160
	Not Sharing	35,045	13,018	7,338	8,547	1,003	1,493	1,330	2,161	155
Rural	Yes Share Share	33,809	4,179	2,808	2,210	651	3,212	6,604	13,872	273
	Not Share Share	103,120	10,754	8,040	5,836	1,531	10,009	31,056	35,299	595
Ainaro	Sharing	1,953	129	138	116	58	111	1,051	329	21
	Not Sharing	7,711	331	413	477	126	346	3,982	2,000	36
Ainaro	Sharing	543	59	73	57	37	66	113	131	7
	Not Sharing	1,749	160	202	292	77	183	226	604	5
Hatu-Builico	Sharing	677	24	26	10	12	18	533	53	1
	Not Sharing	1,381	48	66	22	23	35	1,130	53	4
Maubisse	Sharing	529	29	26	40	7	20	377	17	13
	Not Sharing	3,075	102	122	107	19	100	2,488	111	26
Hatu-Udo	Sharing	204	17	13	9	2	7	28	128	0
	Not Sharing	1,506	21	23	56	7	28	138	1,232	1
Aileu	Sharing	1,287	197	283	134	52	192	362	64	3
	Not Sharing	5,678	891	844	324	197	1,031	1,859	522	10
Aileu Vila	Sharing	544	93	205	58	23	86	58	19	2
	Not Sharing	2,730	549	667	137	153	572	459	186	7
Liquidoe	Sharing	370	19	52	43	16	57	180	2	1
	Not Sharing	734	50	115	96	13	80	353	26	1
Remexio	Sharing	176	40	9	18	13	31	51	14	0
	Not Sharing	1,321	157	24	65	28	247	614	184	2
Laulara	Sharing	197	45	17	15	0	18	73	29	0
	Not Sharing	893	135	38	26	3	132	433	126	0

Continued

Households by toilet facility and incidence of sharing										
Urban Rural/District/ Sub district	Sharing	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/ latrine	Not Share facility or bush	Other
Baucau	Sharing	2,800	342	313	178	41	143	1,185	538	60
	Not Sharing	18,455	1,533	1,711	474	118	882	11,145	2,500	92
Baucau	Sharing	1,230	181	145	105	12	76	375	326	10
	Not Sharing	6,208	1,116	1,073	223	51	388	2,086	1,239	32
Laga	Sharing	334	37	20	29	3	25	111	62	47
	Not Sharing	2,534	94	84	47	7	67	1,665	529	41
Quelicaí	Sharing	177	8	6	5	0	0	150	7	1
	Not Sharing	3,851	59	23	21	6	17	3,682	37	6
Baguia	Sharing	84	3	7	2	0	12	59	1	0
	Not Sharing	2,025	11	29	30	6	204	1,721	21	3
Vemase	Sharing	303	50	67	8	14	7	57	99	1
	Not Sharing	1,371	112	257	22	22	22	349	585	2
Venilale	Sharing	672	63	68	29	12	23	433	43	1
	Not Sharing	2,466	141	245	131	26	184	1,642	89	8
Bobonaro	Sharing	3,767	587	449	274	54	81	325	1,955	42
	Not Sharing	13,116	1,886	1,377	934	137	261	2,667	5,809	45
Maliana	Sharing	1,061	336	162	163	36	34	43	266	21
	Not Sharing	3,259	1,070	612	569	29	43	148	760	28
Cailaco	Sharing	207	30	70	8	3	14	5	77	0
	Not Sharing	1,808	51	148	32	14	30	652	880	1
Ballibo	Sharing	731	95	53	11	1	9	6	556	0
	Not Sharing	2,053	334	100	20	8	38	82	1,470	1
Atabae	Sharing	180	20	51	38	3	16	3	39	10
	Not Sharing	1,646	68	108	148	14	91	8	1,199	10

Continued

Households by toilet facility and incidence of sharing

Urban Rural/District/ Sub district	Sharing	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/ latrine	Not Share facility or bush	Other
Lolotoe	Sharing	705	28	37	4	0	3	29	597	7
	Not Sharing	729	144	102	16	4	23	228	211	1
Bobonaro	Sharing	883	78	76	50	11	5	239	420	4
	Not Sharing	3,621	219	307	149	68	36	1,549	1,289	4
Covalima	Sharing	3,157	584	385	228	37	39	70	1,805	9
	Not Sharing	7,948	1,284	933	682	113	99	406	4,407	24
Fatululic	Sharing	222	6	11	1	0	0	1	202	1
	Not Sharing	200	6	7	0	0	1	3	174	9
Fatumean	Sharing	235	17	9	45	5	4	0	155	0
	Not Sharing	380	9	15	148	8	2	1	197	0
Forohem	Sharing	557	27	8	9	2	1	10	500	0
	Not Sharing	316	75	8	13	2	3	0	215	0
Maukatar	Sharing	223	64	20	27	5	3	2	102	0
	Not Sharing	951	54	104	27	11	6	8	741	0
Suai	Sharing	1,463	395	304	113	10	18	42	573	8
	Not Sharing	2,896	741	656	308	12	25	150	997	7
Tilomar	Sharing	176	59	7	21	4	4	1	80	0
	Not Sharing	1,179	300	39	137	41	44	30	585	3
Zumalai	Sharing	281	16	26	12	11	9	14	193	0
	Not Sharing	2,026	99	104	49	39	18	214	1,498	5

Continued

Households by toilet facility and incidence of sharing										
Urban Rural/District/ Sub district	Sharing	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/ pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/ latrine	Not Share facility or bush	Other
Dili	Sharing	9,144	3,574	1,222	2,736	502	456	188	352	114
	Not Sharing	26,080	9,934	4,648	7,624	976	1,300	739	747	112
Vera Cruz	Sharing	1,600	763	218	400	117	61	13	23	5
	Not Sharing	3,718	1,704	760	720	242	167	70	47	8
Nain Feto	Sharing	1,318	226	185	690	85	42	50	22	18
	Not Sharing	2,697	589	634	1,286	57	54	52	22	3
Metinaro	Sharing	161	41	17	57	13	8	2	23	0
	Not Sharing	711	169	91	125	53	59	34	178	2
Atauro	Sharing	341	112	18	33	2	84	54	22	16
	Not Sharing	1,277	168	84	142	10	393	361	82	37
Dom Aleixo	Sharing	3,658	1,338	517	1,283	229	152	25	61	53
	Not Sharing	12,238	4,317	2,221	4,604	457	368	61	177	33
Cristo Rei	Sharing	2,066	1,094	267	273	56	109	44	201	22
	Not Sharing	5,439	2,987	858	747	157	259	161	241	29
Ermera	Sharing	5,444	891	523	293	142	1,239	1,091	1,195	70
	Not Sharing	13,836	1,858	1,017	913	277	2,764	3,823	3,031	153
Railaco	Sharing	416	94	35	30	8	151	48	44	6
	Not Sharing	1,216	423	101	95	76	268	76	137	40
Ermera	Sharing	1,749	479	207	100	50	407	213	244	49
	Not Sharing	3,483	869	428	370	43	910	475	323	65
Letefoho	Sharing	921	84	81	58	19	207	161	310	1
	Not Sharing	2,783	229	74	151	55	672	1,061	537	4
Atsabe	Sharing	649	47	89	20	27	15	400	50	1
	Not Sharing	2,407	92	162	68	38	42	1,600	403	2
Hatolia	Sharing	1,709	187	111	85	38	459	269	547	13
	Not Sharing	3,947	245	252	229	65	872	611	1,631	42

Continued

Households by toilet facility and incidence of sharing

Urban Rural/District/ Sub district	Sharing	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/ latrine	Not Share facility or bush	Other
Liquiça	Sharing	2,019	282	273	106	23	422	195	708	10
	Not Sharing	8,332	1,309	1,493	392	89	1,971	941	2,116	21
Bazartete	Sharing	887	102	105	75	15	190	37	358	5
	Not Sharing	2,814	452	480	228	51	746	225	628	4
Liquiça	Sharing	690	91	107	22	4	194	131	139	2
	Not Sharing	2,661	377	626	97	12	686	510	346	7
Maubara	Sharing	442	89	61	9	4	38	27	211	3
	Not Sharing	2,857	480	387	67	26	539	206	1,142	10
Lautem	Sharing	2,864	430	415	393	40	103	576	891	16
	Not Sharing	8,583	1,065	990	822	85	248	1,867	3,478	28
Lospalos	Sharing	1,495	258	274	209	7	28	273	433	13
	Not Sharing	3,752	621	712	432	48	108	478	1,342	11
Lautem	Sharing	702	114	90	83	14	37	39	322	3
	Not Sharing	2,230	200	191	208	20	73	462	1,067	9
Iliomar	Sharing	319	28	28	14	5	16	111	117	0
	Not Sharing	1,110	166	36	67	13	48	457	320	3
Luro	Sharing	262	21	12	30	13	20	152	14	0
	Not Sharing	846	66	24	39	3	18	428	266	2
Tutuála	Sharing	86	9	11	57	1	2	1	5	0
	Not Sharing	645	12	27	76	1	1	42	483	3

Continued

Households by toilet facility and incidence of sharing

Urban Rural/District/ Sub district	Sharing	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/ pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/ latrine	Not Share facility or bush	Other
Manufahi	Sharing	2,513	248	105	140	91	312	411	1,183	23
	Not Sharing	5,343	838	265	295	140	848	1,352	1,587	18
Same	Sharing	1,563	153	81	55	69	207	212	776	10
	Not Sharing	2,985	487	233	152	72	428	648	958	7
Alas	Sharing	290	37	2	36	3	36	7	167	2
	Not Sharing	889	206	8	101	24	201	9	337	3
Fatuherliu	Sharing	396	38	7	40	19	59	34	198	1
	Not Sharing	714	110	10	31	40	150	114	256	3
Turiscai	Sharing	264	20	15	9	0	10	158	42	10
	Not Sharing	755	35	14	11	4	69	581	36	5
Manatuto	Sharing	2,182	698	262	286	57	121	336	406	16
	Not Sharing	4,743	1,098	550	453	114	320	633	1,526	49
Manatuto	Sharing	581	336	119	26	3	5	13	72	7
	Not Sharing	1,242	535	195	49	6	11	43	394	9
Laleia	Sharing	367	136	26	145	4	4	1	51	0
	Not Sharing	385	98	71	100	2	6	15	84	9
Laalo	Sharing	406	111	38	10	3	24	69	146	5
	Not Sharing	867	175	89	28	8	37	135	381	14
Soibada	Sharing	101	8	38	14	2	14	9	16	0
	Not Sharing	343	46	72	58	13	34	61	58	1
Barique/Natarbora	Sharing	194	56	7	26	31	19	4	49	2
	Not Sharing	649	109	17	70	55	78	20	290	10
Laclubar	Sharing	533	51	34	65	14	55	240	72	2
	Not Sharing	1,257	135	106	148	30	154	359	319	6

Continued

Households by toilet facility and incidence of sharing

Urban Rural/District/ Sub district	Sharing	Total	Pit latrine with slab	Ventilated improved pit latrine (VIP)	Pour flush to septic tank/pit	Pour flush to elsewhere/DK	Pit latrine without slab/open pit	Hanging toilet/ latrine	Not Share facility or bush	Other
Oecussi	Sharing	5,181	538	314	156	29	458	468	3,188	30
	Not Sharing	8,709	1,011	703	313	36	937	883	4,714	112
Pante Macassar	Sharing	2,521	370	203	140	19	173	117	1,492	7
	Not Sharing	4,769	718	523	284	23	288	234	2,636	63
Nitibe	Sharing	1,435	30	11	6	2	17	40	1,326	3
	Not Sharing	1,174	58	37	5	3	49	5	1,016	1
Oesilo	Sharing	728	118	8	5	1	127	185	282	2
	Not Sharing	1,496	223	54	20	2	406	300	481	10
Passabe	Sharing	497	20	92	5	7	141	126	88	18
	Not Sharing	1,270	12	89	4	8	194	344	581	38
Viqueque	Sharing	4,176	250	201	228	80	255	778	2,365	19
	Not Sharing	9,631	734	434	680	126	495	2,089	5,023	50
Uatucarbau	Sharing	501	13	27	43	12	37	83	285	1
	Not Sharing	998	9	54	114	13	77	377	351	3
Ossu	Sharing	472	59	51	42	14	19	78	206	3
	Not Sharing	2,662	201	97	160	29	63	788	1,311	13
Watulari	Sharing	1,555	23	19	27	8	49	548	878	3
	Not Sharing	1,910	114	70	133	33	115	759	681	5
Viqueque	Sharing	1,221	143	94	90	35	118	62	669	10
	Not Sharing	3,395	373	183	243	46	222	134	2,170	24
Lacluta	Sharing	427	12	10	26	11	32	7	327	2
	Not Sharing	666	37	30	30	5	18	31	510	5

Households by quality ranking and score								
	Households	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5	Mean Quality Score	Median Quality Score
Total	184651	1877	32433	50715	80481	19145	23.2	24.5
Urban	47723	1754	25336	15746	4381	506	17.7	17.2
Rural	136928	123	7097	34969	76100	18639	25.2	26.1
Total	184651	1877	32433	50715	80481	19145	23.2	24.5
Ainaro	9664	9	492	1790	5992	1381	25.9	26.5
Aileu	6965	4	693	2227	3729	312	23.8	24.9
Baucau	21255	79	1238	3960	12982	2996	25.7	26.5
Bobonaro	16883	19	1591	5517	7673	2083	24	25
Covalima	11105	11	746	3392	5480	1476	24.6	25.5
Dili	35224	1675	20643	10526	2293	87	17	16.6
Ermera	19280	19	1615	6422	10009	1215	23.9	24.9
Liquiça	10351	15	1188	3932	4886	330	23	24
Lautem	11447	10	997	3861	5771	808	23.8	24.9
Manufahi	7856	9	682	1932	4224	1009	24.9	25.9
Manatuto	6924	8	1039	2340	2926	611	23.3	24.2
Oecusse	13890	8	706	2452	7141	3583	26.2	27.2
Viqueque	13807	11	803	2364	7375	3254	26	27

Annex 2

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