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Labour Force Surveys 2010 and 2013

Main Trends Based on Harmonized Data





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Timor-Leste Labour Force Surveys 2010 and 2013 Main Trends Based on Harmonized Data

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Contents

1. Introduction	1
2. Main labour force trends	3
3. Branches of economic activity	5
4. Occupations	7
5. Status in employment	9
6. Informal employment	10
7. Men and women	11
8. Youth	14
9. Education and participation in training programmes	16
10. Regions	19
11. Summary	23
Annexes	
A. Harmonization of data for differences in main definitions	25
B. Harmonization of data for differences in industry and occupation codes	29



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1. Introduction

Since the country became independent, Timor-Leste has carried out two national labour force surveys (LFS) in 2010 and 2013 for measuring employment, unemployment and related labour market characteristics. Both surveys were conducted by the General Directorate of Statistics (GDS), Ministry of Finance, in close collaboration with the Secretariat of State for Vocational Training and Employment (SEPFOPE) with technical assistance from the International Labour Office (ILO).

LFS 2010 was designed with a sample size of 4,665 households drawn with fixed probabilities from a sample of 300 census enumeration areas originally selected and updated for the Timor-Leste Survey of Living Standards 2007. The questionnaire was designed on the basis of the ILO Model LFS questionnaire (version A), adapted to the national circumstances of Timor-Leste. The questionnaire comprised a household roster for listing and recording the demographic characteristics of household members and an individual questionnaire with 82 questions administered to all household members 10 years old and over for measuring employment and unemployment and their characteristics. The fieldwork was carried out from August 2009 to June 2010 with monthly allocations in different districts.

LFS 2013 covered a sample of 7,080 households drawn from 472 sample enumeration areas. The sample enumeration areas were freshly listed and updated before selecting a fixed number of 15 sample households for interviewing within each sample enumeration area. The questionnaire was essentially the same as that of LFS 2010 except for a few modifications regarding maternity and paternity leave and the effectiveness of participation in training programmes. The fieldwork was conducted during a four-month period from September to December 2013.

Although the questionnaires of the two surveys were essentially identical, the data were processed differently. The LFS 2010 data were processed in line with the international standards prevailing at the time¹, while the LFS 2013 data were processed according to the new international standards adopted in 2013.² The basic difference between the two sets of standards is the statistical treatment of subsistence foodstuff producers.

In LFS 2013, subsistence foodstuff producers are excluded from the count of the employed. They include all those who performed any activity to produce foodstuff for

1 ILO, "Resolution concerning statistics of the economically active population, employment, unemployment and underemployment," adopted by the 13th International Conference of Labour Statisticians (ICLS), Geneva, 1982

2 ILO, Resolution concerning statistics of work, employment and labour underutilization," adopted by the 19th International Conference of Labour Statisticians, ILO, Geneva, 2013.



own final use, i.e., where the intended output is mainly for final use (in the form of capital formation, or final consumption by household members, or by family members living in other households). A part or surplus may nevertheless be sold or bartered.

In LFS 2010, only those who produced wholly for their own consumption were excluded from the count of the employed. Subsistence foodstuff producers who produced mostly for own consumption and some for sale or barter were included among the employed in LFS 2010. As own-use agriculture production is widespread in Timor-Leste the differential treatment of subsistence foodstuff producers has great impact on the resulting employment and unemployment statistics.

Another major difference between the two surveys is the coding of industries³ and occupations.⁴ Both coding schemes were based on the existing international standard classifications, but the range of codes and assignment of codes differ substantially. Annexes A and B show the full range of industry and occupation codes and the frequencies under LFS 2010 and LFS 2013 separately.

It can be noted, for example, that some 10,699 persons are classified as “buyers and traders” under code 3323 of the occupational classification in LFS 2010, while there were no persons classified under this code in LFS 2013. Similarly, there are some 15,307 persons classified in “wholesale and retail trade” under 4600 of the industrial classification in LFS 2010, and no one under the same code in LFS 2013.

The present note attempts to adjust for these differences and analyze the evolution of the main labour force indicators. A brief description of the adjustment procedure is given as footnote of Tables 1-5. Fuller descriptions are provided in the Annexes: Annex A on reprocessing of the LFS 2010 data in terms of the concepts and definitions of LFS 2013, and Annex B on harmonization of coding of branches of economic activity and occupations.

The next section (Section 2) presents the adjusted data on the main labour force indicators, employment, unemployment and other components of labour underutilization. The subsequent sections give the adjusted data by branch of economic activity (Section 3), occupation (Section 4), status in employment (Section 5), informal employment (Section 6), differences between men and women (Section 7), youth population 15 to 29 years old (Section 8), education and participation in training programmes (Section 9) and variations among regions (Section 10). The final section (Section 11) highlights the main results.

3 UN, International Standard Industrial Classification of All Economic Activities, ISIC Rev. 4, <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=27>.

4 ILO, International Standard Classification of Occupations, ISCO-08, <http://www.ilo.org/public/english/bureau/stat/isco/isco08/>.

2. Main labour force trends

The main labour force indicators of Timor-Leste are presented in Table 1 below. The first column shows the published results of LFS 2010 based on the concepts and definitions of the 13th ICLS. The next column gives the reprocessed results based on the concepts and definitions of the 19th ICLS comparable to the published results of LFS 2013 shown in the third column. Finally, the last column indicates the upward or downward change of the indicators, established on the basis of tests of significance with 95% level of confidence.

The reprocessed data show that labour force activity significantly increased during the period from 2010 to 2013. On the other hand, the number of subsistence foodstuff producers decreased from 206,300 to 178,900. Overall, the labour force increased from 150,900 to 213,200, number of employed increased from 139,100 to 189,300, and unemployment also increased from 11,800 to 23,400.

Labour underutilization in the form of time-related underemployment and potential labour force (including discouraged jobseekers) also increased indicating that the growth of employment was not sufficient to absorb the growing population and possibly the movement from subsistence foodstuff production to labour force activity.



1. Main labour force indicators: Timor-Leste LFS 2010 – 2013

('000)	LFS 2010	LFS 2010	LFS 2013	Change
	13 th ICLS	19 th ICLS	19 th ICLS	
Working age population (15+ yrs)	627.0	627.0	696.2	↑
Labour force	262.0	150.9	213.2	↑
Employed	252.0	139.1	189.8	↑
(of which time-related underemployed)	10.0	0.1	1.4	↑
Unemployed	9.0	11.8	23.4	↑
Outside the labour force	366.0	477.5	483.0	↑
(of which potential labour force)	-	3.4	7.7	↑
Subsistence foodstuff producers	-	206.3	178.9	↓
%				
Labour force participation rate	41.7	24.0	30.6	↑
Employment-population ratio	40.2	22.1	27.3	↑
LU1. Unemployment rate	3.6	7.8	11.0	↑
LU2. Combined rate of unemployment and time-related underemployment	7.4	7.9	11.7	↑
LU3. Combined rate of under-employment and potential labour force	-	9.8	14.1	↑
LU4. Composite measure of labour underutilization	-	9.9	14.7	↑

Note: For comparison with the LFS 2013 data and the measurement of change, the LFS 2010 data have been reprocessed in line with the concepts and definitions of the 19th International Conference of Labour Statisticians (19th ICLS, 2013). In particular, subsistence foodstuff producers reporting to have been producing mostly for own consumption and some for sale or barter (code 2 in question 4 of LFS 2010) have been reclassified as outside the labour force unless they were engaged in paid employment in a secondary activity or were available and seeking employment during the specified reference period.

The same picture emerges when the data are analyzed in relative terms as shown in the bottom panel of Table 2. Labour force participation and the employment-to-population ratio both increased by 6.6 and 5.2 percentage points, respectively, while at the same time the unemployment rate and the other rates of labour underutilization also increased. The unemployment rate (LU1) increased from 7.8% to 11.0% and the broader composite measure of labour underutilization (LU4) from 9.9% to 14.7%.

It is instructive to note that the published unemployment rate for LFS 2010 was 3.6%, but reprocessing the data according to the new international standards had the effect of doubling the unemployment rate to 7.8%, though still below the LFS 2013 rate of 11.0%.

3. Branches of economic activity

Comparable employment data by branch of economic activity are presented in Table 2. The data refer to the activity of the establishment in which the employed person worked at his or her main job during the reference period of the survey. Both the adjusted and the unadjusted data are shown.

The LFS 2010 data have been adjusted to conform to the LFS 2013 definition of employment in line with the new international standards (19th ICLS). The industry breakdown of the LFS 2013 data has been adjusted to be more comparable to the coding procedure adopted in LFS 2010. The essential elements of the adjustment process of the industry coding are described at the bottom of the table.

The results show that agriculture employment increased from 36,500 to 48,600 employed persons. In relative terms, however, the share of agriculture in total employment has slightly decreased, 26.3% in 2010 to 25.6% in 2013. It should be mentioned that in the LFS 2013 report the share of employment in agriculture was 40% and the revised percentage of 25.6% is based on adjustments made to the LFS 2013 data.

Employment in manufacturing increased both in absolute and relative terms. The same pattern is also observed across employment in transport and communication, wholesale and retail trade, financial and insurance activities, professional, scientific and technical activities, and administrative and support service activities.

Employment in construction industry also increased, moving from about 12,000 in 2010 to 14,000 employed persons in 2013, but its share in total employment decreased from 8.9% in 2010 to 7.5% in 2013. Employment in accommodation and food service activities increased as well, but its share in total employment remained almost constant (1.6% of total employment in 2010 and 1.3% in 2013).

A similar pattern of increased number but almost constant ratios can be observed for employment in public administration and defense (4.7% of total employment in 2010 and 4.0% in 2013), and human health and social work activities (2.1% of total employment in 2010 and 1.9% in 2013).



2. Employment by branch of economic activity in main job: Timor-Leste LFS 2010 – 2013

ISIC Rev 4	Unadjusted		Adjusted	
	LFS 2010	LFS 2013	LFS 2010	LFS 2013
Total	252000	189787	139144	189787
1 Agriculture, forestry and fishing	128000	76901	36537	48607
2 Mining and quarrying	1000	1181	1153	1181
3 Manufacturing	8000	10440	5946	8509
4 Electricity, gas, steam, air conditioning supply	-	309	399	309
5 Water supply, sewerage waste management	-	528	61	528
6 Construction	13000	11496	12352	14284
7 Wholesale and retail trade, repair of motor	44000	15912	27570	44123
8 Transportation and storage	8000	11797	7938	11619
9 Accommodation and food service activities	2000	1255	2160	2414
10 Information and communication	2000	3890	2045	3858
11 Financial and insurance activities	-	3724	150	3724
12 Real estate activities	-	40	0	40
13 Professional, scientific, technical activities	2000	4011	1568	3541
14 Administrative and support service activities	6000	13744	6089	12751
15 Public administration and defense	7000	7551	6498	7536
16 Education	16000	12183	15063	12183
17 Human health and social work activities	3000	3698	2917	3698
18 Arts, entertainment and recreation	6000	490	5169	490
19 Other service activities	2000	6302	1938	6158
20 Activities of households as employers	1000	941	2096	941
21 Activities of extraterritorial organizations and	-	7	222	7
Other, not classified	3000	3386	1273	3285

Notes: The LFS 2013 data by branch of economic activity have been adjusted to make them comparable to the coding system of LFS 2010. Three areas are particularly affected:

Agriculture and Trade: Half of field crop and vegetable growers (8722/2=4361) and mixed crop growers (47701/2=23851) in agriculture are reclassified in Wholesale and retail trade. This involves in total 28211 workers deducted from Agriculture and added to Wholesale and retail trade activities. Agriculture activities, particularly crop growing, combine production and sales. The data show that the distinction is not reflected in the LFS 2013 coding scheme.

Construction: Construction-related occupations in manufacturing except carpenters and joiners (429) are reclassified in Construction industry. Also all construction-related occupations in Professional, scientific and technical activities (470) and in Administrative and support service activities (387) are reclassified in the construction industry. This resulted to an additional 2788 workers (=2360-429+470+387) in Construction industry.

Accommodation and food service activities: Accommodation & food service - related occupations in Agriculture, forestry and fishing (83), Transportation and storage (178), Information and communication (32), Administrative and support service activities (606), Public administration and defense (15), Other service activities (144) and Other, not classified (101) are reclassified in Accommodation and food service activities. This resulted in an additional 1159 workers in Accommodation and food service activities.

In general, the adjusted data show employment increases in all the sectors except education, arts, entertainment and recreation, activities of households as employer, and activities of extraterritorial organizations and bodies. However, the decrease of employment in these sectors should be treated with caution and examined more carefully as it may be due to uncorrected coding errors.

Since 2013, administrative records suggest that there has been a significant increase in the recruitment of public servants which does not seem to be captured by the LFS data, possibly owing to coding errors.



4. Occupations

The principal adjustment of the occupation data concerned the reclassification of about 48'000 persons originally coded as “skilled agricultural, forestry, fishery workers” in LFS 2013 into “elementary occupations.” Table 3 shows the original unadjusted and the adjusted distributions of the employed population by occupation in main job for LFS 2010 and LFS 2013. The adjusted data show an increased number of workers in all occupational categories except “professionals” and “armed forces occupations.”

The observed decrease in professionals may be due to the differences in the coding procedure of professionals (ISCO-08 code 2) and technicians and associate professionals (ISCO-08 code 3). Also, the observed decrease in “armed forces occupations” should also be subject to further examination, particularly with regard to the treatment of personnel serving in barracks in the coverage of LFS 2010 and LFS 2013.



3. Employment by occupation in main job: Timor-Leste, LFS 2010-2013

ISCO-08	Unadjusted		Adjusted	
	LFS 2010	LFS 2013	LFS 2010	LFS 2013
Total employed population	252000	189787	139144	189787
1 Managers	7000	11182	6608	11182
2 Professionals	22000	18814	21652	18814
3 Technicians and associate professionals	19000	8595	3922	8595
4 Clerical support workers	2000	6164	1756	6164
5 Service and sales workers	20000	33476	27546	33476
6 Skilled agricultural, forestry, fishery workers	39000	73857	17301	25148
7 Craft and related workers	14000	18109	11557	18109
8 Plant and machine operators, assemblers	8000	10547	7739	10547
9 Elementary occupations	118000	6012	39345	54721
10 Armed forces occupations	-	139	1037	139
Not classified, blank	3000	2892	681	2892

Notes: (1) Workers in buyers and traders (occupations ISCO-08 code 3323) in LFS 2010 are re-classified as service and sales workers (ISCO-08 Major group 5). It resulted in the deduction of 10699 workers from Technical and associate professionals (ISCO-08 Major group 3) and a corresponding addition to Service and sales workers (ISCO-08 Major group 5).

(2) Mixed crop growers (ISCO-08 code 6114) in LFS 2013 are reclassified in elementary occupations (ISCO-08 Major group 9). It resulted in the deduction of 48709 workers from Skilled agricultural, forestry, fishery workers (ISCO-08 Major group 6) and a corresponding addition to Elementary occupations (ISCO-08 Major group 9).

In relative terms, the share of employment in managerial occupations has slightly increased, from 4.7% in 2010 to 5.9% in 2013. A similar slight increase of the share of employment can also be observed for skilled agricultural, forestry, fishery occupations, from 12.4% in 2010 to 13.3% in 2013, and for craft and related occupations, from 8.3% in 2010 to 9.5% in 2013.

The shares of employment in the other major occupational categories have essentially remained unchanged (5.6% for plant and machine operators and assemblers and about 28.3% to 28.8% for elementary occupations). The main relative drops concern the professionals, from 15.6% in 2010 to 9.9% in 2013, and the service and sales workers, from 19.8% in 2010 to 17.6% in 2013.

5. Status in employment

Table 4 shows the distribution of the employed population in 2010 and 2013 by status in employment. No adjustment was considered necessary for these data. The survey results show a substantial increase in the number of employees, from 68,760 in 2010 to 78,972 in 2013, corresponding to a relative increase of 14.9% during the three-year period. A similar rate of increase is observed with data from the establishment-based Business Activity Survey which shows about 13.8% rate of increase of employees between 2010 and 2013.⁵

4. Employment by status in employment: Timor-Leste LFS 2010-2013

Status in employment (ICSE-93)	LFS 2010	LFS 2013	LFS 2010 %	LFS 2013 %
Total	139144	189787	100.0%	100.0%
1 Employee	68760	78972	49.4%	41.6%
2 Employer	3042	5191	2.2%	2.7%
3 Own-account worker	44635	69639	32.1%	36.7%
4 Contributing family worker	21749	33857	15.6%	17.8%
5 Member of a producer's cooperative	438	534	0.3%	0.3%
6 On military service	520	1337	0.4%	0.7%
Not classified, Blank	0	256	0.0%	0.1%

Note: No adjustment of data by status in employment was considered necessary.

In relative terms, however, Table 4 shows that the share of employees in total employment has substantially decreased, from 49.4% in 2010 to 41.6% in 2013. A possible explanation of this downward trend is the fragilization of employment during the three-year period. It is possible that as subsistence foodstuff producers moved to the labour force, not all found paid employment, and as a result many had to establish their own business in the form of own-account workers or work in a family business as contributing family workers.

The data in Table 4 indeed show an increase in vulnerable employment (defined as the share of own-account workers and contributing family workers in total employment). The results show that vulnerable employment increased from 47.7% in 2010 to 54.5% in 2013.

⁵ Directorate-General of Statistics (DGS), Ministry of Planning, Business Activity Survey of Timor-Leste 2013, Dili, December 2014.

6. Informal employment

Further evidence on the fragilization of employment is obtained from the data on informal employment presented in Table 5 below. In line with the international statistical standards on the topic,⁶ informal employment includes: (a) Employees with no formal relationship with their employers, i.e., employees without paid sick leave and paid annual leave; (b) employers and own-account workers of informal sector enterprises, i.e., economic units engaging less than 5 workers and not registered under specific forms of national legislation; and (c) all contributing family workers.

5. Informal employment and composition: Timor-Leste LFS 2010-2013

Informal employment	LFS 2010	LFS 2013	LFS 2010 %	LFS 2013 %
Total employment	139,144	189,787	100%	100%
Total informal employment	94,280	136,600	67.8%	72.0%
1 Employees with no paid sick leave and paid annual leave	31,938	34,300	33.9%	25.1%
2 Employers of informal sector enterprises	1,109	2,500	1.2%	1.9%
3 Own-account workers in informal sector enterprises	39,430	65,900	41.8%	48.2%
4 Contributing family workers	21,803	33,900	23.1%	24.8%

Notes: Informal employment comprises (1) employees with no formal relationship with their employers defined for operational purposes as employees who do not benefit from paid sick leave and from paid annual leave; (2) employers of informal sector enterprises, i.e., enterprises with less than 5 persons employed and not registered at the Ministry of Justice or Ministry of Tourism, Commerce and Industry; (3) own-account workers in unregistered enterprises; and (4) all contributing family workers.

The data in Table 5 show that informal employment increased from 67.8% of total employment in 2010 to 72.0% in 2013. The main components contributing to this increase have been own-account workers in informal sector enterprises (41.8% of total informal employment in 2010 to 48.2% in 2013), and contributing family workers (23.1% of total informal employment in 2010 to 24.8% in 2013).

⁶ ILO, Resolution on the measurement of employment in the informal sector, adopted by the Fifteenth International Conference of Labour Statisticians (ICLS), Geneva, 1993, and Guidelines concerning a statistical definition of informal employment, adopted by the Seventeenth ICLS, Geneva, 2003.

7. Women and men

The trend in the main labour force indicators are calculated for women and men separately and presented in Table 6 below. Like the data presented earlier in Table 1 for the two sexes combined, the results show that during the period from 2010 to 2013, all main labour force indicators have increased for both the male and female populations analyzed separately. Female labour force sharply increased from 45,000 persons in 2010 to 73,000 in 2013 while male labour force increased from 106,000 in 2010 to 140,000 in 2013.

6. Main labour force indicators by sex Timor-Leste LFS 2010 – 2013

	Male		Female	
	LFS 2010 Adjusted	LFS 2013	LFS 2010 Adjusted	LFS 2013
Working age population (15+ yrs)	317592	353593	310812	342663
Labour force	105911	140320	45017	72903
Employed	99329	124491	39815	65296
(of which time-related underemployed)	141	946	0	454
Unemployed	6582	15829	5202	7608
Outside the labour force	211681	229102	265795	277367
(of which potential labour force)	1769	2802	1617	1852
Subsistence foodstuff producers	107793	98279	98501	80644
[%]				
Labour force participation rate	33.3%	39.7%	14.5%	21.3%
Employment-population ratio	31.3%	35.2%	12.8%	19.1%
LU1. Unemployment rate	6.2%	11.3%	11.6%	10.4%
LU2. Combined rate of unemployment and time-related underemployment	6.3%	12.0%	11.6%	11.1%
LU3. Combined rate of underemployment and potential labour force	7.8%	13.0%	14.6%	12.7%
LU4. Composite measure of labour underutilization	7.9%	13.7%	14.6%	13.3%

For women and men alike, the increase in the labour force was the result of increase in both employment and unemployment, accompanied by a corresponding decrease in subsistence foodstuff production. Male employment increased from 99,000 in 2010 to 124,000 in 2013. At the same time, male unemployment also increased, more than doubled, from 7,000 in 2010 to 16,000 in 2013. Similarly, female employment increased from 40,000 in 2010 to 65,000 in 2013, and female unemployment increased from 5,000



in 2010 to about 7,000 in 2013. The data in Table 6 show that other components of labour underutilization also increased during the period for men and women alike.

Aside from population growth, the principal reason for the increase in labour market activity in Timor-Leste was the decline in engagement of men and women in subsistence foodstuff production. The number of male subsistence foodstuff producers declined from almost 108,000 in 2010 to 98,000 in 2013. In parallel, the number of female subsistence foodstuff producers declined from 99,000 in 2010 to 81,000 in 2013.

The male labour force participation rate increased by 6.4 percentage points during the three-year period, almost equal to the decline in the percentage of male subsistence foodstuff producers among the male working age population which went from 33.9% in 2010 to 27.8% in 2013, corresponding to a decline of about 6.1 percentage point.

In the case of women, the decrease of the percentage of subsistence foodstuff producers among the female working age population (from 31.7% in 2010 to 23.5% in 2013, corresponding to a decline of 8.2 percentage points) was more than the increase in the female labour force participation during the same period (from 14.5% in 2010 to 21.3% in 2013, corresponding to an increase of 6.8 percentage points).

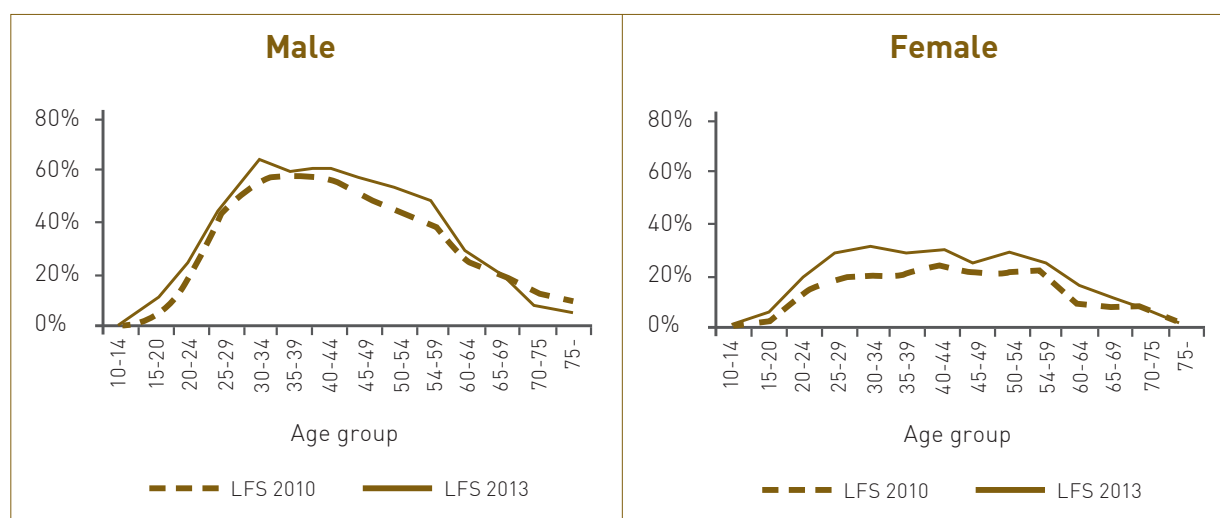
It is instructive to note that although the unemployment rate and the other measures of labour underutilization have all increased among men during the three-year period, they have slightly decreased among women. The male unemployment rate increased from 6.2% in 2010 to 11.3% in 2013, while the female rate slightly decreased from 11.6% in 2010 to 10.4% in 2013.

This result seems to be in line with the observation that the desire for labour market activity has been to some extent weaker among women relative to men, perhaps due the structural barriers that prevents many of them from participating in economic life.

Diagram 7 shows the changes in the labour force participation rates of men and women by age group. The dotted lines represent the 2010 pattern and the solid lines the 2013 pattern. It can be observed that for men and women alike, the dotted line lies below the solid line for all age groups except the upper tail of the age distribution.

This indicates that the increased participation in the labour force has been essentially universal among men and women and for all age groups except the elderly. It is instructive to note that the demographic group with the largest increase in participation rate were women in the age category of 30 to 54 years.

7. Labour force participation rate by sex Timor-Leste LFS 2010– 2013



Like most national labour force participation patterns, the curve of the male labour force participation rate has an inverted-U shape for 2010 and 2013 alike. In each year, the male curve is above the respective female curve, reflecting a higher labour force participation rate of men at all ages.

Also, both men and women, the curve increases at lower age groups reflecting the transition of youth leaving school and entering the labour market. It reaches a peak in the age group 30-34 years for men and 25-29 years for women. The curve slowly decreases as people leave and retire from the labour market at older ages, at around the age group of 54-59 years for men and 50-54 years for women.

It is instructive to note that the female curve is almost parallel to the male curve at lower age groups for both 2010 and 2013. In both years, it peaks at age group 25-29 years when women tend to marry. The 2013 curve exhibits a second peak, at about 35-39 years, suggesting a return of some married women into the labour market after young children in the household attain school age.

It should be noticed that the starting age category in the horizontal axis is with children 10-14 years old, below the age for measuring the working age population, 15 years old. This is to show that the participation of young children in labour market activity has also increased slightly from 2010 to 2013. This is the case for both young girls and young boys.

8. Youth⁷

In line with the general trend of increasing labour force participation at the national level and in contrast with global trends, the labour force participation of the youth population 15 to 24 years old has significantly increased in Timor-Leste during the three-year period from 2010 to 2013. As shown in Table 8 below, the youth labour force participation rate has increased from 8.5% in 2010 to 14.2% in 2013. In parallel, the youth employment-to-population ratio has increased from 6.8% in 2010 to 11.1% in 2013.

8. Main labour force indicators for youth and adults Timor-Leste LFS 2010 – 2013

	Youth (15-24 yrs)		Adults (25+ yrs)	
	LFS 2010 Adjusted	LFS 2013	LFS 2010 Adjusted	LFS 2013
Population	199409	200028	428995	496227
Labour force	17020	28351	133908	184872
Employed	13467	22147	125677	167640
(of which time-related underemployed)	0	200	141	1200
Unemployed	3553	6204	8231	17233
Outside the labour force	182389	171678	295087	334792
(of which potential labour force)	899	1652	2487	3002
Subsistence foodstuff producers	40754	28757	165540	150165
[%]				
Labour force participation rate	8.5%	14.2%	31.2%	37.3%
Employment-population ratio	6.8%	11.1%	29.3%	33.8%
LU1. Unemployment rate	20.9%	21.9%	6.1%	9.3%
LU2. Combined rate of unemployment and time-related underemployment	20.9%	22.6%	6.3%	10.0%
LU3. Combined rate of underemployment and potential labour force	24.8%	26.2%	7.9%	10.8%
LU4. Composite measure of labour underutilization	24.8%	26.9%	8.0%	11.4%

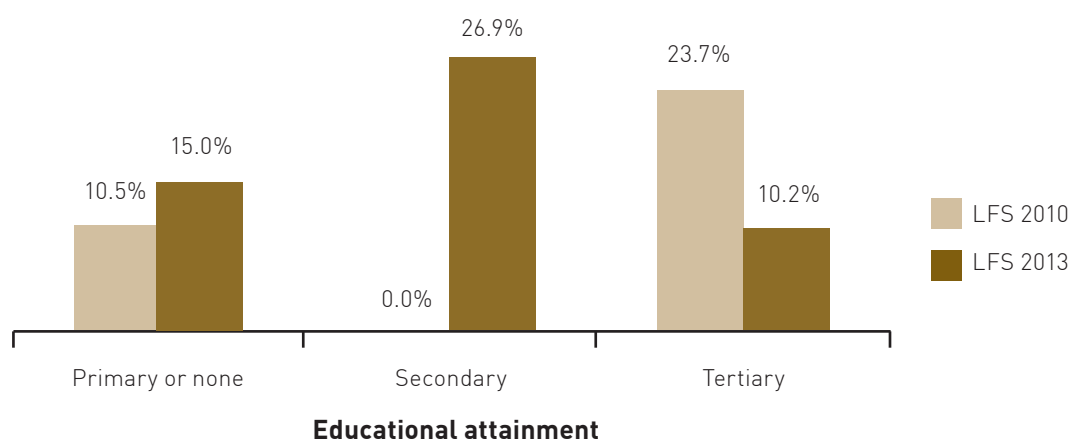
⁷ The youth comprises all persons in the age group 15 to 24 years. Persons in the age group 15 to 29 years are referred to as the young population. The latter concept is meant to reflect the increasing educational attainment and postponement of labour market entry beyond the age of 24.

The main factor contributing to this evolution is the decreasing importance of subsistence foodstuff production in which some 29,000 young persons 15 to 24 years old were engaged in 2013, down from more than 41,000 in 2010. The decrease in the share of subsistence foodstuff production among the youth population (-6.1 percentage points) has been higher than the increase in the youth labour force participation rate (+5.6 percentage point). The difference indicates the growing involvement of the youth population in the labour market.

As for the country as a whole, the increased labour force participation of the youth has been accompanied with growing youth unemployment. The youth unemployment rate has increased from 20.9% in 2010 to 21.9% in 2013. It is instructive to note that the increased unemployment rate of the youth (1.0 percentage points) has been considerably less than that of the adults (3.2 percentage points).

Diagram 9 shows that the change in the unemployment rate of the young population (15-29 years old) by level of educational attainment. It can be observed that among the young people with tertiary education, the unemployment rate has declined, from 23.7% in 2010 to 10.2% in 2013. This result is particularly significant as it indicates a strong demand for educated young people in the economy.

9. Unemployment rate of young population: Timor-Leste LFS 2010-2013



9. Education and participation in training programmes

In general, the educational attainment of the working age population has undergone a considerable evolution. According to the data in Table 10, the percentage of the population 15 years old and over with tertiary education has more than doubled from 1.8% in 2010 to 3.9% in 2013. The percentage with technical secondary, vocational course or polytechnic/diploma has also doubled from 1.6% in 2010 to 3.6% in 2013. The main increase occurred among those with secondary education that constituted 17% of the working age population in 2010 and 22.5% in 2013.

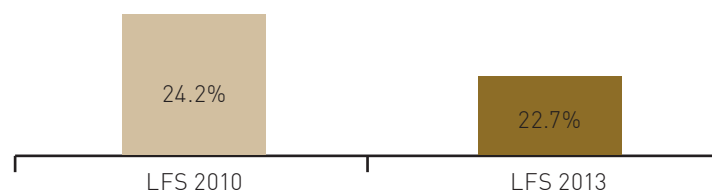
10. Evolution of educational attainment of the working age population: Timor-Leste LFS 2010 - 2013

Educational attainment	LFS 2010	LFS 2013	LFS 2010	LFS 2013	Change
	Adjusted		%	%	ppts
Total population (15+ yrs)	628,344	696,256	100.0%	100.0%	-
None	248,507	286,511	39.5%	41.2%	1.6%
Pre-primary	24,823	5,982	4.0%	0.9%	-3.1%
Primary	130,714	79,063	20.8%	11.4%	-9.4%
Pre-secondary	95,048	115,903	15.1%	16.6%	1.5%
Secondary	108,589	156,778	17.3%	22.5%	5.2%
Technical secondary	3,628	6,999	0.6%	1.0%	0.4%
Vocational course	1,671	4,714	0.3%	0.7%	0.4%
Polytechnic/Diploma	4,106	13,251	0.7%	1.9%	1.2%
University	11,258	27,054	1.8%	3.9%	2.1%

By contrast, the percentage of the working age population with primary education or below decreased from 20.8% in 2010 to 11.4% in 2013. Table 10 shows that the percentage of the working age population with no educational attainment remains high at about 40%. But this figure may be misleading as it includes blanks and unreported cases as well as those currently in school who have not yet completed primary education.

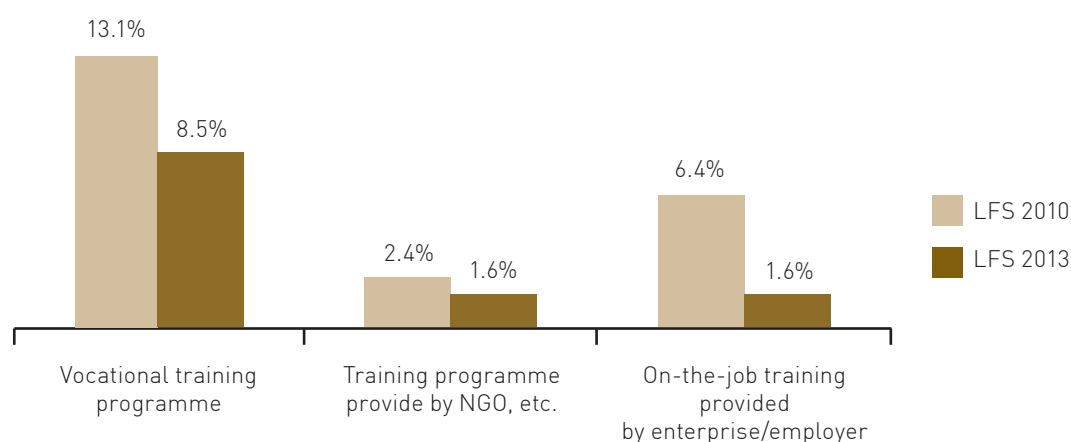
School attendance of the working age population has increased from 151,800 persons in 2010 to 157,700 in 2013. But in relative terms, the percentage of the working age population currently in school has decreased from 24.2% in 2010 to 22.7% in 2013. One interpretation of this result may be that the expanded employment opportunities during the three-year period from 2010 to 2013 attracted a larger share of the working age population from the schooling system or limited the return to school of persons who could not find suitable employment.

11. Current school attendance of the working age population Timor-Leste LFS 2010-2013



The results of the surveys also show that the participation in training programmes has declined in relative terms during the three-year period from 2010 to 2013. The household questionnaire of LFS 2013 included a set of questions on training outside the general education system within the last 12 months (H13 – H24). These questions however were not included in the LFS 2010 questionnaire. The comparison here is, therefore, based on question 27 on addressed to employed persons concerning the type of training they have obtained. The relevant results are shown in Diagram 12 below.

12. Participation in training programmes Timor-Leste LFS 2010-2013



Although the number of employed persons who reported to have received particular types of training has generally increased from 26,000 in 2010 to 33,700 in 2013, the rate of change has been less than the employment growth. Therefore, in relative terms, the percentage of the employed population with training inside or outside the enterprise has declined in all the three types of training considered in Diagram 12. The percentage of the employed population who reported to have received vocational training declined from 13.1% in 2010 to 8.5% in 2013.

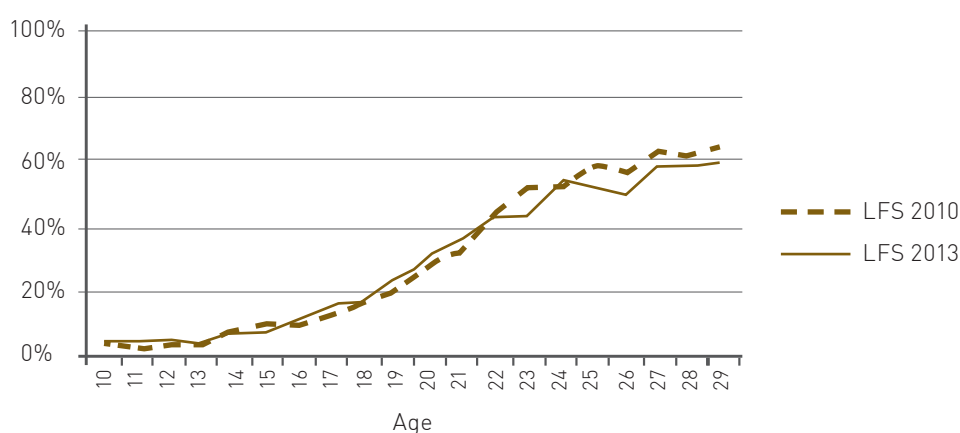
The percentage of the employed population who reported to have received training from NGOs has also declined from 2.4% in 2010 to 1.6% in 2013. Finally, the percentage



of the employed population who reported to have received on-the-job training at the enterprise or by the employer also declined from 6.4% in 2010 to 1.6% in 2013.

The overall relative decline of school attendance or participation in training programmes in favor of employment does not seem to have equally affected the youth population. According to the results presented in Diagram 13, the proportion of young people neither in employment, nor in education or training (NEET) has remained essentially stable for youngsters below 21 years of age, and even somewhat declined for those more than 21 years old.

13. Youth neither in employment, nor in education or training (NEET) Timor-Leste LFS 2010-2013



The threshold age of 21 years seems to be the turning point at which the NEET rate calculated from LFS 2013 falls below the corresponding rate calculated from LFS 2010. It is instructive to note that even at the age of 29 years, a significant number of persons (about 60%) are neither employed, nor in education or training. While a small percentage of them are accounted as unemployed, the majority remains engaged in subsistence foodstuff production, albeit at a declining rate in 2013 relative to 2010.

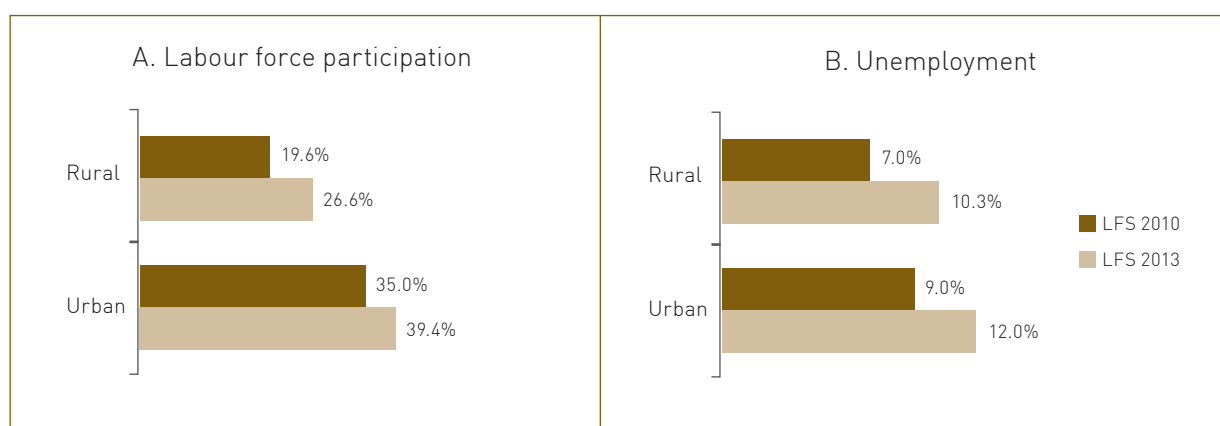
A full accounting of young people with respect to their engagement in education and labour market activities is important for the formulation of employment policies regarding youth. The present analysis shows that for such accounting to be effective it should go beyond employment, and take into account other forms of work, in particular, subsistence foodstuff production.

10. Regions

As expected, the expansion of labour force activity has been relatively more significant in rural areas than in urban areas. The data in Diagram 14 shows that the labour force participation in rural areas has increased from 19.6% in 2010 to 26.6% in 2013, corresponding to an increase of 7.0 percentage points. In urban areas, the labour force participation rate increased from 35.0% in 2010 to 39.4%, i.e., an increase of 4.4 percentage points.

At the same time, the unemployment rate in rural areas has increased from 7.0% in 2010 to 10.3% in 2013, representing an increase of 3.3 percentage points. In urban areas, the unemployment rate has also increased but at a slightly lower pace, from 9.0% in 2010 to 12.0% in 2013, i.e., an increase of 3.0 percentage points.

14. Labour force participation and unemployment in urban and rural areas Timor-Leste LFS 2010-2013



The expansion of labour market activity in the rural areas can be explained fully by the contraction of subsistence foodstuff production and more, as shown in the following calculation:

$$\Delta LFPR (\text{rural}) = +7.0 \text{ percentage points}$$

$$\Delta SFPR (\text{rural}) = -4.4 \text{ percentage points}$$

$$\text{Net} = +2.6 \text{ percentage points}$$

where $\Delta LFPR$ denotes the change in the labour force participation rate and $\Delta SFPR$ the change in the share of subsistence foodstuff producers in total working age population. For urban areas, the net change is actually negative,



$\Delta LFPR$ (urban) = +4.5 percentage points

$\Delta SFPR$ (urban) = -11.3 percentage points

Net = -6.8 percentage points

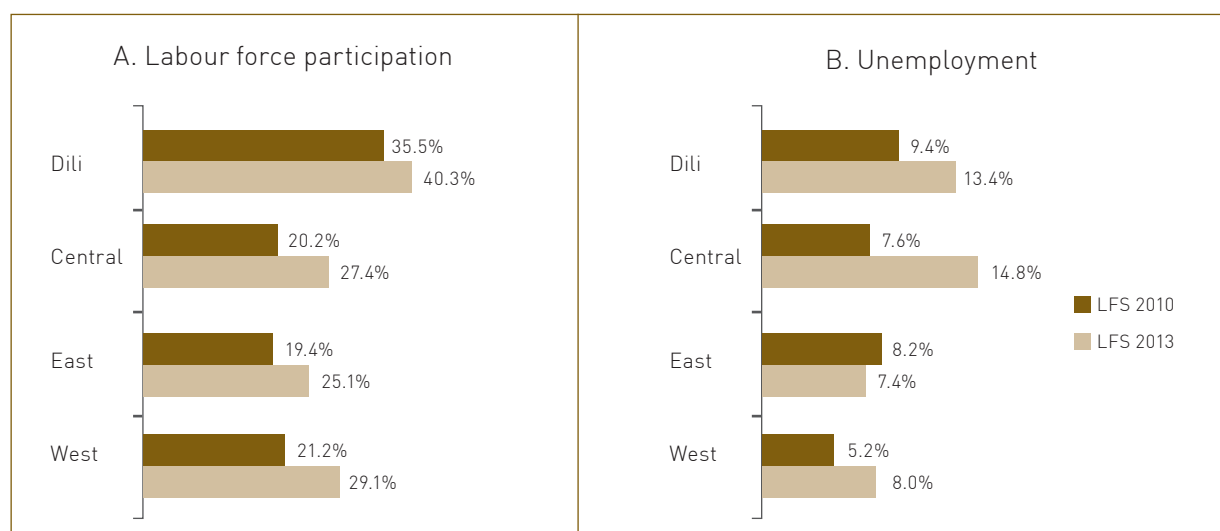
This indicates that the relatively more modest increase of the labour force participation rate in urban areas has not been sufficient to absorb the large reduction of subsistence foodstuff production, perhaps due to the added effect of rural-urban migration during the period.

The following diagram (Diagram 15) shows the evolution of the labour force participation and unemployment by region. Originally, for the purpose of survey design, three broad regions were defined, but later for reporting the capital city, Dili district, and the island of Atauro were separated from the Central district to form the following four regions:

- Dili = Capital city, rest of the district and island of Atauro
- Central = Districts of Aileu, Ainaro, Ermera and Manufahi
- East = Districts of Baucau, Lautem, Manatuto and Viqueque
- West = Districts of Bobonaro, Covalima, Liquica and Oecusse

The results show that the region with the most relative expansion of labour force activity has been the Central region where the labour force participation rate has witnessed the largest increase from 20.2% in 2010 to 27.4% in 2013, representing an increase of 7.2 percentage points. The Central region has also been the region with the largest increase in the unemployment rate that moved from 7.6% in 2010 to 14.8% in 2013.

15. Labour force participation and unemployment by region Timor-Leste LFS 2010-2013



The region with the second highest relative expansion of labour force participation activity was the West followed by the East. The Dili region registered the lowest relative expansion given its higher starting point compared to the other regions.

The Dili region was the region with second highest increase in the unemployment rate followed by the West. It is instructive to note that the East has actually recorded a drop in unemployment, where the unemployment rate slightly decreased from 8.2% in 2010 to 7.4% in 2013.

For the sake of completeness, the estimates of the main labour force aggregates are given at district level in Table 16a for LFS 2010 and Table 16b for LFS 2013. It should be mentioned that because of the relatively small number of sample observations in most districts, the margins of error of these estimates are relatively large, and the results should be treated with caution.

16a. Main labour force aggregates by urban/rural area, region and district Timor-Leste LFS 2010

	Population 15+ yrs	Labour force	Employ- ment	Time- related underemp- loyment	Unemploy- ment	Outside labour force	Potential labour force	Subsistence foodstuff producers
Total	628404	150928	139144	141	11784	477476	3386	206294
Urban	179839	62897	57245	0	5652	116942	1847	35121
Rural	448565	88031	81899	141	6132	360534	1539	171173
Regions								
Dili	154301	54776	49604	0	5172	99525	2332	25901
Central	146984	29748	27493	0	2255	117236	506	74265
East	156865	30376	27880	141	2496	126489	350	38539
West	170254	36028	34167	0	1861	134226	198	67589
Districts								
Ainaro	34872	12001	11812	0	189	22871	0	14280
Aileu	22872	6354	4832	0	1522	16518	506	7454
Baucau	64471	10572	9344	0	1228	53899	83	18086
Bobonaro	51642	7427	7184	0	243	44215	0	28424
Covalima	35907	8979	8233	0	746	26928	0	15497
Dili	154301	54776	49604	0	5172	99525	2332	25901
Ermera	60843	3748	3320	0	428	57095	0	40680
Liquica	43198	9876	9185	0	691	33322	147	11857
Lautem	34436	9062	8278	94	784	25374	136	5761
Manufahi	28397	7645	7529	0	116	20752	0	11851
Manatuto	22666	5766	5442	47	324	16900	69	3856
Oecusse	39507	9746	9565	0	181	29761	51	11811
Viqueque	35292	4976	4816	0	160	30316	62	10836

Note: Because of the relatively small number of sample observations in most districts, the margins of error of the estimates at district level are relatively large.



16b. Main labour force aggregates by urban/rural area, region and district Timor-Leste LFS 2013

	Population 15+ yrs	Labour force	Employ- ment	Time- related underemp- loyment	Unemploy- ment	Outside labour force	Potential labour force	Subsistence foodstuff producers
Total	696256	213223	189787	0	23437	483033	4654	178923
Urban	218813	86284	75915		10369	132529	683	17949
Rural	477443	126939	113871		13067	350504	3971	160974
Regions								
Dili	184915	74472	64457	0	10014	110443	188	9655
Central	139463	38243	32593	0	5650	101219	789	52415
East	191091	47897	44357	0	3540	143194	1240	56572
West	180788	52611	48379	0	4232	128177	2438	60281
Districts								
Ainaro	45605	5276	3411		1866	40328	354	16722
Aileu	26114	19641	19593		48	6472	92	2288
Baucau	74122	14656	13515		1141	59466	490	26319
Bobonaro	51957	13198	12009		1189	38759	516	18140
Covalima	43513	11428	8686		2742	32085	82	7061
Dili	184915	74472	64457		10014	110443	188	9655
Ermera	39404	5107	3695		1412	34297	0	26385
Liquica	39098	17664	17485		179	21434	1195	10671
Lautem	42881	19811	19064		747	23070	117	11592
Manufahi	28340	8219	5895		2324	20121	343	7020
Manatuto	20247	4962	4439		523	15285	246	4028
Oecusse	46220	10321	10199		123	35898	645	24409
Viqueque	53841	8468	7340		1129	45372	386	14633

Note: Because of the relatively small number of sample observations in most districts, the margins of error of the estimates at district level are relatively large.

11. Summary

Accurate assessment of the evolution of the labour force and its components requires comparable data over time. Aiming at this objective, the results of the labour force survey conducted in 2010 have been reprocessed to conform to the concepts and definitions used in the LFS 2013, in line with the new international standards adopted by the 19th International Conference of Labour Statisticians in 2013. The adjustment process also involved the harmonization of the data on occupations and on branches of economic activity due to differences in coding procedures implemented in LFS 2010 and LFS 2013.

The main results based on the adjusted data are summarized below:

- The reprocessed data show that labour force activity significantly increased during the period from 2010 to 2013, both in the form of employment and unemployment. Labour force participation and the employment-to-population ratio both increased by 6.6 and 5.2 percentage points, respectively, while at the same time the unemployment rate as well the other rates of labour underutilization also increased. The unemployment rate increased from 7.8% in 2010 to 11.0% in 2013. In contrast, the share of subsistence foodstuff producers among the working age population decreased during the period.
- The expansion of labour force activity was relatively more significant in rural areas than in urban areas. The rural expansion of labour market activity can be explained by the contraction of subsistence foodstuff production. For urban areas, however, the relatively more modest increase of the labour force participation rate has not been sufficient to absorb the large reduction of subsistence foodstuff production, perhaps due to the added effect of rural-to-urban migration during the period.
- The results show that the region with the most relative expansion of labour force activity has been the Central region. The region with the second highest relative expansion of labour force participation was the West followed by the East. Dili region registered the lowest relative expansion given its higher starting point compared to the other regions. Dili region was however the region with the second highest increase in the unemployment rate followed by the West. The East has actually recorded a drop in unemployment rate.
- The adjusted data show increase in employment in virtually all sectors of the economy including agriculture, manufacturing, construction, and accommodation and food service activities. The data on education, arts, entertainment and recreation, activities of households as employer, and activities of extraterritorial organizations and bodies show however some decline in employment in these sectors.
- In terms of occupations, the data show slight increase in the share of employment in managerial occupations, as well as in skilled agricultural, forestry, fishery occupations and craft and related occupations. The shares



- of employment in the other major occupational categories have essentially remained unchanged, except for professionals and service and sales workers.
- The harmonized data show that the large expansion of labour force activity during the three-year period was to some extent accompanied with the fragilization of employment as indicated by the relative increase of vulnerable employment and informal employment.
 - The general trend of expanding labour force activity and contracting subsistence foodstuff production was also observed for men and women separately, and for all age groups, except the elderly male population above 70 years of age. The relative decline in the number of subsistence foodstuff producers among men almost fully explains the increase in the male labour force participation rate.
 - In the case of women, however, the relative decrease in subsistence foodstuff production was more than the increase in the female labour force participation rate, suggesting that women who retreated from subsistence foodstuff production did not all enter the labour force immediately, perhaps taking up family responsibilities or awaiting better employment opportunities in the future. This may also explain the fact that although the unemployment rate and the other measures of labour underutilization have all increased among men they have slightly decreased among women.
 - As for the country as a whole, the increased labour force participation of the youth (15 to 29 years old) has been accompanied with growing youth unemployment. There is however an exception. When the data are analyzed by level of educational attainment, the unemployment rate among youth with tertiary education has in fact decreased.
 - In general, the educational attainment of the working age population has undergone a considerable evolution. The main increase occurred among those with secondary education. School attendance of the working age population has also increased, but in relative terms, the percentage of the working age population currently in school has somewhat decreased. This is perhaps because the expanded employment opportunities attracted a larger share of the working age population from the school system or limited the return to school of persons who could not find suitable employment.
 - A similar result was observed regarding participation in training programmes. Although the number of employed persons who reported to have received particular types of training has generally increased, the rate of change has been less than the employment growth. Therefore, in relative terms, the percentage of the employed population with training inside or outside the enterprise has declined in all three types of training considered.
 - The overall relative decline of school attendance or participation in training programmes in favor of employment does not seem to have equally affected the youth population. The threshold age of 21 years seems to be the turning point at which the rate of the youth not in employment, nor in education or training (NEET) calculated for 2013 turns below the corresponding rate calculated for 2010.



Annex A.

Harmonization of data for differences in main definitions

The LFS 2013 data have been processed according to the concepts and definitions adopted by the international standards on statistics of work, employment, and labour underutilization adopted by the Nineteenth International Conference of Labour Statisticians (Geneva, 2013).⁸ They are briefly described below.

Work and employment

Work is defined as “any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use” in line with the general production boundary defined in the System of National Accounts (SNA) 2008. It excludes “activities not involving production of goods or services (begging, stealing), self-care (personal grooming, hygiene) and activities that cannot be performed by another person on one’s own behalf (sleeping, learning, own recreation).”

The international standards recognize different forms of work: Own-use production work (production of goods and services for own final use); employment (work performed for others in exchange for pay or profit); unpaid trainee work (work performed for others without pay to acquire workplace experience or skills); volunteer work (non-compulsory work performed for others without pay); and other forms of work (not defined at this time by the international standards, e.g., community work by prisoners, ordered by court or similar authority).

Employment is a particular form of work. Persons in employment are defined as all those above a specified age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. It excludes persons engaged wholly in activities to produce goods or services for own final use such as producing agricultural, fishing and gathering products for own-consumption or cleaning, decorating, gardening and maintaining one’s own dwelling or premises, durables and other goods. Persons in employment comprise: (a) employed persons “at work,” i.e., who worked in a job for at least one hour; and (b) employed persons “not at work” due to temporary absence from a job, or to working-time arrangements (such as shift work, flexi-time and compensatory leave for overtime).

⁸ ILO, Resolution concerning statistics of work, employment and labour underutilization, Nineteenth International Conference of Labour Statisticians, Geneva, October 2013.



The measurement of employment of the LFS 2010 differed from this definition in several aspects. The LFS 2010 definition was based on the earlier international standards (13th ICLS) in which no clear distinction between work and employment existed and employment included “Persons engaged in the production of economic goods and services for own and household consumption ... if such production comprises an important contribution to the total consumption of the household.”⁹ What constitutes “important contribution” was however not further specified.

The main difference between the LFS 2013 definition of employment and that of LFS 2010 is the treatment of persons who produce goods intended mainly for own consumption, though part of the output is sold or bartered in the market. These persons were classified as employed in LFS 2010, but excluded from the count of employment in LFS 2013 unless they were worked for pay or profit in a secondary activity during the reference period.

Another difference between the LFS 2010 and LFS 2013 definitions of employment concerns persons temporary absent from their job, in particular, with respect to the expected duration of absence for certain categories of persons, 6 months under LFS 2010 and 3 months under LFS 2013.

Unemployment and other forms of labour underutilization

Persons in unemployment are defined as all those above a specified age who (a) were not in employment; (b) carried out activities to seek employment during a specified recent period; and (c) were currently available to take up employment given a job opportunity. The definition of unemployment provides an exception in the case of future starters. They are considered as unemployed even if they did not carry out activities to seek employment during the specified recent period, criterion (b) as long as they satisfy the availability condition.

Other forms of labour underutilization include time-related underemployment and potential labour force. Persons in time-related underemployment are defined as all persons in employment who, during a specified reference period, (a) wanted to work additional hours, (b) whose working time in all jobs was less than a specified hours threshold, and (c) who were available to work additional hours given an opportunity for more work. The hour-threshold was set at 40 hours of work during the reference week at all jobs.

⁹ ILO, Resolution concerning statistics of the economically active population, employment, unemployment and underemployment, Thirteenth International Conference of Labour Statisticians, Geneva, October 1982.

It corresponds to the modal value of the distribution of hours actually worked at all jobs during the reference week.

Potential labour force is defined as all persons above a specified age who, during the short reference period, were neither in employment nor in unemployment but who were considered as either (a) unavailable jobseekers (seeking employment but not currently available) or (b) available potential jobseekers (currently available for employment but did not carry out activities to seek employment).

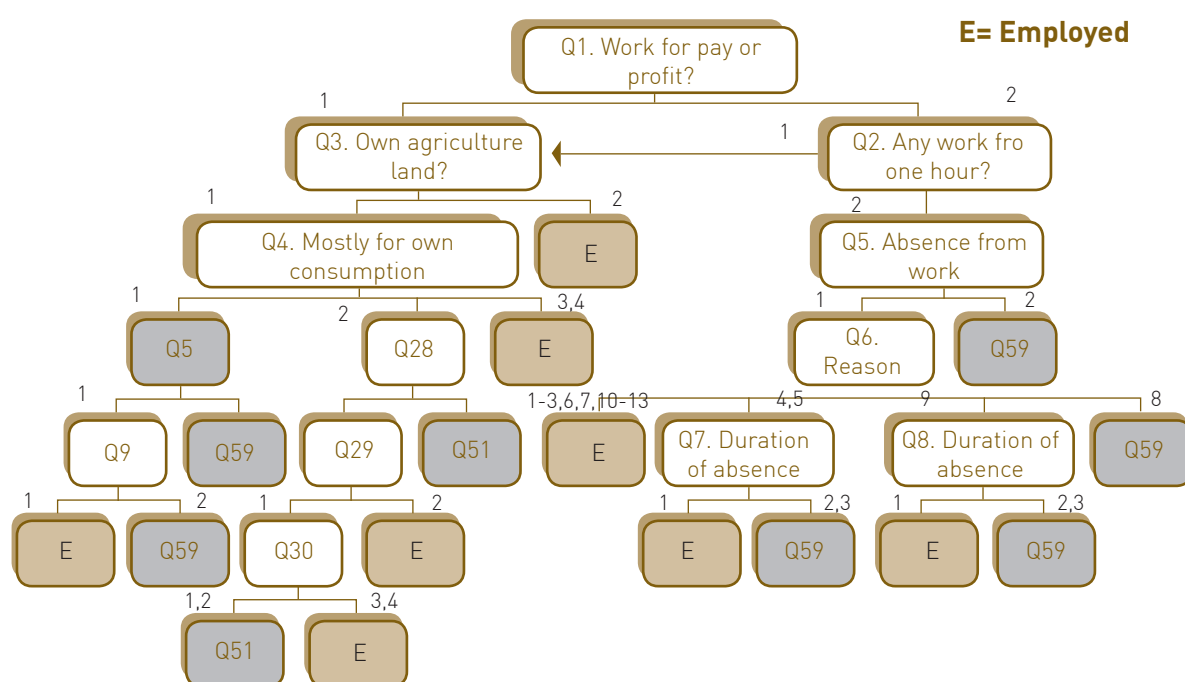
The LFS 2010 definition of unemployment was essentially the same as that of LFS 2013, but because of the differences in the definitions of employment, the resulting measurements of unemployment were also affected. In particular, subsistence foodstuff producers who were available and activity seeking employment during the corresponding reference periods were classified as unemployed under the LFS 2013 definitions but not under the LFS 2010 definitions.

Also, the LFS 2010 did not explicitly measure labour underutilization although it measured time-related underemployment and the labour force attachment of persons outside the labour force using different criteria.

It is fortunate that the LFS 2010 and LFS 2013 questionnaires are very similar and provide the basis for reprocessing the LFS 2010 data on the basis of the LFS 2013 definitions.

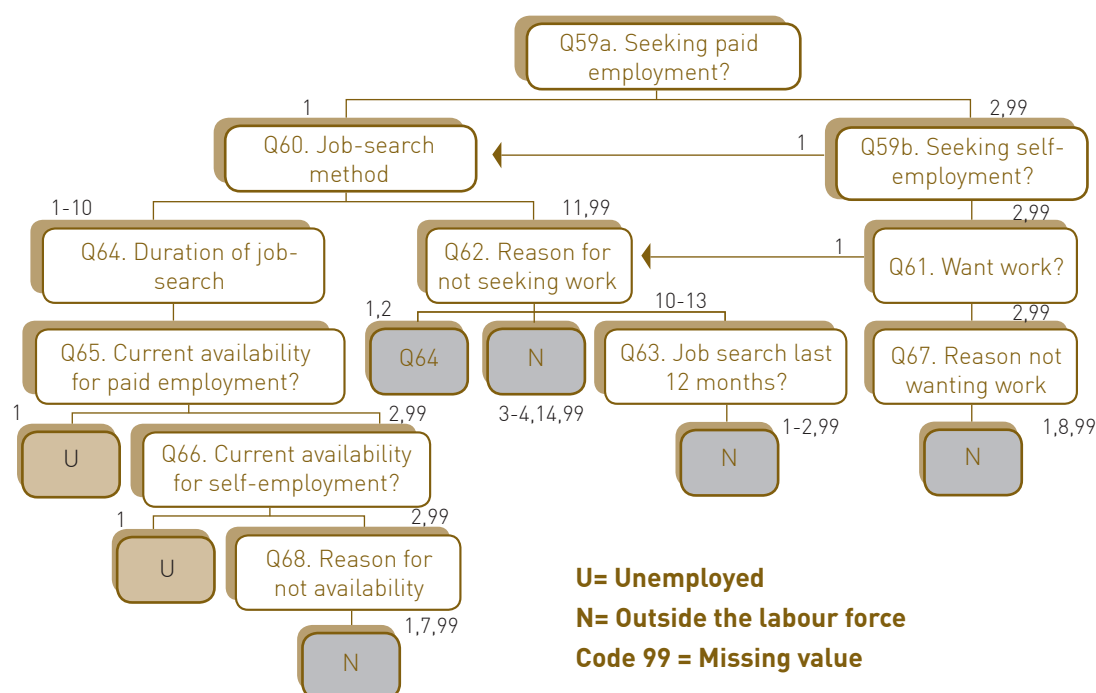
The following diagrams show the algorithm of the data processing of employment and unemployment of the LFS 2010 questionnaire under the LFS 2013 definitions.

Measurement of employment





Measurement of unemployment



The essential difference between the LFS 2013 and LFS 2010 procedures lies in the box Q4 of the measurement of employment:

Q4. In general, are the raw or processed products obtained from this land produced exclusively for your household's own consumption or also for sale/barter?

1. Only for own consumption
2. Mostly for own consumption and some for sale or barter
3. Mostly for sale or barter and some for own consumption
4. Only for sale or barter

Under the original LFS 2010 processing, persons reporting Q4=2 are integrated with those reporting Q4=3 and Q4=4, and all are classified as employed.

Under the LFS 2010reprocessing scheme as shown in the diagram, persons reporting "Mostly for own consumption and some for sale or barter" (Q4=2) are further analyzed to assess whether they have been engaged in a secondary activity (Q28) and if so whether the secondary activity was on own agricultural land (Q29) and whether the products were exclusively for household's own consumption or also for sale/barter (Q30). Only persons reporting a secondary activity not on own agricultural land or on own agricultural land with products wholly or mostly or for sale or barter were classified as employed.

Annex B.

Harmonization of data for differences in industry and occupation codes

Harmonization of industry codes

Data on the branch of economic activity of employed persons at their main job are collected by asking descriptions of “the kind of industry, business or activity is carried out at your place of work?” (Q22a) and “the main goods or services produced at your place of work or its main function?” (Q22b).¹⁰ The replies are recorded textually during the interview and coded with a four-digit code later in the office. In both LFS 2010 and LFS 2013 the coding systems used were based on the International Standard Industrial Classification of All Economic Activities (ISIC Rev 4).¹¹ Their applications in the two surveys however seem to have been different.

Table B.1 at the end of the Annex lists the 4-digit industry codes with the corresponding number of employed persons according to LFS 2010 and LFS 2013, respectively. In total, 151 4-digit codes were only used in LFS 2010 whereas some 372 were used in LFS 2013. While this indicates the wider diversity of branches of economic activity in the economy, it also suggests differential applications of the coding system.

An example is the coding of the construction industries. The following tabulation extracted from Table B.1 gives the total number of persons employed in different branches of economic activity in the construction industry according to LFS 2010 and LFS 2013, respectively:

Code	Branch of economic activity	LFS 2010	LFS 2013
	Total Construction	12352	11496
4100-4190	Construction of buildings	7414	4524
4210-4290	Civil engineering	3120	3274
4311-4390	Specialized construction activities	1818	3697

The results show a decline in the number of construction workers from 12,352 in 2010 to 11,496 in 2013, attributed mainly in construction of buildings (shaded cells in the table) showing a decrease in employment from 7,414 in 2010 to 5,524.

10 Similar sets of questions are asked for any secondary activity of the employed persons (Q43a and Q43b) and last employment of persons not currently employed (Q76a and Q76b).

11 UN, International Standard Industrial Classification of All Economic Activities, ISIC Rev 4, United Nations Department of Economic and Social Affairs, New York, August 2008. <http://unstats.un.org/unsd/cr/registry/isic-4.asp>



Analyzing the data on construction of buildings by occupation as shown in the next tabulation, it becomes apparent (shaded cells) that many workers engaged in construction industry in elementary or other occupations in 2010 were classified in specific construction-related occupations in 2013:

Code	Branch of economic activity	LFS 2010	LFS 2013
41	Construction of buildings	7414	4524
	Craft and related trades workers	3232	3529
	Elementary occupations	2939	608
	Other occupations	1236	387

To examine this issue in more detail the number of workers in all construction-related occupations is calculated from Table C and shown in the following table:

**Employment in construction-related occupations:
Timor-Leste LFS 2010 – 2013**

ISCO	Construction-related occupations	LFS 2010	LFS 2013
	Total	10053	11470
7111	House builders	0	209
7112	Bricklayers and related workers	830	1614
7113	Stonemasons, stone cutters, splitters and carvers	0	1141
7114	Concrete placers, concrete finishers and related workers	0	4218
7115	Carpenters and joiners	2929	1281
7119	Building frame and related trades workers not elsewhere classified	0	77
7121	Roofers	0	1301
7122	Floor layers and tile setters	73	125
7123	Plasterers	0	116
7124	Insulation workers	0	15
7125	Glaziers	0	0
7126	Plumbers and pipe fitters	302	156
7127	Air conditioning and refrigeration mechanics	0	0
7131	Painters and related workers	0	38
7132	Spray painters and varnishers	0	0
7133	Building structure cleaners	0	0
7411	Building and related electricians	418	153
9312	Civil engineering labourers	1982	173
9313	Building construction labourers	3519	815

The results show that the total number of employed persons in construction-related occupations is almost equal to the total number of employed persons in the construction industry in 2013, 11,470 versus 11,496. The results for 2010 are however vastly different, 10,053 versus 12,352.

Moreover, the direction of change shows opposite trend. The number of employed persons in construction-related occupations indicates an increase from 10,053 in 2010 to 11,470 in 2013, while the number of employed persons in the construction industry shows a significant decrease from 12,352 in 2010 to 11,496 in 2013.

Given that the industry classification in LFS 2010 is less refined than that of LFS 2013, it was not possible to convert the LFS 2010 codes to those of LFS 2013. It has been decided instead to convert the LFS 2013 codes to those of LFS 2010. Accordingly, employed persons in construction-related occupations in manufacturing except carpenters and joiners were reclassified in construction industry. Also employed persons in all construction-related occupations in professional, scientific and technical activities and in administrative and support service activities were reclassified in the construction industry.

Similar analyses for other specific sectors were carried out, namely, agriculture, forestry, and fishing, wholesale and retail trade, repair of motor vehicles and motorcycles, and accommodation and food service activities. The resulting adjustment procedure is described in the footnote of Table 2 of the present report.

Harmonization of occupation codes

The occupation codes have been harmonized with a similar approach used for the harmonization of industry codes. Data on the occupation of employed persons at their main job are collected by asking the occupation title of the person (Q21a) and a short description of the main task and duties (Q21b).¹² The replies are recorded textually during the interview and coded with a four-digit code later in the office. In both LFS 2010 and LFS 2013 the coding systems used were based on the International Standard Classification of Occupations (ISCO-08).¹³ As in industry coding, the application of occupation coding in the two surveys have however been different.

12 Similar sets of questions are asked for any secondary occupations of the employed persons (Q42a and Q42b) and last employment of persons not currently employed (Q75a and Q75b). They are also asked for the kind of work the person was trained for or learned to do (Q26).

13 ILO, International Standard Classification of Occupations, ISCO-08, adopted by the Eighteenth International Conference of Labour Statisticians, Geneva, 2008. <http://www.ilo.org/public/english/bureau/stat/isco/isco08/>



Table B.2 at the end of the report lists the 4-digit occupation codes with the corresponding number of employed persons according to LFS 2010 and LFS 2013, respectively. In total, only 155 4-digit codes were used in LFS 2010 whereas some 308 were used in LFS 2013. While this indicates the wider diversity of occupations in the economy, it also suggests differential applications of the coding system.

Two examples are given in the following tabulation extracted from Table B.2 gives the total number of persons employed in different agriculture production and sales occupations according to LFS 2010 and LFS 2013, respectively:

Code	Occupation	LFS 2010	LFS 2013
9211	Crop farm labourers	25141	68
6114	Mixed crop growers	-	48709
3323	Buyers, traders	10699	-
5211	Stall and market sales persons	1562	8556
5221	Shop keepers	1458	3031

The first two rows relate to agricultural occupations. The data show that there were 25,141 crop farm labourers in 2010, and only 68 in 2013. In contrast, according to these results, there were no mixed crop growers in 2010 but 48,709 in 2013. Note that the differential coding procedures affect not only the 4-digit codes but also the first digit of the occupation classification. Crop farm labourers with first-digit code 9 are part of the elementary occupations while mixed crop growers with first-digit code 6 are part of skilled agricultural, forestry and fishery workers.

Large discrepancies may also be observed with respect to sales occupations in the last three rows of the table. According to these data, there were 10,699 buyers and traders in 2010, but none in 2013. In contrast, there were 1,562 stall and market sales persons in 2010 and more than five-fold, i.e., 8,556, in 2013. Similarly, there were 1,458 shopkeepers in 2010 and 3,031 in 2013, i.e., more than double.

Again, it should be noted that the differential coding schemes affect the first-digit codes as well as the four-digit codes. Buyers and traders with the first-digit code 3 are part of “technicians and associate professionals”, while stall and market sales persons, and shopkeepers with first-digit code 5 are part of “service and sales workers.”

To adjust for the differential coding schemes and harmonize the resulting data for the present report, it was decided to reclassify mixed crop growers in LFS 2013 in elementary occupations (ISCO-08 Major group 9), and buyers and traders in LFS 2010 as part of service and sales workers (ISCO-08 Major group 5).

Many other coding adjustments were considered but in the absence of detailed information on the coding procedures and for the sake of parsimony, it was decided to limit the reclassification of industry and occupation data to those with the highest frequencies and most obvious solutions, i.e., those reported in the footnotes of Tables 2 and 3 and described in the present Annex.



B.1 Classification of employed persons by main branch of economic activity

ISIC Rev. 4 (4-digit code): Timor-Leste 2010-2013

Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
0	61	0	1012	0	139	2396	0	90
1	70	0	1020	183	0	2410	0	13
100	4089	1225	1040	36	0	2422	0	23
111	28	4483	1054	0	97	2431	0	85
112	1211	1908	1061	0	47	2511	73	0
113	22947	56968	1071	27	330	2522	73	0
114	0	255	1074	0	100	2591	117	0
115	0	313	1075	0	32	2593	93	0
116	0	40	1079	73	22	2595	0	44
119	1021	38	1100	63	0	2600	0	0
122	0	0	1101	0	48	2610	0	12
123	0	358	1102	0	803	2622	0	12
124	0	166	1103	0	153	2630	0	58
125	0	233	1104	0	61	2642	59	0
126	88	273	1111	0	68	2651	0	16
127	703	28	1113	0	169	2652	140	0
128	34	65	1130	0	38	2710	0	13
129	839	279	1131	0	0	2733	0	51
131	0	0	1149	0	42	2811	0	10
133	43	0	1202	0	68	2813	0	6
141	362	936	1211	0	58	2814	0	25
142	0	0	1212	0	497	2819	0	15
144	0	604	1221	0	72	2821	0	33
145	344	705	1249	0	51	2822	0	0
146	384	301	1311	0	39	2824	0	55
149	0	1250	1312	2060	2950	2826	0	28
150	45	492	1313	0	281	2910	0	42
156	0	0	1323	0	45	2921	38	0
160	0	0	1342	0	66	2930	0	9
161	0	147	1345	73	0	3020	0	17
162	0	420	1346	0	21	3084	0	43
163	0	8	1396	0	37	3100	745	0
164	0	172	1410	361	0	3111	68	0
171	0	35	1411	12	0	3114	73	0
193	0	18	1490	0	17	3123	0	12
202	0	0	1511	0	68	3141	0	14

Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
210	0	104	1520	51	0	3203	0	63
220	895	1283	1610	0	115	3220	0	22
223	0	45	1622	0	299	3240	0	0
227	0	0	1627	0	27	3256	0	40
230	0	16	1628	36	0	3310	0	21
240	30	16	1629	704	0	3311	0	20
310	0	8	1662	0	6	3312	527	53
311	3320	3146	1782	0	82	3314	0	33
312	0	67	1820	0	52	3323	42	0
314	79	0	1841	0	25	3510	340	173
321	75	292	1910	0	45	3511	0	54
322	0	207	1920	72	34	3512	59	40
410	0	35	2030	0	25	3513	0	43
412	0	41	2195	0	45	3600	61	145
419	0	23	2202	0	0	3812	0	355
446	0	83	2212	4	0	4010	11	0
510	0	41	2330	0	174	4100	7320	4340
610	122	0	2341	0	214	4106	0	56
700	219	0	2342	70	0	4111	0	98
810	744	1140	2352	0	60	4113	0	20
893	68	0	2353	0	17	4189	0	9
1001	73	0	2392	0	105	4190	94	0
1010	0	107	2394	0	14	4210	2743	1369
1011	0	13	2395	0	1586	4211	12	0
4219	0	15	4799	1874	318	6112	0	49
4220	0	1102	4811	188	0	6113	0	179
4229	0	23	4822	0	0	6114	0	714
4290	365	766	4911	0	91	6121	0	128
4311	0	39	4921	1421	1509	6122	0	0
4312	0	122	4922	4558	3403	6130	0	64
4313	0	13	4923	597	2208	6190	0	52
4321	628	871	4932	0	24	6201	73	444
4322	323	83	4951	0	34	6202	1301	0
4323	0	38	4987	0	13	6209	0	43
4329	0	340	4989	0	10	6229	23	0
4330	86	0	4990	0	48	6241	0	65
4332	25	0	5010	77	0	6300	295	0
4350	78	0	5011	0	11	6310	0	154



Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
4360	0	138	5021	0	0	6311	0	309
4390	678	2053	5100	111	0	6312	0	10
4400	11	0	5120	0	62	6320	0	85
4510	0	297	5121	0	93	6390	0	9
4520	512	787	5152	54	0	6391	0	551
4530	0	0	5169	0	147	6410	146	1267
4549	0	37	5210	958	436	6411	4	244
4562	0	59	5211	12	12	6420	0	85
4600	15307	0	5212	0	13	6430	0	138
4610	0	522	5221	0	604	6490	0	437
4614	0	22	5224	0	59	6491	0	22
4620	0	2005	5229	0	2826	6509	0	11
4621	0	0	5230	73	0	6510	0	56
4630	0	2075	5243	0	0	6511	0	402
4641	0	327	5246	0	48	6520	0	17
4649	0	8	5310	73	0	6521	0	29
4652	0	178	5311	4	101	6522	0	8
4653	0	38	5312	0	12	6529	0	185
4661	0	220	5320	0	33	6530	0	272
4662	0	35	5414	73	0	6611	0	205
4663	0	221	5501	73	0	6619	0	346
4690	0	56	5510	314	0	6800	0	40
4710	2934	16	5521	71	0	6910	0	572
4711	438	581	5610	1629	154	6920	1254	23
4719	0	1581	5620	0	32	7000	0	66
4721	0	80	5621	0	214	7010	0	620
4722	0	33	5629	0	811	7020	0	312
4729	0	44	5630	73	45	7110	0	149
4730	0	299	5810	0	300	7111	0	84
4742	0	111	5811	0	72	7112	12	0
4750	0	394	5814	0	35	7113	0	55
4751	0	26	5819	0	75	7114	0	72
4752	81	0	5821	0	89	7115	35	13
4753	0	76	5830	0	43	7120	0	37
4759	0	126	5900	34	0	7121	0	150
4760	0	309	5911	0	39	7231	0	23
4770	0	187	5920	4	0	7318	0	248
4771	0	304	5924	0	8	7320	0	8

Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
4772	0	0	5929	0	30	7322	0	14
4773	0	95	5969	0	21	7411	71	11
4780	6366	73	6000	92	0	7413	0	52
4781	58	2126	6010	0	40	7419	0	20
4782	0	1227	6020	0	81	7420	0	91
4789	0	786	6100	223	0	7481	0	195
4790	0	204	6110	0	38	7490	173	1049
4791	0	28	6111	0	163	7500	0	149
7522	23	0	8810	0	450			
7700	0	1360	8890	158	43			
7721	0	12	8910	0	28			
7730	0	94	9000	4335	128			
7800	0	1859	9006	33	0			
7810	0	253	9020	0	8			
7820	0	109	9101	0	72			
7830	0	69	9111	0	21			
7900	0	52	9112	0	21			
7911	0	158	9121	0	21			
8000	0	291	9191	12	0			
8009	0	58	9200	0	34			
8010	5902	1353	9211	0	0			
8020	0	3610	9310	571	0			
8023	0	91	9311	0	49			
8030	0	195	9312	0	13			
8080	0	36	9313	145	110			
8100	4	408	9329	0	13			
8101	0	15	9390	73	0			
8110	0	159	9400	533	192			
8111	11	85	9411	0	478			
8121	0	110	9412	0	261			
8125	0	51	9420	0	256			
8129	0	1774	9421	8	0			
8130	172	539	9439	73	0			
8200	0	742	9491	309	117			
8211	0	223	9494	0	26			
8299	0	37	9495	0	17			
8310	58	0	9499	289	0			
8410	0	1246	9521	141	144			



Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
8411	4030	1568	9524	0	62			
8412	0	872	9529	25	153			
8413	0	12	9600	0	19			
8422	611	206	9601	456	0			
8423	1851	3647	9602	104	91			
8491	6	0	9603	0	38			
8500	1049	285	9606	0	77			
8501	0	18	9608	0	22			
8510	9182	7540	9609	0	4347			
8512	0	30	9700	2096	408			
8520	0	71	9800	0	406			
8521	3942	2254	9820	0	127			
8522	0	391	9900	222	7			
8530	120	304						
8541	291	186						
8542	13	0						
8545	0	23						
8549	466	997						
8550	0	83						
8600	939	42						
8601	0	8						
8610	8	1755						
8620	237	582						
8629	1401	0						
8690	101	505						
8700	73	0						
8710	0	224						
8730	0	15						
8790	0	11						
8800	0	63						

B.2 Classification of employed persons by main occupation
ISCO-08(4-digit code): Timor-Leste 2010-2013

Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
0	327	0	2343	0	15	3223	0	7
1	329	60	2351	0	52	3230	0	41
50	0	16	2352	0	706	3240	0	42
100	184	0	2353	0	1047	3241	0	73
113	0	32	2354	0	45	3242	0	37
150	0	32	2359	0	160	3252	0	0
313	51	0	2395	0	11	3253	0	242
322	146	0	2411	969	139	3256	0	26
1023	12	0	2412	0	169	3258	0	229
1112	995	339	2413	0	316	3259	0	91
1113	3042	1861	2422	0	514	3311	0	383
1114	0	4	2423	0	68	3313	0	80
1120	0	1759	2424	0	117	3319	0	16
1211	0	423	2432	0	95	3321	0	44
1212	0	51	2434	371	0	3322	91	65
1213	0	152	2442	0	25	3323	10699	0
1219	0	299	2511	73	0	3324	0	13
1221	0	4076	2513	45	0	3331	0	20
1222	0	16	2515	0	12	3333	0	114
1223	0	19	2519	0	15	3334	0	11
1224	0	21	2521	59	0	3335	0	11
1311	0	290	2522	1490	199	3339	0	8
1312	73	631	2529	0	30	3341	0	17
1323	340	85	2554	0	36	3342	0	111
1324	0	114	2611	4	150	3343	0	386
1330	0	47	2612	0	84	3344	0	100
1334	0	15	2613	0	20	3351	0	76
1341	0	101	2619	0	21	3352	0	61
1342	73	247	2633	0	28	3353	0	86
1343	16	52	2636	0	51	3354	0	68
1345	1462	512	2642	470	188	3355	0	1168
1411	483	60	2643	173	359	3359	0	173
1412	0	8	2652	4095	0	3411	0	196
1911	112	0	2653	0	91	3412	0	195
2130	13	0	2654	34	0	3413	195	54
2142	173	525	2911	92	0	3421	22	12



Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
2151	5	59	3039	142	0	3422	43	366
2164	0	40	3100	13	0	3431	0	91
2166	0	16	3112	468	597	3434	0	105
2211	368	346	3113	386	20	3511	0	89
2212	0	23	3114	197	0	3512	365	189
2215	0	54	3115	0	407	3513	0	43
2221	248	1022	3117	72	0	3514	0	16
2222	199	92	3123	266	1268	3522	5	0
2224	0	23	3131	73	13	4110	1015	363
2240	0	324	3132	0	40	4113	0	20
2242	0	21	3134	0	94	4120	232	410
2250	0	34	3139	0	690	4122	0	31
2261	0	155	3141	0	10	4132	99	54
2262	0	19	3142	0	181	4210	0	124
2263	0	325	3143	0	16	4211	4	225
2269	0	120	3151	108	0	4212	0	57
2304	0	0	3210	558	0	4220	0	35
2310	120	144	3211	81	52	4222	0	22
2320	0	146	3212	0	37	4223	0	158
2322	0	8	3213	223	0	4224	0	193
2330	3218	2027	3214	0	16	4225	0	16
2340	0	15	3220	0	0	4226	219	43
2341	8152	8349	3221	472	0	4227	0	136
2342	1281	167	3222	142	0	4229	0	91
4240	45	0	5415	0	16	7413	0	659
4290	0	133	5419	31	228	7414	0	154
4311	0	1047	5424	53	0	7415	0	27
4312	0	83	6111	4454	10693	7420	0	14
4313	0	524	6112	408	281	7421	0	160
4321	0	109	6113	464	8271	7422	0	52
4322	0	488	6114	0	48640	7424	0	43
4323	97	1578	6115	0	0	7431	0	234
4390	0	0	6121	1084	1221	7441	0	44
4414	0	73	6122	467	0	7490	0	63
4415	0	150	6123	0	72	7511	23	128
4922	45	0	6129	0	85	7512	287	235
5010	108	0	6130	118	104	7514	0	1145
5112	364	1505	6141	0	47	7515	0	622

Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
5113	0	38	6144	0	105	7516	0	118
5114	0	199	6151	0	12	7521	0	186
5115	0	15	6201	0	80	7522	461	0
5120	861	676	6210	0	259	7523	0	27
5131	594	341	6213	0	22	7531	283	552
5132	73	0	6221	73	63	7532	0	38
5141	104	150	6222	3706	32	7533	85	67
5142	0	123	6223	0	1947	7534	0	57
5151	0	406	6224	0	36	7536	51	0
5152	925	526	6300	0	0	7541	0	73
5154	0	0	6310	723	129	8010	73	0
5159	0	0	6313	0	68	8111	467	525
5160	0	378	6320	95	333	8113	0	112
5161	0	16	6330	5617	176	8114	0	105
5162	0	93	6339	0	0	8152	0	904
5163	0	68	6340	92	1183	8153	0	48
5164	0	2542	7111	0	209	8154	0	0
5165	0	57	7112	830	1614	8160	95	238
5169	0	406	7113	0	1141	8172	0	16
5211	1562	8430	7114	0	4218	8183	0	26
5212	77	1156	7115	2929	1281	8189	0	33
5213	0	73	7116	0	39	8211	0	419
5221	1458	2968	7119	0	77	8311	0	141
5223	1930	441	7121	0	1301	8312	0	73
5230	218	0	7122	73	125	8313	0	577
5241	0	117	7123	0	116	8321	567	470
5242	0	12	7124	0	15	8322	4539	5454
5243	0	423	7126	302	156	8323	73	148
5244	0	317	7131	0	38	8331	186	31
5245	0	1787	7212	73	0	8332	1074	1067
5246	0	97	7214	0	54	8341	208	0
5249	0	1194	7215	0	245	8342	0	161
5251	11	0	7218	13	0	8411	71	0
5252	0	30	7221	19	0	8500	73	0
5253	0	117	7231	1396	889	8510	216	0
5271	0	0	7233	111	0	8522	12	0
5293	0	26	7234	10	0	8629	85	0
5311	337	15	7251	37	0	9000	1960	514



Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013	Code	LFS 2010	LFS 2013
5312	14	0	7311	0	11	9101	0	43
5313	0	38	7313	0	95	9111	394	665
5323	0	0	7314	67	0	9112	0	68
5329	0	34	7317	1751	133	9115	63	0
5411	35	598	7318	1260	1494	9121	760	232
5412	2205	1317	7319	903	0	9122	0	97
5413	0	434	7411	418	153	9129	0	813
5414	5887	6071	7412	175	10	9210	0	0
9211	25141	68						
9212	278	16						
9213	45	613						
9216	459	171						
9221	0	32						
9224	92	0						
9250	60	0						
9311	243	181						
9312	1982	173						
9313	3519	815						
9322	96	0						
9333	984	0						
9412	575	553						
9510	0	0						
9520	2379	390						
9612	0	355						
9624	171	183						
9700	54	0						
9820	0	32						
9900	90	0						



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