



Ministry for Higher Education,
Science and Culture
(MESCC)

FDCH



Human Capital Development Fund
(FDCH)

RESULTS OF DATA COLLECTION OF EXISTING HUMAN RESOURCES IN TIMOR-LESTE

LD R H E N
R E P O R T 2 0 1 8



NATIONAL

LD R H E N

DATA COLLECTION OF EXISTING
HUMAN RESOURCES

Result of Data Collection of Existing Human Resources in Timor-Leste

NATIONAL

Fundo do Desenvolvimento do Capital Humano (FDCH)

(Human Capital Development Fund – HCDF)

www.fdch.gov.tl

Council of Administration of Human Capital Development Fund (CA-FDCH)

Former Office of Ministry of Finance, Building #5, 2nd Floor, Government Palace, Dili, Timor-Leste

Email: info@fdch.gov.tl

CONTENT

CONTENT	1
LIST OF TABLES.....	3
LIST OF FIGURE	4
ACKNOWLEDGEMENT	5
MESSAGE FROM THE MINISTER	7
MESSAGE FROM THE EXECUTIVE SECRETARY OF FDCH	10
EXECUTIVE SUMMARY	12
PART A: INTRODUCTION, OBJETIVES AND METHODS.....	18
1. INTRODUCTION, OBJETIVES AND METHODS.....	18
1.1. General Introduction	18
1.2. Objectives	19
1.3. Methodology.....	20
1.4. Statistical Treatment.....	21
PART B: ANALYSIS AND FINDINGS.....	22
2. THE CONTEXT FOR HUMAN RESOURCES ASSESSMENT	22
2.1. Population Dynamics	22
2.2. Employment, unemployment and outside the labor force.....	25
2.3. The Structure of Employment	26
2.4. Employment in the non oil-producing business	31
2.5. The Diversity of Employment of Measures.....	34
3. OVERVIEW HUMAN CAPITAL IN TIMOR LESTE	37
3.1. Presentation and Analysis of data	37
3.2. Profile of Respondents	37
3.3. People with Disability.....	38
3.4. Residential Mobility	40
3.5. Education Level	45
3.6. Vocational Training Certificate Level I – Level IV.....	65
3.7. Professional Occupation in the Public Sector.....	67
3.8. Non – Public Sector (Private Sector)	76
3.9. Numbers and qualification of national and foreign personnel working in Private companies	82
3.10. Other forms of employment (Occupation)	83
3.11. Preferred Areas of Work.....	87
3.12. Graduated to job search “Unemployment”.....	91
3.13. The search for training for personal and Institutional Development	110
3.14. Plan of Training Intended for the future	115
3.15. Population and Foreign Workers	123
4. DEVELOPMENT OF HUMAN RESOURCES WITHIN STRATEGIC DEVELOPMENT PLAN.....	127
4.1. The four pillars of strategic development plan	127
4.2. The current structure of economic activity	127
4.3. Agriculture.....	129
4.4. Constructions	131
4.5. Hospitality and Tourism	132
4.6. Health and Social Work Activities	132
4.7. Quality and relevance to education sector	133

4.8. Accelerating the growth of vocational training	133
4.9. Education and training for older workers	135
4.10. Access for women to the education and training system	135
4.11. Decentralisation	135
PART C: CONCLUTION, RECOMENDATION AND NEXT STEPS	136
5. CONCLUSION AND RECOMENDATION	136
6. NEXT STEPS – THE WAY FORWARD	142
7. BIBLIOGRAPHIC REFERENCES	151

LIST OF TABLES

TABLE 1. POPULATION COVERAGE OF FDCH SURVEY RELATIVE TO 2015 NATIONAL CENSUS	20
TABLE 2. SUMMARY LABOUR FORCE DATA, TIMOR-LESTE, 2010 AND 2015	25
TABLE 3. EMPLOYED POPULATION TEN YEARS AND OVER BY OCCUPATION, 2010 AND 2015.....	28
TABLE 4. EMPLOYED POPULATION TEN YEARS AND OVER BY INDUSTRY, 2010 AND 2015	29
TABLE 5. EMPLOYED POPULATION TEN YEARS AND OVER BY EMPLOYMENT SECTOR, 2010 AND 2015	31
TABLE 6. BUSINESS ACTIVITY EMPLOYMENT, BY LOCATION, INDUSTRY AND GENDER, AND COMPENSATION PER EMPLOYEE, 2010 AND 2015	33
TABLE 7. VARIOUS OFFICIAL MEASURES OF EMPLOYMENT, TIMOR-LESTE.....	35
TABLE 8. PROFILE OF EMPLOYEES SURVEYED BY MUNICIPALITY AND BY GENDER	37
TABLE 9. DISTRIBUTION OF PEOPLE WITH DISABILITY RESPONDENTS BY MUNICIPALITIES	39
TABLE 10. TYPES OF PEOPLE WITH DISABILITY BY MUNICIPALITIES	39
TABLE 11. YEARS OF RESIDENCE AT THE CURRENT LOCATION	43
TABLE 12. DISTRIBUTION OF RESPONDENTS BY LEVEL OF EDUCATION AND BY MUNICIPALITIES BASED ON THE PLACE OF WORK (CURRENTLY RESIDES)	48
TABLE 13. PORTIONS OF THE POPULATION AGED 15 YEARS AND OLDER WHO COMPLETED VARIOUS FORMS OF EDUCATION IN THE SELECTED COUNTRIES IN 2016 OR THE NEAREST YEAR (%).....	51
TABLE 14. CATEGORIZATION OF STUDY AREAS AND GROUPING IN STUDY PROGRAM	53
TABLE 15. RESPONDERS WHO COMPLETED THE CERTIFICATE I - CERTIFICATE IV COURSE	66
TABLE 16. GROUPING AND CLASSIFICATION OF OCCUPATION	85
TABLE 17. NUMBER AND AREA OF KNOWLEDGE OF HIGHER EDUCATION COURSES WHO ARE SEARCH FOR JOBS	91
TABLE 18. DISTRIBUTION OF THE NUMBER OF STUDENTS CURRENTLY ATTENDING COURSES AND PREDICTION OF THE YEAR IN WHICH THE COURSE WILL END.....	99
TABLE 19. PROFESSIONAL DEVELOPMENT COURSE CONDUCTED BY AREA OF STUDY AND COURSE DURATION	110
TABLE 20. LANGUAGE TRAINING AND DURATION OF COURSE.....	114
TABLE 21. TRAINING AREAS OF DESIRED BY NON-EMPLOYED RESPONDENTS.....	118
TABLE 22. TRAINING AREAS OF DESIRED BY EMPLOYEES' RESPONDENTS FOR THE INSTITUTIONAL REINFORCEMENT	119
TABLE 23. TRAINING AREAS RELATED TO ACADEMIC DEGREE	122
TABLE 24. DISTRIBUTION OF THE EDUCATIONAL LEVEL OF FOREIGN WORKERS RESPONDENTS.....	125
TABLE 25. REAL GDP AND VALUE ADDED BY INDUSTRY, 2010-15.....	128

LIST OF FIGURE

FIGURE 1 . POPULATION BY FIVE-YEAR AGE GROUPS, TIMOR-LESTE, 2010 AND 2015	23
FIGURE 2. (A) CHANGE IN POPULATION BY FIVE-YEAR AGE GROUPS, ABSOLUTE CHANGE AND PERCENTAGE CHANGE, TIMOR-LESTE, 2010 AND 2015;	24
FIGURE 3. AGE GROUP OF RESPONDENTS	38
FIGURE 4. LEVEL OF EDUCATION OF PEOPLE WITH DISABILITY RESPONDENTS.....	40
FIGURE 5. RESIDENTIAL MOBILITY	42
FIGURE 6. YEARS OF RESIDENCE IN THE CURRENT LOCATION	44
FIGURE 7. RESIDENCY PLAN FOR THE FUTURE	45
FIGURE 8. LEVEL OF EDUCATION OF RESPONDENTS - ILLITERATE - SECONDARY EDUCATION	46
FIGURE 9. EDUCATION LEVEL OF HIGHER EDUCATION RESPONDENTS	47
FIGURE 10. (A). DISTRIBUTION OF EMPLOYEES BY POSITION AND YEARS OF WORK	68
FIGURE 11. DISTRIBUTION OF PNTL RESPONDENTS BY CATEGORY, POSITION AND YEARS OF WORK	73
FIGURE 12. DISTRIBUTION OF PNTL RESPONDENTS BY CATEGORY, POSITION AND BY DIVISION/UNIT	73
FIGURE 13. DISTRIBUTION OF F-FDTL RESPONDENTS BY CATEGORY, POSITION AND YEARS OF WORK	74
FIGURE 14. DISTRIBUTION OF F-FDTL RESPONDENTS BY CATEGORY, POSITION AND BY DIVISION / UNIT	75
FIGURE 15. DISTRIBUTION OF EDUCATION LEVEL OF THE EFFECTIVE PNTL AND FFDTL RESPONDENTS	76
FIGURE 16. (A) STAFF OF NON-GOVERNMENTAL ORGANIZATIONS (NGOs) BY POSITION	77
FIGURE 17. (A). DISTRIBUTION OF ENTREPRENEURS BY POSITION AND LEVEL OF EDUCATION	80
FIGURE 18. (A). TOTAL NUMBER OF RESPONDENTS SEEKING EMPLOYMENT AND CLAIMING TO WORK IN THE PUBLIC OR PRIVATE SECTOR BY MUNICIPALITIES.....	88
FIGURE 19. PROFESSIONAL DEVELOPMENT COURSES CONDUCTED BY STUDY AREA AND COURSE DURATION	112
FIGURE 20. LANGUAGE TRAINING AND THE DURATION OF THE COURSE	113
FIGURE 21. INSTITUTION PROVIDER LANGUAGE TRAINING.....	114
FIGURE 22. FUNDERS OF LANGUAGE TRAINING.....	115
FIGURE 23. TRAINING CATEGORY - ACADEMIC OR PROFESSIONAL TRAINING	121
FIGURE 24. ACADEMIC DEGREES WHO WISH TO PURSUE	122

ACKNOWLEDGEMENT

First of all, it is necessary to point out that, thanks to the political orientation and vision of the Administration Council of the Human Capital Development Fund (AC-HCDF/CA-FDCH-acronym in Portuguese language) to the staff of the Technical Secretariat of the Human Capital Development Fund (TS-HCDF/ST-FDCH-acronym in Portuguese language) this LDRHE documentation (Data Collection for Existing Human Resources in Timor -Leste).

Through this opportunity we would like to extend our gratitude to:

- To the VI Constitutional Government in the person of SE the Minister of Planning and Strategic Investment (MPIE-official acronym) for the trust that has been deposited with the FDCH team in the realization of this program and to be able to materialize its publication in this VIII Constitutional Government;
- To the Administrators of the 12 Municipalities, including the President of RAEOA - Oecusse as well as the Municipal Directors and Regional Secretaries of RAEOA for the provision of time and provision of necessary resources in the monitoring of data collection and the active participation in the consultation process on the Municipal Powers and of RAEOA held in the month of March to April 2018;
- To Director of VISES (Victoria Institute for Strategic Economic Studies) of Victoria University in Melbourne – Australia, Professor Bruce Rasmussen and Dr Peter Sheehan and Mr Jim Lang for the contribution to assist FDCH in analysis of the raw datas as well as the National Population 2015 data;
- To Academics of all Universities for the contribution and information as well as General Secondary Schools and Vocational Technical Schools throughout Timor-Leste;
- To the youth group, Organization of Women and the people with disability, National NGOs, National and Foreign Enterprises including foreign citizens residing in East Timor for the contribution and information relevant to the realization of this report;

- To the Organization of the Chamber of Commerce and Industry (CCI), organizations and companies of the private sector for the contribution of ideas, data and information necessary for the same purpose;
- To all Timorese from East to West for the contribution and information provided through answers to the questions asked in this questionnaire;
- To the Technical Secretariat of FDCH (ST-FDCH) Team for the effort and excellent work, mutual understanding and good coordination from the beginning of the work begun in September 2016 until April 2018, drawing, compiling, analyzing and preparing the written questionnaire for consultation;
- To the General Director of Statistics (DGE- official acronym) of the Ministry of Finance for all the hard work and technical expertise in leading the team for data cleaning and data analysis;
- To the Ministry of State Administration (MAE) for the guidance of working with the communities, local authorities and all stakeholders in the Municipalities;
- Team of the National Program for Village Development (PNDS – official acronym) to carry out the study together with the enumerators recruited in each village of all municipalities in Timor-Leste;
- To all the enumerators, for the collection of data, the correction and the cleaning of the data team to the 546,555 people represented by 82.7% of the population interviewed in this data collection process, that at the end of the process only 522,979 persons could be used, representing a total of 79 % of the population with 662,285 people over the age of 17 according to the result of the Population Census in 2015;
- Dr Afonso Almeida for his compassion, knowledge and skills contributed to the writing of the report together with the team despite of the challenges in time and information gathered;
- Lastly to the team of translators who have contributed the time and wisdom to translate into three (3) languages, from Tetum to Portuguese and English, thus enabling all people in Timor-Leste including development partners to have access and read the Current Human Resources Data Collection document (LDRHE-official project name).

Thank you.

MESSAGE FROM THE MINISTER



I am grateful for the honor bestowed on me in this report entitled "Data Collection of Existing Human Resources in Timor-Leste". It is a fundamental work where it provides information pertinent to the formulation of the National Strategic Plan for the Development of Human Resources of the Country. It will contribute to know, understand and strengthen the capacity of the Human Capital Development Fund (FDCH) in terms of identifying the existing human resources and try to bridge the gaps through greater awareness of budgeting based on the country's real needs.

Achieving the goals and targets outlined in the Strategic Plan for National Development 2011-2030 requires a commitment from all. It requires forming partnerships, focusing on areas of greatest need, improving the effectiveness of actions. I am convinced that this report will make a significant contribution to our effort to mobilize resources and engage in partnerships and collaboration with all segments of society in order to achieve the objectives set out efficiently and effectively.

The current social and economic environment characterized by increasing globalization and technological advances requires a society composed of competent and qualified individuals capable of responding to the unpredictability of the market, characteristics of changing contexts and innovation.

The pertinence of this report emerges from the relevance attributed to ongoing training and development in the current context of individual institutions or organizations, societies and individuals. It is in this context that FDCH plays a pivotal role in the development of human resources through training and capacity building to help people to acquire and systematically improve the skills and knowledge needed to carry out their professional functions and, consequently, and institutions or organizations to make the most of their human capital.

In this systematic search to optimize human capacity, training and continuous training of human capital emerge as strategies directly related to the construction of techniques and skilled labor, continuously adjusted to the demands of the surrounding contexts. Human resource development (HRD) is an intentional process necessary for people who are professionally active or who wish to enter the labor market to add value in an increasingly sustainable way to the social fabric of work, contributing to the economic, social and institutional or organizational prosperity of the Parents.

In this sense, it is fundamental that public and private institutions, labor market institutions, and the municipal economic and social system, develop strategies for human resource development so that they can manage their workforce in an organized way and in line with their missions and goals.

The data presented in the report indicate that some specialized training areas of existing human resources remain limited, such as agriculture, construction, hospitality and tourism, the private sector, technical and vocational education and training (TVET) and adult education, especially for women, and workplace training.

The integration of these priority areas into a National Human Development Strategy for Timor-Leste will ensure the development of appropriate government policy responses, civil society desires, educational institution programs, and the needs of business and industry work will be well aligned and work together in a coordinated way to increase the capabilities of all human resources.

It is hoped that this report will become an instrument that should be part of everyone's daily life for those who seek to contribute to the training, education and improvement of the different categories of personnel required, by optimizing opportunities within or outside the country and promoting planning of human resources, namely in relation to the needs of the Municipalities and the Country as a whole.

Finally, to promote equity in attention to human resources training, reduce training inequalities, increase the availability of training actions, guaranteeing universal access to the most affected of social inequalities, gender, race, ethnicity, generation, vulnerable are the challenges posed so that the right ceases to be more declarations and becomes part of the daily life of the Timorese.

Dili, December 2018

A blue ink signature, appearing to be "Longuinhos dos Santos", is written over a horizontal line.

Longuinhos dos Santos, M.M.

Minister of Higher Education, Science and Culture (MESCC)

MESSAGE FROM THE EXECUTIVE SECRETARY OF FDCH



In order to assist the Government in implementing the Policy Based Evidence, the Council of Administration of Human Capital Development Fund (CA-FDCH: acronym in Portuguese language) directed to the Technical Secretariat of Human Capital Development Fund (ST-FDCH: acronym in Portuguese language) in May 2016 to conduct a study throughout the country to identify the number of human resources existence in Timor-Leste.

After sufficient preparation with adequate budget and trained staff, ST-FDCH immediately coordinated with the General Directorate of Statistics of the Ministry of Finance and with the joint work team of the Ministry of State Administration (MAE - acronym in Portuguese language) and the National Program for Village Development team (PNDS-acronym in Portuguese language) in the training of the team of enumerators for each village with a minimum of 5 people out of 452 Village (*Suco*) in Timor-Leste.

The process of data collection has undergone several challenges due to the geographical area that must be overcome to remote areas throughout Timor-Leste. Residences distanced from each other crossing mountains, rivers and streams from one village to another. As well as the difficulty the team has faced in collecting data, especially in rainy weather and other challenges. Due to the challenges mentioned, the team took a few months to complete and was finally completed in February to March 2017.

In April 2017, the team began the data cleaning process that took 3 to 4 months and ended in the month of August until September 2017, then the data reconciliation was done by the team together with the General Directorate of Statistics of the Ministry of Finance.

Later ST-FDCH Office began to analyze the data and to prepare the report, as a result of this survey, the office saw that it still needed more information, consulting the Municipalities to know better which potentials exist in each Municipality including RAEOA-Oecusse. And what are the aspirations, ideas or suggestions

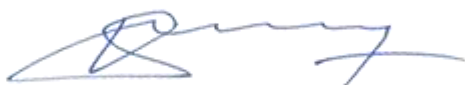
coming from Youth, Women, Disabled People and all stakeholders presented through discussions in groups running through the country. The Program was held from March to April 2018, due to the budget constraints that was only available at the beginning of the fiscal year of 2018, as well as after coordination between the ST-FDCH and PNDS team and the Municipal Authorities and RAEOA-Oe-cusse.

In the end, the report was prepared in Tetum as the official language, and translated into Portuguese as well as English.

Finally, let us hope that the data, information and the analysis developed in this report will be useful in common, as this information will be useful to assist the government, the private sector and all parties such as public, private, civil, police and military organizations. The international development partners they can use for appropriate planning and better implementation in Timor-Leste in achieving the National Strategic Development Plan 2011-2030.

My deep appreciation for the attention, collaboration and teamwork with the goal of developing and strengthening human resources in Timor-Leste for the well being of the people and for the contribution of the stability and prosperity of this noble nation.

Dili, December 2018

A handwritten signature in blue ink, appearing to read 'Isménio Martins da Silva'.

Isménio Martins da Silva

Secretário Executivo do FDCH – MESCC

EXECUTIVE SUMMARY

This report is based on the national human resource survey that similar to human resource census undertaken by the Human Capital Development Fund in Timor-Leste in 2016 (hereafter the FDCH survey), placing it in the context of other data available in Timor-Leste. The analysis undertaken here is a preliminary one only, with some major themes highlighted. It has not been possible to make full use of the richness of this data source, with interviews covering 545,000 adult individuals from 17 years old above. It remains a valuable resource for shaping Timor-Leste's future development strategy.

The foundation for the FDCH survey, and for this analysis is the Timor-Leste Strategic Development Plan 2011-2030 (SDP), and the four pillars around which that Plan is built: Social Capital, Infrastructure, Economic foundations (especially agriculture, tourism and petrochemicals) and the Institutional Framework. Much has already been done by the Timor-Leste Government to build on these pillars, but much remains to be done also. We recognize the major challenges, but also the potential opportunity, arising from the high birth rates and the rapid expansion of Timor-Leste's young population since Independence. This reinforces the importance of investment in human capital.

The central conclusion of this report is that in developing its human capital resources Timor-Leste needs to give greater attention to the economic and social realities of the country, and to the development opportunities identified in the Strategic Development Plan (SDP). This is both in respect of an increased focus of human capital development on priority areas and of a general emphasis, throughout the education and training system, on quality outcomes of relevance to life in Timor-Leste.

The World Bank's 2018 World Development Report (World Bank 2017) highlights the crisis in learning in many developing countries, arising both from the quality and relevance of what happens in schools and other learning centres and from limited entry to, and/or completion rates in schooling. These issues of quality and relevance are critical to Timor-Leste, as it seeks to build its own indigenous

education and innovation systems on the foundations created by two colonial administrations.

According to the results obtained, it is considered pertinent to conclude and recommend the following:

The bet on education should give priority to a technical and vocational training on academic, focusing more on the opening of vocational training centers (or Polytechnic Institutes) to the detriment of the opening of more universities. Complementary to academic training, the creation of specialization courses can increase the employability and professional capacity of those who complete formal education.

It was verified that the set of current human resources in the Social Sciences area has a greater number of qualified people compared to those in the area of Exact Sciences (Engineering and other specialized technical skills).

Based on the data analyzed, we reinforce the need to train other areas where there are notable shortages of qualified human resources: **Exact and Earth Sciences:** Agriculture, Fisheries, Livestock, Geosciences, Botany, Astronomy, Meteorology, Geochemistry, Oceanography and Physical Oceanography.

Health Sciences: Pediatric Specialist, Specialist in Orthopedic Surgery, Legal Medicine and Deontology, Specialist in Gastroenterology Surgery, Specialist in Plastic and Restorative Surgery, Obstetric or Gynecologist Specialist, Dentistry, Specialized Surgery Ophthalmology, Specialist in Pediatric Surgery, Internal Specialist, Optometry, Psychiatry, Specialist in Cardiovascular Surgery, Specialist in Urological Surgery, Speech Therapy and Gerontology.

Biological Sciences: Genetics, Microbiology and Parasitology.

Linguistics, Letters and Arts: Cultural Studies, Theater, Fashion Design (model and designer), Visual Arts, Photographer, Decoration, Dance and Opera.

Engineering: Sanitary Engineering, Biomedical Engineering, Architecture and Urbanism, Topography Engineering and Nuclear Engineering.

Agrarian Sciences: Fisheries and Aquaculture, Agrometeorology, Rural Construction and the Environment, Marine Fisheries, Veterinary Medicine,

Phytopsanitary, Plant Genetics, Forestry, Genetics and Improvement of Domestic Animals, Animal Pathology, Animal Products Inspection, Engineering Food, Grassland and Forage Crops, Animal Husbandry, Rural Extension, Animal Ecology and Ethology, Evaluation, Production and Conservation of Forages, and Pasture Management and Conservation.

Human Sciences: Gender Studies, Library, Systematic Theology, Specific Curricula for Levels and Types of Education, Cinema, Tetanus Language and Educational Planning and Evaluation.

Applied Social Sciences: Regional and Urban Economics, Business Consulting, Demography, Museology and Home Economics.

Specialized Areas: Military career, Mechatronics Engineering, Hospital Administration, Biomedicine, Biotechnology, Actuarial Sciences, Diplomacy, Cartographic Engineering, Armaments Engineering, Textile Engineering and Industrial Chemistry.

The average proportion of national workers compared to foreign workers according to educational levels working in a company is 2 (national workers) versus 1 (foreign worker). The highest proportion is at the level of complete and incomplete secondary education with 3 (national workers) vs 1 (foreign worker).

Most respondents showed a desire to work in the non-public (private) sector than in the public sector. The desire for the private sector was slightly higher among young people aged 17-36 and the preference for work is mainly in the area of agriculture, household chores, industry and construction.

The graduates with the highest number of job seekers, "unemployment", are in the areas of Management, Law, Computer Engineering, Accounting, Civil Engineering - Civil Construction, Mining Engineering, Medicine - Medical Clinic (General Medicine), Mathematics, Human Resource Management, Animal Production (Livestock) and Economics.

These areas are still areas with greater supply and greater number of students attending the Timorese Higher Education Institutions, this may further increase the number of job seekers, "unemployment" in the future.

In view of this situation, it is recommended that the Government and especially the Ministry of Education and Ministry of Higher Education should pay special

attention to higher education institutions and carry out an impact assessment process for its graduates.

To the Timorese Higher Education Institutions the need to reinforce the quality and capacities of its graduates and to adjust courses mainly the curricular contents according to the job market.

A large number of respondents wish to raise their knowledge through training in the area of Languages - Portuguese and English as the official language and working language. Other training areas that are also of greater interest for institutional strengthening and possible insertion in the labor market are the training of teachers and education professionals, Management, Administration and Leadership, Agriculture, Finance, Budget, Accounting and Planning and Professionals of health.

Intensive training, in service and postgraduate (specialization), should be intensified as key elements for the quality of the human resources currently possessing the Secondary and Bachelor's level of education.

To fill out this general conclusion we highlight five key points:

- (i) Education and training opportunities remain limited in some of key areas highlighted by the Strategic Development Plan (SDP), such as agriculture, construction and hospitality and tourism. They should be given greater focus in human capital development:

- **Agriculture** is the heart of the Timor-Leste economy and critical to the welfare of its people. A path of sustainable agricultural development will require greater investment in building innovation and skills in small-scale farms, through many routes: training and technology transfer; a sharp expansion of the number and skills of extension workers; through better education and training for members of rural households, including women; and greater investment in vocational and tertiary education programs, and R&D centres, closely related to the needs of agriculture in Timor-Leste.

- **Construction.** With limited infrastructure inherited from the period of Indonesian rule and the ongoing needs of development, Timor-Leste is facing a major construction task. The industry already accounts for 18% of GDP, but local capacity in construction appears to be limited. There is strong foreign

involvement in the industry and an inadequate number of trained domestic construction workers. Substantial investment in the local construction workforce seems to be necessary.

- **Tourism** remains primarily a future opportunity rather than a current reality for Timor-Leste, but seizing that opportunity will require the development of a trained workforce, from entry-level staff to senior managers, as well as investment in R&D (Research and Development), policy development and planning capabilities.

- (ii) Quality and relevance throughout the school and academic system. The task of reshaping its education system to meet its own needs rather than those perceived by colonial administrators, while also accommodating rapidly rising cohorts of students, will remain a central challenge for Timor-Leste in the decades ahead. Many steps have been taken, consistent with the National Education Strategic plan 2011-30, to achieve both greater relevance and higher quality, such as the great use of Tetun language in education and the redesign of the curriculum to year 9. It is beyond the scope of this report to investigate what specific investments, either in schooling or in tertiary education, would contribute most to meeting this challenge. But it remains fundamental to Timor-Leste's future.
- (iii) Technical and vocational education and training (TVET). The FDCH survey shows a lower level of TVET qualifications than university qualifications in Timor-Leste, and increased investment in expanding the TVET should be a high priority. This expansion should cover technical secondary schools, the polytechnic system and the community based non-formal vocational training system. In doing so it is important that the boundary between academic and technical education remains fluid, with easy articulation between the two areas.
- (iv) Adult education, especially for women, and on-the-job training. In our view these three areas are of considerable importance looking ahead. In particular, the increasing role of women, perhaps especially in agriculture, and at a higher level of skill because of improved training, can contribute to the growth of family and national income, and to more jobs generally.

- (v) Decentralization. According to the FDCH survey, 23% of the population of Timor-Leste lives in Dili, but Dili attracts a high proportion of the nation's intellectual and educational resources. For example, half of all of those with university degrees live in Dili. At the same time, most individuals remain closely attached to their home municipalities, and a substantial proportion of those living away from home intending to return if the opportunity arises. Hence investment both in educational facilities and job opportunities outside the capital will be important, especially in relation to the critical agricultural sector for the country.

PART A: INTRODUCTION, OBJETIVES AND METHODS

1. Introduction, Objectives and Methods

1.1. General Introduction

The Timor-Leste Strategic Development Plan 2011-2030 (Democratic Republic of Timor-Leste 2011) has rightly placed the development of human resource capacity as the country's prime priority. As a result, a key feature of the plan is to seek to transform the Timor-Leste economy, in part through investment in education and health, using revenue from petroleum:

The revenue from the sector can be invested in education and health services for families and in helping farmers to increase their productivity, so that our agriculture sector becomes a leading driver of private sector jobs. This revenue can also help to fund the infrastructure necessary to build a diversified economy and transform our country into a modern nation. (page 9).

To further these objectives, the Government has established the Human Capital Development Fund (HDCH/FDCH) to develop human resources by improving planning management and implementation of various programs. As indicated in the Concept Note provided for this project, FDCH has already undertaken a number of projects to map and evaluate the adequacy of human resources in Timor-Leste, including an initial mapping of human resources in the public sector. It was determined that it is now necessary to extend these projects to 'complete the existing data on human resources through an exhaustive survey across the territory' (Concept Note, p. 3).

As the FDCH survey (undertaken as a HR population census) is an integral part to the preparation of a national Development Strategy for human resources, the requirements of that Strategy are critical for the survey. This human resource strategy seeks an integrated and multifaceted understanding of a range of complex subjects, such as:

- Population demographics, namely current human resources;

- National economy, employment, and strategies of social development and its connections on the municipal, regional and global levels;
- Current and future issues regarding the labour market, including employers and market needs;
- Lack of skills and immigration policies;
- Human development and labour force issues in the public and private sectors;
- Gender issues and their impact on labour;
- The system of vocational education training and skills development; and
- Tertiary education (higher education) system and its ability to generate qualified human resources at all levels. (Concept Note, p. 3)

Thus, to provide a strong knowledge base for the process of developing a national strategy for human resources, the Government has carried out a household-based survey on human resources at a national level (referred to here at the FDCH survey).

1.2. Objectives

The main goal of the survey is to identify and analyse the current situation of Timor-Leste's human resources and their distribution through the territory. The specific goals, arising from the main goal, are as follows:

- Complement the Mapping data through a comprehensive survey of human resources per household and promote an efficient FDCH funding allocation to human resources development programmes in priority areas over the upcoming years;
- Describe the current situation of human resources in each villages, Sub-District Administration, and Municipality;
- Verify the existence of a rational distribution of the existing human resources in the country;
- Report the number of graduates or staff search for work or unemployed;
- Describe the impact of foreign human resources on the national labour market;
- Identify strategic occupations and strategic fields for training;
- Promote human resources planning, namely regarding the country's needs;

- Contribute to the training and improvement of different categories of personnel required, through the optimization of opportunities inside and outside the country; and
- Reinforce cooperation between the public and private sector and professional associations. (Concept Note, pp. 4-5).

1.3. Methodology

The FDCH survey is undertaken as a population census, with data collected as far as possible on all of the resident population of Timor-Leste of 17 years of age or older. Data was collected in relation to 545,557 representing 82.4% of identified individuals 17 years old or more in the 2015 population census across all municipalities (see Table 1).

Table1. Population coverage of FDCH Survey relative to 2015 National Census

Municipalities	Total Population with ≥ 17 Years old (according to census 2015)	Number population with ≥ 17 Years old Interviewed
Aileu	27,129	22,825
Ainaro	32,119	25,917
Baucau	68,390	51,161
Bobonaro	53,497	57,576
Covalima	36,825	30,992
Dili	171,432	126,034
Ermera	65,854	53,030
Lautem	33,479	24,733
Liquica	40,359	33,297
Manatuto	25,484	21,444
Manufahi	29,600	28,580
Oe-cusse	36,994	34,918
Viqueque	41,123	35,050
Total	662,285	545,557
Interviewees as a share of 2015 Census population (%) (%)		82.4

Source: Census Population and Housing 2015 (Statistics Timor Leste 2016b).

The data were collected by filling in a set questionnaire and by interview. The data collection took place from 5 September to 5 of November 2016. Documentary sources were used as appropriate to support the data collection and initial analysis.

The population census is the only source of information on the population's living conditions in the municipalities and villages. The census generates indispensable information for the definition of the state's public policies at the municipal level,

and for decision-making regarding investment, whether it comes from the private sector or from any government level.

The primary data collected based on the instruments answered by the respondents were tabulated and analyzed statistically, as well as the secondary data collected from the documentation analysis.

In order to analyse the collected data and the presented results, they were grouped into categories, thus enabling listing of the main analysed items, and allowing the attainment of the objectives outlined for this work. A descriptive statistic of the main responses obtained through data collection was performed. Based on the survey, the categories were classified according to the simple frequency of their occurrences.

The presentation of the results obtained through the field research in Part D was structured in didactic and specific way. In it, the questions of the questionnaire are cited, followed by their respective results, presented graphically.

The research in question is considered as an applied research, since it aims to contribute to practical purposes, with the purpose of assisting in the solution of concrete problems identified in the defined and specific space highlighted in this work.

In the initial analysis of the implications of the FDCH survey results presented in Parts B and C of this report, the new data is presented in the context of existing data (e.g. from the national Census (Statistics Timor-Leste 2016b) and the Business Activity Survey of Timor-Leste 2015 (Statistics Timor-Leste 2016a) which it complements.

1.4. Statistical Treatment

In a subsequent step, the tabulated data were reordered and grouped according to the survey data, and a qualitative analysis was then carried out to quantify the frequency of responses to the collected data. The data processing was done in CS Pro and Excel for Windows.

PART B: ANALYSIS AND FINDINGS

This part of the report, which sets out to analyse the results of the FDCH survey and other relevant data and to draw out their implications for the development of human resource strategy in Timor-Leste, proceeds in terms of four sections.

Section 2 summarises the broader context for human resource strategy decision, as revealed primarily in recent Census data. This section reviews Timor-Leste's population dynamics, the nature of the population's involvement with the labour market and the structure of employment, by occupation, industry and sector of employment.

Section 3 draws primarily on the FDCH survey to review the current situation with human capital in Timor-Leste, in several dimensions, as a foundation for the development of a human resource strategy.

Section 4 starts from the four pillars of the National Development Strategy (Republic Democratic of Timor-Leste 2011), and from an analysis of the structure of real GDP by industry, to provide an assessment of the data findings for specific elements of Timor-Leste's human resource strategy.

Part C, Section 5, provides conclusions, recommendations and next steps.

2. The Context For Human Resources Assessment

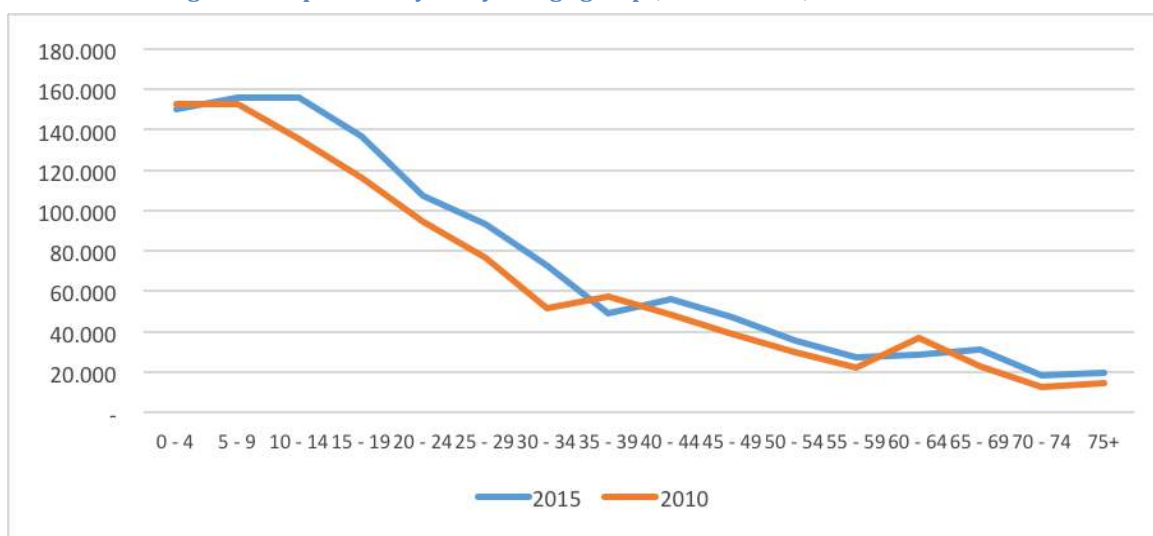
This section considers the broad context in which human resource assessment and the development of plans to strengthen these resources in Timor-Leste must take place.

2.1. Population Dynamics

It is well known that Timor-Leste has a very young population, with a high dependency ratio¹ relative to other comparable countries in its region. This reflects a high birth rate since Timor-Leste became independent in 2002. But several other aspects of the country's population dynamics are quite complex, in ways that are relevant to the issues at hand.

¹ Defined as the ratio of the population younger than 15 years and 65 years and over to the population 15–64 years of age.

Figure 1 . Population by five-year age groups, Timor-Leste, 2010 and 2015



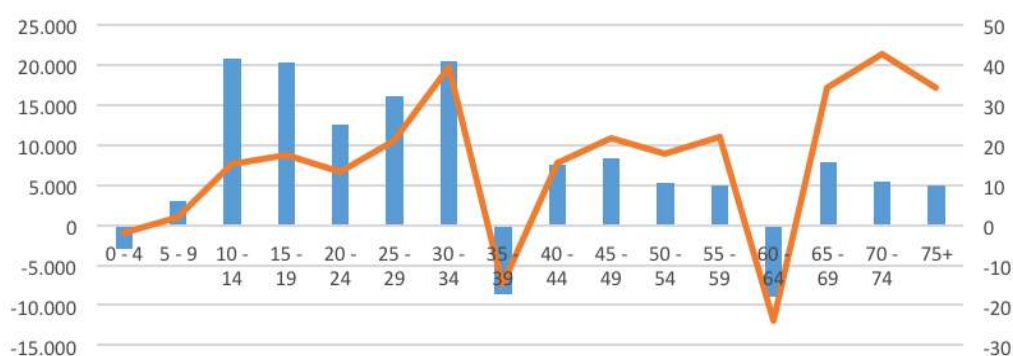
Source: Census Population and Housing 2015 (Statistics Timor Leste 2016b).

The age-specific population data shown in Figure 1 are derived from the 2015 Census, and similar results are evident for 2016 from the FDCH Survey, although that instrument provides data only for persons 17 years and over.

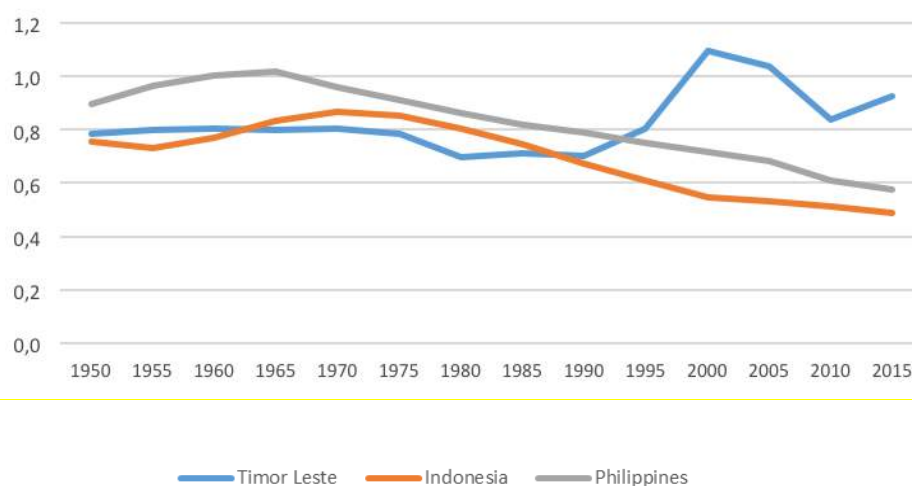
The data illustrates several relevant features. The age distribution curve has a very steep slope, with population numbers in the three younger cohorts (0-4, 5-9 and 10-14 years) each being three times more than those in the cohorts from 35 to 39 years on. This means rapid population growth in successive age-groups as these cohorts get older. Reflecting a stabilization in birth rates in recent years, there has been no significant increase in the population under 10 years of age between 2010 and 2015. This suggests that we are seeing a stabilization of the under 10 population, but at a much higher level than in earlier years. For all age-groups from 10-14 years to 30-34 years there is a strong increase in population between the two Census years, as well as much higher numbers in the young cohorts. These increases are shown, in both absolute terms and in percentage changes, in Figure 2(a). By contrast with the younger age groups, there were absolute falls in population over 2010-15 in two age groups – 35-39 years and 60-64 years – reflecting low cohorts coming through from the early to late 1940s and from the first half of the 1980s. It is also notable that, while the numbers are small, Timor-Leste is starting to see strong growth in older persons – the number of persons aged 65 years and over increased by 36% over the period.

Thus, Timor-Leste faces very substantial increases in the number of persons entering post-secondary education and training, and the labour force in the coming decade or more. These are the cohorts that in the past decade have led to a massive increase in school enrolments, and will be increasingly looking for training and for job opportunities. On the other hand, the fact that there was no overall increase in the number of persons under 10 years between 2010 and 2015 suggests that this population surge is coming to an end, but it will nevertheless shape the context of Timor-Leste for decades to come.

Figure 2. (a) Change in population by five-year age groups, absolute change and percentage change, Timor-Leste, 2010 and 2015; (b) Dependency ratios, Timor-Leste, Indonesia and the Philippines, 1950 to 2015



Source: (a) Census Population and Housing 2015 (Statistics Timor Leste 2016b).



Source: (b) UN Population Division (2015).

Figure 2(b) shows the dependency ratios (the ratio of the population younger than 15 years and 65 years and over, to the population 15-64 years of age) from 1950 to 2015, for Timor-Leste and for two neighbouring countries, Indonesia and the Philippines. The chart shows how Timor-Leste's dependency ratio surged after

1990, reaching a peak of 1.1 in 2000. It has remained at a high level since then, and at 0.92 in 2015, was well above the ratios of the Philippines (0.58) and Indonesia (0.49) in that year. Both of these countries reached their peak post-1950 ratios many decades ago (the Philippines at 1.02 in 1965 and Indonesia at 0.87 in 1970), and their ratios have consistently declined since then. While the Timor-Leste ratio will decline over time towards the ratios for the other countries, especially if the stabilisation of the birth rate continues, this will take place over several decades. In the meantime, a high ratio of dependent age population to the population of working age will continue to be a key feature of life in Timor-Leste.

2.2. Employment, unemployment and outside the labor force

Over the past five years or so, Timor-Leste has been successful in providing employment for a rapidly growing population 15 years and over, although this success has varied across different segments of the labour force. Table 2 provides a summary of the key labour force aggregates drawn from the national Census for the years of 2010 and 2015. (For a discussion of different concepts of employment see Sections 4.4 and 4.5 below). With the 15+ population growing at 3.2% per annum over that period, the number of employed persons grew by 4.8% and recorded unemployment fell substantially, with the number of persons economically inactive rising at a slower rate (2.8%) than the population as a whole (that is, the aggregate participation rate rose).

Table 2. Summary labour force data, Timor-Leste, 2010 and 2015

	Total Population	Employees	Unemployed	Economically inactive
Persons 5 years and over				
2010	613,782	302,996	31,928	278,858
2015	717,553	383,331	19,333	314,889
Change (% pa)	3.2	4.8	-9.5	2.5
Male 15 years and over				
2010	305,489	204,561	19,887	81,041
2015	360,217	225,304	12,388	122,525
Change (% pa)	3.4	2.0	-9.0	8.6
Female 15 years and over				
2010	302,033	98,435	12,041	191,557
2015	357,336	158,027	6,945	192,364
Change (% pa)	3.4	9.9	-10.4	0.1

Source: Census Population and Housing 2015 (Statistics Timor Leste 2016b).

It is particularly notable that, while the rate of population growth for those over 15 years was the same for males and females, employment of women grew much more rapidly (9.9% pa) than that of men (2.0% pa). Unemployment fell by 9% for both groups, so that the sharp difference in employment growth was reflected in corresponding changes in those not in the labour force. In spite of rapid population growth, the number of women outside the labour force was unchanged between 2010 and 2015. Female participation rates rose, for age groups from 25-29 years on, by nearly 20 percentage points, from less than 40% to close to 60%. This implies a remarkable entry of mature age women into work over a short period of time, with all of the increase in the female population finding employment the nature of that employment remains an issue. For men, the economically inactive population increased by about 50%, but most of the increase was at the younger end, in men younger than 30 years. This may reflect increasing involvement in education, but also the rapid growth in population in these younger age groups. It is likely that there is substantial disguised unemployment among young men, whose inability to find a job is reflected in withdrawal from the labour force rather than actively seeking work.

Most of this surge in female employment was in rural areas, where the employment of women jumped by 65% over the five years. This entry of mature aged women into employment is a major feature of development in Timor-Leste, which needs to be given serious consideration in terms of human resource strategy.

2.3. The Structure of Employment

This section shows information on the structure of employment in Timor-Leste, detailing three aspects: occupation, industry and sector of employment. The data are drawn from the Census for 2010 and 2015 and, where necessary, adjustments have been made to the 2010 data to align categories as far as possible between the two years.

Table 3 shows a summary of employment by occupation, and highlights three points in particular. First, in 2015 East Timor had a high share of employment

(11.7%) in the legislator, senior officials, managers, professionals and technicians categories, and this group rose by 18.6% per annum over the five-year period. Secondly, the substantial majority of employment is in the skilled agricultural and fishery workers category, which accounted for just on 60% of total employment in 2015 and grew by 3.5% per annum over the period. As other data discussed below indicates, most of these agricultural workers are skilled through learning by doing rather than through formal qualifications. Thirdly, outside these two groups, and hence in the less skilled non-agricultural sector, the main occupation reported is 'service and sales workers in shops and markets'. In 2015, 14.8% of those employed were working in this occupation, in which employment grew by a rapid 8.4% per annum over 2010-15. Excluding rapid growth in the armed forces, employment in all other occupations fell, by nearly 4% per year.

These data show a picture of a highly segmented labour force by occupation, with four main segments. About 60% of employment is in agricultural occupations, and growing quite strongly; about 12% of employment is in professional, managerial and technical occupations, where it is growing very strongly; employment in service and sales occupations (about 15% of employment in 2015) is rising strongly, while employment in all other occupations is falling. Thus outside agriculture, the main occupations showing strong growth are the skilled professional and managerial occupations and the less skilled sales and service occupations. Given the fact that real GDP in agriculture showed no growth over 2010-15 (see Section 4.2 below), and hence that productivity fell, the rapid growth in employment in agricultural occupations is likely to be supply driven (such as family helpers), rather than driven by risen demand for workers to support increasing production levels.

Table3. Employed population ten years and over by occupation, 2010 and 2015

Occupation	Total employment 2015	Total employment 2010	Change (% pa) 2010-15
Total	388,952	311,320	4.6
Representatives of the legislative and executive bodies, directors, directors and executive managers	14,206	7,753	12.9
Specialists in intellectual and scientific activities	22,050	6,622	27.2
Middle level technicians and professions	9,391	5,085	13.1
Administrative staff	10,124	17,561	-10.4
Workers of personal services, protection and security and trade sellers in shops and markets	57,621	38,442	8.4
Farmers and skilled workers in agriculture, fishing and forestry	233,117	196,391	3.5
skilled industrial workers, construction and craftsmen	13,677	13,804	-0.2
Operators of assembly plant and machinery and workers	8,065	8,715	-1.5
Unskilled workers	11,970	12,863	-1.4
Professionals of the armed forces	6,432	793	52
Other (not elsewhere classified)	2,299	3,291	-6.9

Source: Census Population and Housing 2015 (Statistics Timor Leste 2016b).

The data in Table 4 provide another lens on the structure and growth of employment in Timor-Leste, that of the industry classification. Again the dominant feature is employment in agricultural occupations (including hunting, forestry and fishing), which accounted for 60% of employment in 2015, after growth of 3.5% per annum. Most of the growth in the occupations was in female employment, which grew by 5.5% per annum, by contrast with little growth in male employment in the industry. Employment growth in secondary industry was modest, at 1.1%, although manufacturing employment grew by 3.4% per annum, but from a very small base. Surprisingly, construction employment fell (by 0.6% per annum) in spite of other evidence of strong growth in the construction sector.

This is not consistent with other data on construction employment, discussed below.

As is to be expected, the main areas of growth were in the tertiary or service industries, with overall growth of 9.9% per annum (5.5% for men and 17.8% for women), and by 2015 these industries provided 36.3% of total employment in Timor-Leste). Three main industries stand out. One is wholesale and retail trade, defined to include motor vehicle repair), which provided 5.6% of employment in 2015 after growth of 8.1% over 2010-15, with most of the growth being for women. The second is public administration and defence (9.5% of the total in 2015) after growth of 5.6% over 2010-15, with about three quarters of employees male. The third is employment with a private household, which is 90% women and which has increased nearly sevenfold since 2010, with a compound growth rate of 45.4%. Employment in all other services has also risen rapidly.

Table 4. Employed population ten years and over by industry, 2010 and 2015

Industry	Total			Male			Female		
	2015	2010	Change (% pa)	2015	2010	Change (% pa)	2015	2010	Change (% pa)
Total	388,952	311,320	4.6	228,389	209,419	1.7	160,563	101,901	9.5
PRIMARY	232,342	208,551	2.2	142,001	139,356	0.4	90,341	69,195	5.5
Agriculture Hunting, Forestry and Fishing	231,889	207,313	2.3	141,647	138,305	0.5	90,242	69,009	5.5
Mines and Quarrying	453	1,238	-18.2	354	1,052	-19.6	99	186	-11.8
SECONDARY	15,401	14,589	1.1	11,213	11,048	0.3	4,188	3,541	3.4
Manufacturing	6,877	5,819	3.4	3,432	3,161	1.7	3,445	2,659	5.3
Electricity, Gas, Steam and Water Supply	406	383	1.2	382	356	1.4	24	27	-2.4
Construction	8,118	8,387	-0.6	7,399	7,532	-0.4	719	855	-3.4
TERTIARY	141,209	88,180	9.9	75,175	59,014	5	66,034	29,166	17.8
Wholesale & Retail Trade & Repair of Motor Vehicles	21,794	14,784	8.1	10,214	8,747	3.1	11,580	6,037	13.9
Accommodation and Food Service Activities	1,532	2,274	-7.6	475	750	-8.7	1,057	1,524	-7.1

	Total			Male			Female		
Transport, Storage and Communications	9,086	8,111	2.3	8,507	7,486	2.6	579	625	-1.5
Public Administration and Defense	36,921	28,050	5.6	27,004	20,617	5.5	9,917	7,433	5.9
Education	12,823	10,484	4.1	7,782	6,579	3.4	5,041	3,905	5.2
Other Services (Personal, Household and Vehicle)	3,009	5,597	-11.7	980	3,645	-23.1	2,029	1,952	0.8
Private household with employed person	28,254	4,344	45.4	2,667	603	34.6	25,587	3,741	46.9
All other services	27,790	14,535	13.8	17,546	10,586	10.6	10,244	3,948	21

Source: Census Population and Housing 2015 (Statistics Timor Leste 2016b).

The final dimension is that of employment by sector. In some respects, the data from the national census for 2010 and 2015 are difficult to interpret, primarily because of an apparent change in classification of privately owned businesses and farmers between the two years. The data are presented in summary form in Table 5. The 2015 census indicates four main sectors of employment: the public sector, private businesses, self-employed farmers and self-employed non-farmers. Of these, the dominant sector is self-employed farmers, which accounted for 64.2% of total employment in 2015. Government, including state-owned enterprises, was the next largest employer in 2015, with 16.9% of the total, after growth of 6.1% over 2010-15. Employment in privately-owned businesses remains small, at less than 5% of total employment. Finally, the data indicate a strong rise in the number of self-employed persons outside the farm sector, with growth of nearly 30% per annum to account for 10.5% of employment in 2015. This category typically covers a wide range of employment situations, from innovative start-up businesses to desperate attempts to earn a survival income.

Employment in private enterprises remains small, at less than 5% of total employment. Finally, the data indicate a strong increase in the number of self-employed outside the agricultural sector, with growth of almost 30% per year to represent 10.5% of employment by 2015. This category typically covers a wide

range of employment situations, ranging from innovative breakthrough businesses to desperate attempts to earn a living income.

Table 5. Employed population ten years and over by employment sector, 2010 and 2015

	2015	2010	Change (% pa)
Total Employment	388,952	308129	4.8
Government	52,647	47086	2.3
State-owned enterprise (e.g. TVTL, EDTL)	13,144	1938	46.6
Privately own business or farm	18,752	109138	-29.7
Self-employed farmer	249,873	127320	14.4
Self-employed non farmer	40,789	11215	29.5
Non-governmental or non-profit organizations	5,188	4970	0.9
Embassies and bilateral institutions	687	1523	-14.7
United Nations and specialized international organizations	481	1490	-20.2
Others	7,391	3449	16.5
Government plus public companies	65,791	49,024	6.1
Private company or farmer more farms of state-owned enterprises	268,625	236,457	2.6
Non-farm self-employed worker	40,789	11,215	29.5
Others	13,747	11432	3.8
Total employment	388,952	308,129	4.8

Source: Census Population and Housing 2015 (Statistics Timor Leste 2016b).

2.4. Employment in the non oil-producing business

The employment data in the section above are all drawn from the Census undertaken in 2010 and 2015. In respect of the labour force, the censuses follow the standard international conventions in the definition of employment and unemployment. A person is employed if they worked for at least one hour for pay, profit or family gain or was absent from work but had a job, farm or business. This means that employment is widely defined, both in sectors of the economy covered and in terms of the activities that are counted as employment, and hence includes both formal and informal employment, as discussed below. Two other surveys

related to employment are available in Timor-Leste – the annual Business Activity Surveys undertaken from 2010-15 and two Labour Force Surveys in 2010 and 2015 (Statistics Timor-Leste 2010, 2013, 2016^a).

The Business Activity Survey (BAS) addresses private financial and non-financial businesses (excluding oil and agricultural production) plus public and not-for-profit businesses that earn more than 50% of their income from trading activities. It thus excludes general government and most public enterprises, agriculture, self-employment and many forms of informal employment. A detailed specification of the coverage of the BAS is provided in Box 1. It is a valuable measure of ‘formal’ employment in the private and market-exposed public sector, and the survey provides data on other variables other than employment in this sector.

Box 1 Coverage of the Business Activities Survey

The scope includes businesses whose primary income is generated from the following activities:

- Private non-financial business (excluding agricultural production);
- Private financial business;
- Non-financial and financial public business where more than 50% of their revenues were generated by trading activities;
- Non-profit institutions that earn more than 50% of their revenues from trading activities.

Public trading enterprise where a majority of their income (more than 50 %) was generated from the direct provision of services was also in-scope of BAS.

The scope excludes the following types of business:

- The petroleum producing businesses that submit taxes through the National Directorate of Petroleum Revenue;
- General government agencies (such as administration, education and health);
- Public trade enterprise, where the majority of their income was received from government transfers or payments;
- Non-business or non-trading enterprises (such as embassies and missions);
- The informal sector of the economy, including:
 - Subsistence agricultural production;
 - Piecemeal and informal manufacturing;
 - Street Vendors.

As shows in Table 6, total business activity employment in Timor-Leste in 2015 was 63,300, only about 16% of total employment as shown in the Census, using the broader definition and coverage of employment. This highlights again that formal

jobs in the business sector, as defined in this survey, remain a small part of total employment in Timor-Leste. While these jobs are important, human capital development strategy must give attention to other aspects of the way in which citizens are involved with the world of work.

Table 6. Business activity employment, by location, industry and gender, and compensation per employee, 2010 and 2015

	Total			Male			Female		
	2015	2010	Change (% pa)	2015	2010	Change (% pa)	2015	2010	Change (% pa)
Location									
Dili	52,000	39,100	5.9	39,100	26,700	7.9	12,900	12,400	0.8
Municipalities	10,600	7,200	8.0	8,400	5,600	8.4	2,200	1,600	6.6
Total	63,300	46,400	6.4	48,000	32,400	8.2	15,300	14,000	1.8
Industry									
Manufacturing	2,900	2,500	3.0	2,300	2,000	2.8	600	500	3.7
Construction	21,300	10,000	16.3	19,000	8,200	18.3	2,300	1,800	5.0
Retail and wholesaling	17,900	12,700	7.1	12,500	8,000	9.3	5,400	4,700	2.8
Transport and storage	1,100	900	4.1	900	800	2.4	200	100	14.9
Accommodation and food services	5,300	6,200	-3.1	2,200	2,000	1.9	3,100	4,200	-5.9
Financial and Insurance	700	600	3.1	400	400	0.0	300	200	8.4
Other industry	14,100	14,400	-0.4	10,700	11,800	-1.9	3,400	2,600	5.5
Total	63,300	47,300	6.0	48,000	33,200	7.7	15,300	14,100	1.6
Compensation per employee (US\$)									
Dili	3,080	2,278	6.2						
Municipalities	1,364	1,027	5.8						
Total	2,775	2,775	0.0						

Source: Business Activity Survey (Statistics Timor-Leste 2016a).

Several other characteristics of employment in commercial activity are notable:

- It is heavily concentrated in Dili, with employment of 52,000 or 82% of the total located in the capital. By contrast only 23.4% of the population lives in Dili.
- While small, the level of business activity employment is growing strongly, both in and outside Dili. Over 2010-15 the average annual rate of growth was 6.4%, with a higher rate of growth (8.0%) in other municipalities than in Dili (5.9%).
- This form of employment is heavily concentrated in males, with men holding 48,000 jobs in 2015, 76% of the total. This predominance of men is more pronounced outside Dili, with men holding 79% of these jobs in other municipalities.
- Thus business activity employment is heavily concentrated in males in Dili, with 62% of the national total of these jobs being held by men living in Dili. This concentration on men in Dili has intensified over 2010-15, with growth in this category of employment of 7.9% per annum as against all other growth of 4.2% per annum.
- Judged by compensation per employee, the jobs in Dili are better paid, with average compensation being more than twice as high in Dili (US\$3080) than in other municipalities (US\$1364).

The BAS provides information on other economic variables, including value added. Total value added generated by this sector in 2015 was US\$618.3, which was 20% of total GDP or 38.5% of non-oil GDP. This confirms that the sector covered by the BAS is an important part of, but not by any means the whole of, the Timor-Leste economy.

2.5. The Diversity of Employment of Measures

In concluding this section, it is useful to compare the results of the three official surveys in Timor-Leste that provide data on aspects of employment. Two have been discussed above (the Census and the BAS survey), and the third is the Labour Force Survey (LFS), which was carried out in 2010 and 2013 (Statistics Timor-

Leste 2010, 2013). The LFS follows the Census in applying the standard international conventions in relation to employment, except that in 2013 the LFS followed a resolution of an ILO conference in Geneva in 2013 which narrowed the concept of employment to being a subset of those doing some work. Specifically the ILO resolution defined employment as follows:

People 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. (Statistics Timor-Leste 2013, p. 41).

Defining employment as work undertaken for others for pay or profit is an important step for Timor-Leste statistics, given the importance for the country of subsistence food producers, which LFS 2013 estimated at 178,900.

Table 7. Various official measures of employment, Timor-Leste

Source Survey	Employment Level (number)	Comments
Census of population and housing 2015: employment	388,592	Broad definition of employment; whole economy.
Labour force Survey 2013		
Employment	213,200	New ILO (2013) definition: excludes producers of subsistence food.
Subsistence food producers	178,900	
Total	392,100	Total
Business Activity Survey 2015: Employment	63,300	Limited commercial sectors and therefore excluding other forms of employment.

In spite of differences in timing and methodology, and of the inevitable survey error, the three measures give a clear overall picture of the composition of work in Timor-Leste. There are three main components of this composition:

- Those employed with firms or public trading enterprises in the business activity sector, amounting to about 63,000 in 2015;
- Other working in other sectors for pay or profit, including government, the informal sector and NGOs, amounting to about 150,000 in 2013; and
- Subsistence food producers, estimated at about 180,000 in 2013.

These three components are consistent with the overall Census figure for employment in 2015 of about 390,000, and each of the three are relevant to the consideration of human capital development in Timor-Leste.

3. OVERVIEW HUMAN CAPITAL IN TIMOR LESTE

3.1. Presentation and Analysis of data

This section provides a brief review of data on the existing level and distribution of human capital in Timor-Leste, again to provide a basis for human resource strategy decisions. The main source of information here is the FDCH survey.

3.2. Profile of Respondents

The first part of the collection tool traced the profile of the respondents and, as shown below, the results were represented in percentage tables.

Parallel to the graphical presentation of these results an analysis of the obtained data is made, aiming to reach the objectives already listed initially.

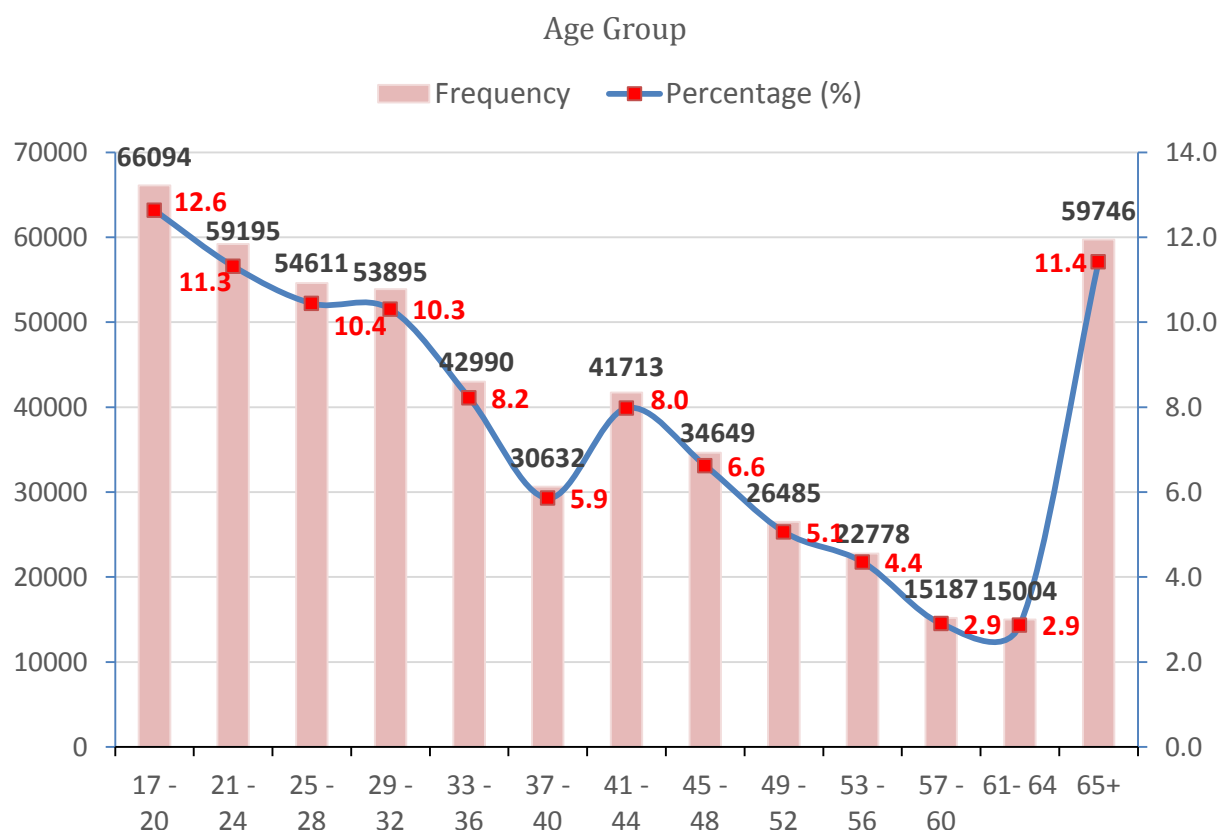
Table 8 shows the profile of the collaborators surveyed at the national level, revealing that 51% of them are female and 49% are male. The other aspects of the profile are shown in the chart below.

Table 8. Profile of employees surveyed by Municipality and by Gender

Municipalities	Male		Female		Total
	Frequency	Percentage (%)	Frequency	Percentage (%)	
AILEU	11,651	51,0	11,174	49,0	22,825
AINARO	12,600	48,6	13,317	51,4	25,917
BAUCAU	24,911	48,7	26,250	51,3	51,161
BOBONARO	27,363	47,5	30,213	52,5	57,576
COVALIMA	14,227	48,0	15,424	52,0	29,651
DILI	55,456	50,5	54,425	49,5	109,881
ERMERA	25,162	49,9	25,268	50,1	50,430
LAUTÉM	11,200	45,3	13,533	54,7	24,733
LIQUIÇA	16,233	49,1	16,828	50,9	33,061
MANATUTO	10,517	49,0	10,927	51,0	21,444
MANUFAHI	13,141	49,9	13,191	50,1	26,332
REGIÃO ESPECIAL ADMINISTRATIVA DE OECUSSE	16,815	48,2	18,103	51,8	34,918
VIQUEQUE	16,739	47,8	18,311	52,2	35,050
TIMOR-LESTE	256,015	49,0	266,964	51,0	522,979

The majority were aged between 17 and 32 years, representing 44.6%, followed by the age group of 33 to 48 years, with 28.7% of respondents. The age group of 49-64 years was 15.3% and 11.4% were over 65 years old (Figure 3).

Figure 3. Age group of respondents



3.3. People with Disability

Table 9 shows the distribution of people with disability assessment at the national level. It is verified that in the evaluation of the existence of people with disability 10,242 respondents corresponding to 2% of the total of the respondents thus distributed:

Table 9. Distribution of people with disability respondents by Municipalities

Municipalities	Frequency	Percentage (%)
AILEU	567	5,5
AINARO	500	4,9
BAUCAU	2,030	19,8
BOBONARO	858	8,4
COVALIMA	626	6,1
DILI	1,188	11,6
ERMERA	1,082	10,6
LAUTÉM	345	3,4
LIQUIÇA	749	7,3
MANATUTO	470	4,6
MANUFAHI	524	5,1
OECUSSE	500	4,9
VIQUEQUE	803	7,8
Total	10,242	100%

The level of people with disability of the active age respondent population varies significantly across the country, from 3.4% in Lautem to a maximum of 19.8% in Baucau, with an average of 7.7%. The main difficulties are related to physical mobility and vision, but there is a significant level of mental and hearing people with disability (Table 10). Respondents report that only about 20% of disabilities were from birth, with most acquired later in life.

Table 10. Types of people with disability by Municipalities

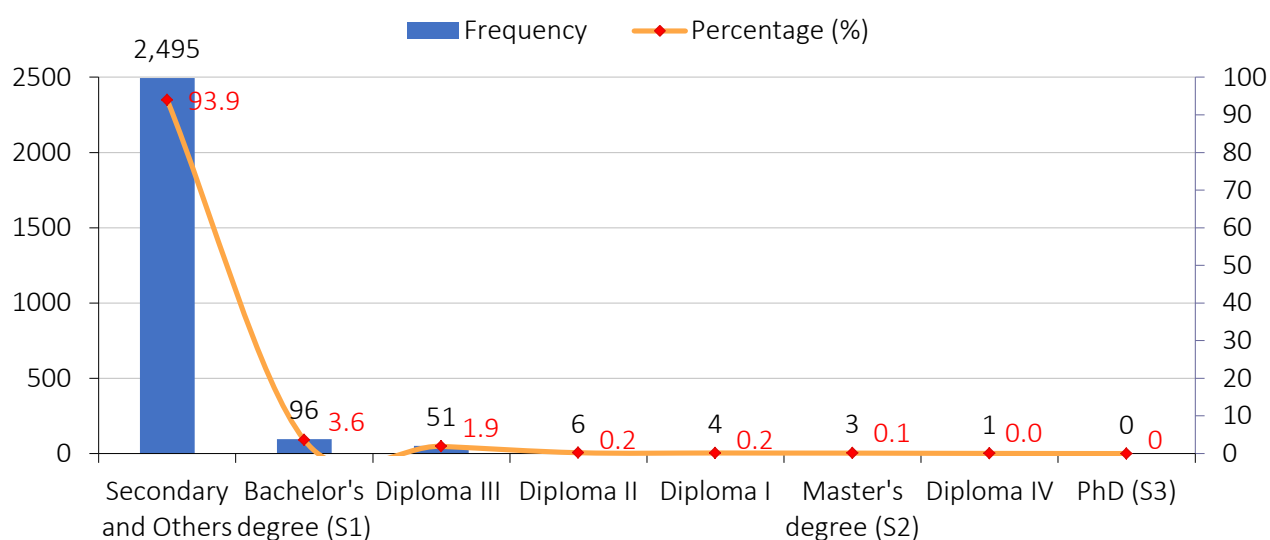
Municipalities	Type of people with disability					Total
	Physics or Mobility	View	Deaf / Mute	Psychosocial / Mental	Cognitive / intellectual	
AILEU	173	191	106	95	2	567
AINARO	238	100	81	71	10	500
BAUCAU	819	788	194	208	21	2,030
BOBONARO	255	271	137	174	21	858
COVALIMA	215	196	92	114	9	626
DILI	445	394	176	157	16	1188
ERMERA	525	256	129	154	18	1082
LAUTÉM	152	74	57	55	7	345
LIQUIÇA	348	147	102	139	13	749
MANATUTO	185	150	55	78	2	470

Municipalities	Type of people with disability					Total
	Physics or Mobility	View	Deaf / Mute	Psychosocial / Mental	Cognitive / intellectual	
MANUFAHI	260	99	83	79	3	524
OECUSSE	157	202	80	58	3	500
VIQUEQUE	332	226	95	141	9	803
TIMOR-LESTE	4,104	3,094	1,387	1,523	134	10,242
Percentage (%)	40,1	30,2	13,5	14,9	1,3	100 %

Among the total number of people with disability respondents, only 27.6% received some government support or subsidy, and the remaining 72.4% did not receive any support.

The analysis of the distribution of the people with disability according to the level of education still shows a high number of secondary level. These represent 93.3%, followed by the Bachelor's degree with 3.6%, three years diploma or diploma III courses with 1.9% and other courses with a lower percentage of 1% (Figure 4).

Figure 4. Level of education of people with disability respondents



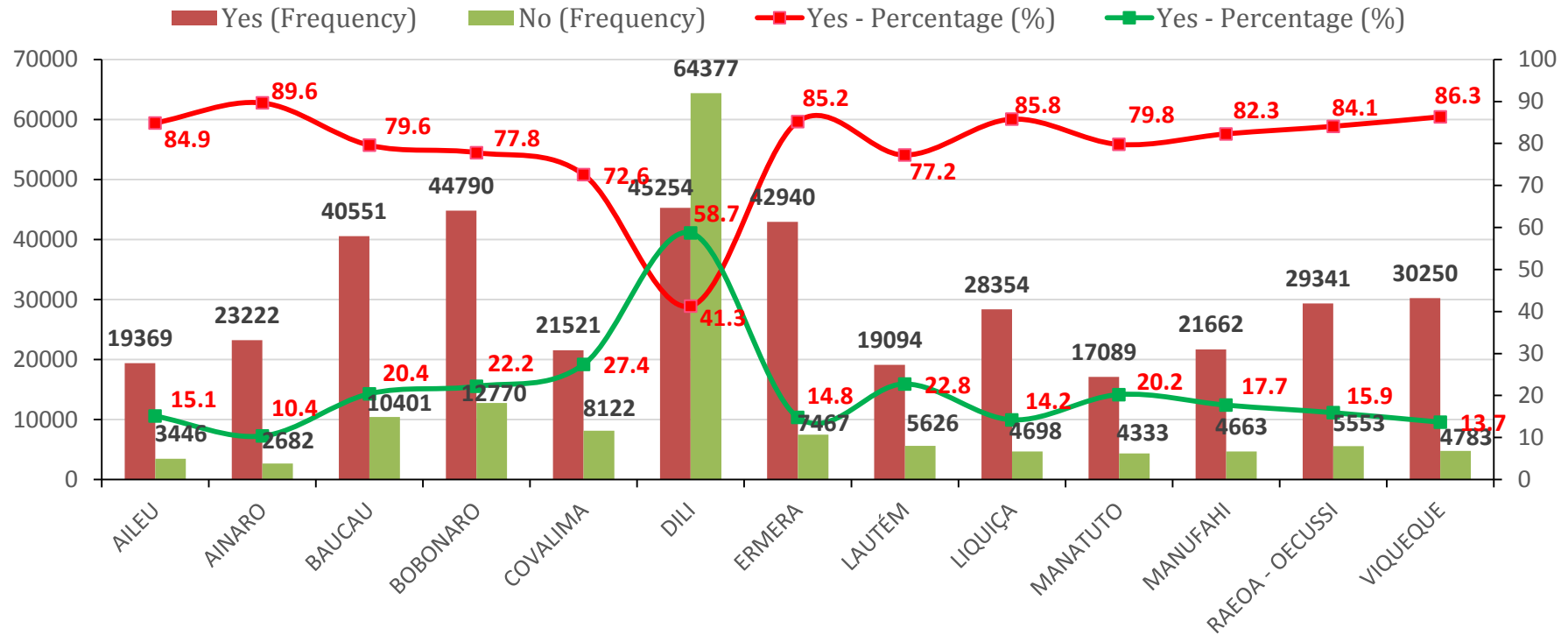
3.4. Residential Mobility

The FDCH survey has also collected information on the residential mobility of the population of Timor-Leste (see Figures 15(a), (b) and (c)). As is to be expected, the main driver of internal mobility is Dili, with only 40% of the population of Dili

having been born there. By contrast, the locally-born population in most other municipalities comprise close to or above 80% of the total population, the main exception being Covalima, where the locally-born are 72% of the total. Most of those who have set up home in a new municipality plan to stay in that area, again with the exception of Dili, where about half of those resident in Dili but born elsewhere plan to return home. (*Figure 5*).

Figure 5. Residential Mobility

Currently lives and where was born?



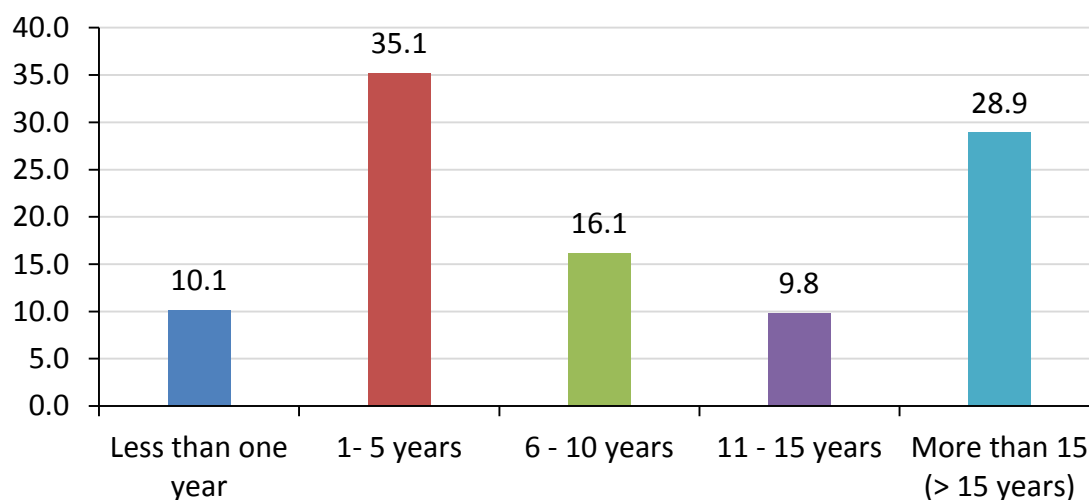
The Municipality of Díli as it is also the capital city, the population aged over 17 years has increased significantly in the last 15 years corresponding to 71% (Table 11 and Figure 6). This increase is due to the fact that economic activities, education, availability of employment and public administration services are concentrated in the capital of the country.

Table 11. Years of residence at the current location

Municipalities	How many years have you lived in this place?					Total
	Less than 1 Year	1- 5 Years	6 - 10 Years	11 - 15 Years	More than 15 (> 15 Years)	
AILEU	344	1,092	425	310	1,185	3,356
AINARO	226	876	293	238	958	2,591
BAUCAU	837	2,585	1,198	931	4,336	9,887
BOBONARO	765	3,383	1,559	1,523	5,144	12,374
COVALIMA	689	1736	701	668	4,212	8,006
DILI	6,262	21,849	10,009	6,103	17,942	62,165
ERMERA	797	2192	821	666	2,457	6,933
LAUTÉM	509	1193	608	553	2,637	5,500
LIQUIÇA	403	1549	695	499	1,463	4,609
MANATUTO	356	1147	390	395	1,818	4,106
MANUFAHI	527	1425	593	455	1,609	4,609
REGIÃO ADMINISTRATIVA ESPECIAL DE OECUSSE AMBENO (RAEOA)	519	1891	763	598	1,607	5,378
VIQUEQUE	520	1091	584	462	2,019	4,676
Total	12,754	42,009	18,639	13,401	47,387	134,190

Figure 6. Years of residence in the current location

DILI - How many years do you reside in this place?
(Percentage - %)

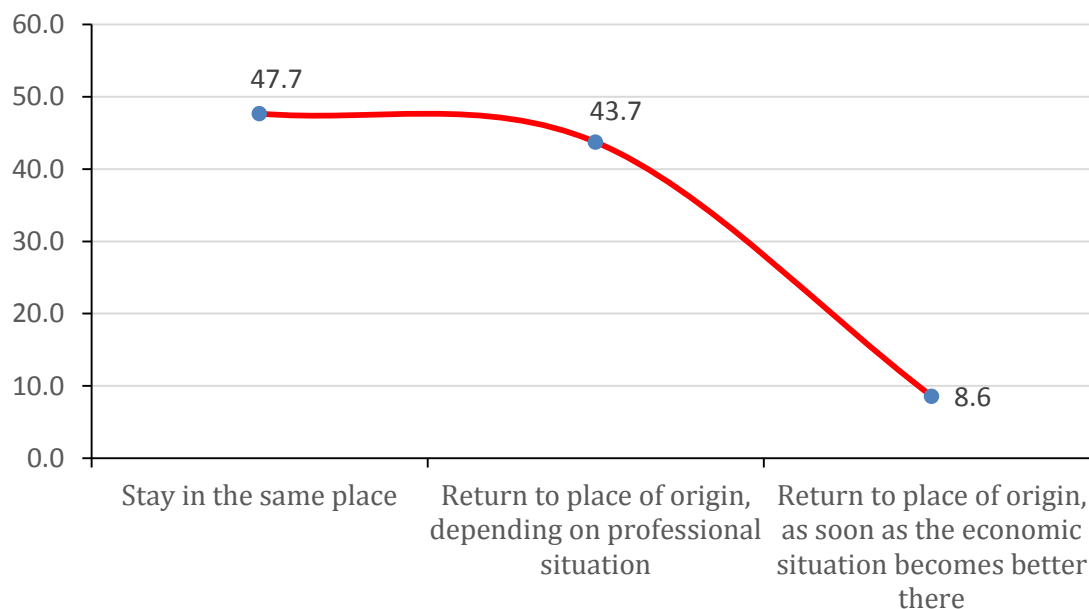


Asked if the person wants to return to the place where he / she was born, 47.7% of those who settled in a new municipality plan to stay in this area, 43.7% want to return to their hometown depending on employment (job) and 8.6 % intends to return to their place of birth as soon as the economic situation becomes better. The exception is Dili, where about half of those living in Dili, but born elsewhere, plan to return to their hometowns. (*Figure 7*).

These data provide an image of a nation still strongly linked to the municipality of origin, although there is a migratory movement to Dili as the country's capital and center of educational and commercial activities. It is remarkable that even the majority of Dili residents intend to return to their place of origin when circumstances permit. These attitudes provide a solid and important basis for an effective decentralization policy.

Figure 7. Residency plan for the future

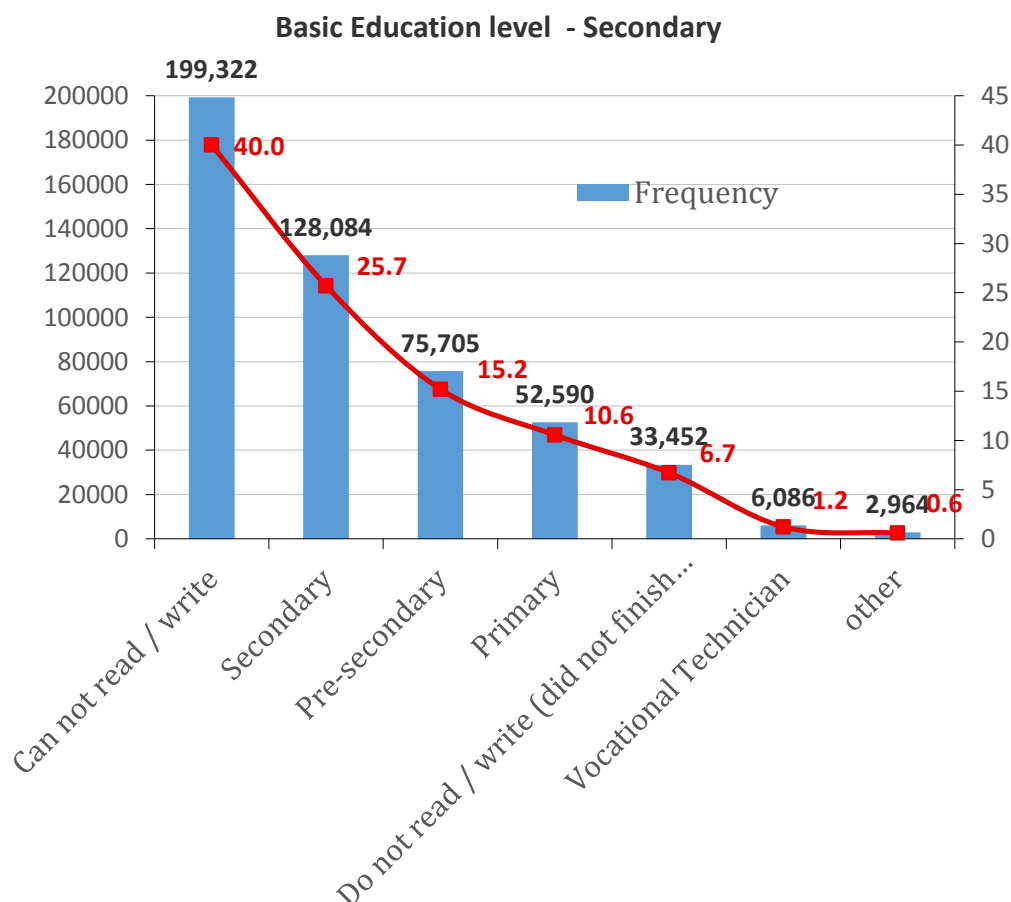
Plan for the future, wants or intends...?
Percentage (%)



3.5. Education Level

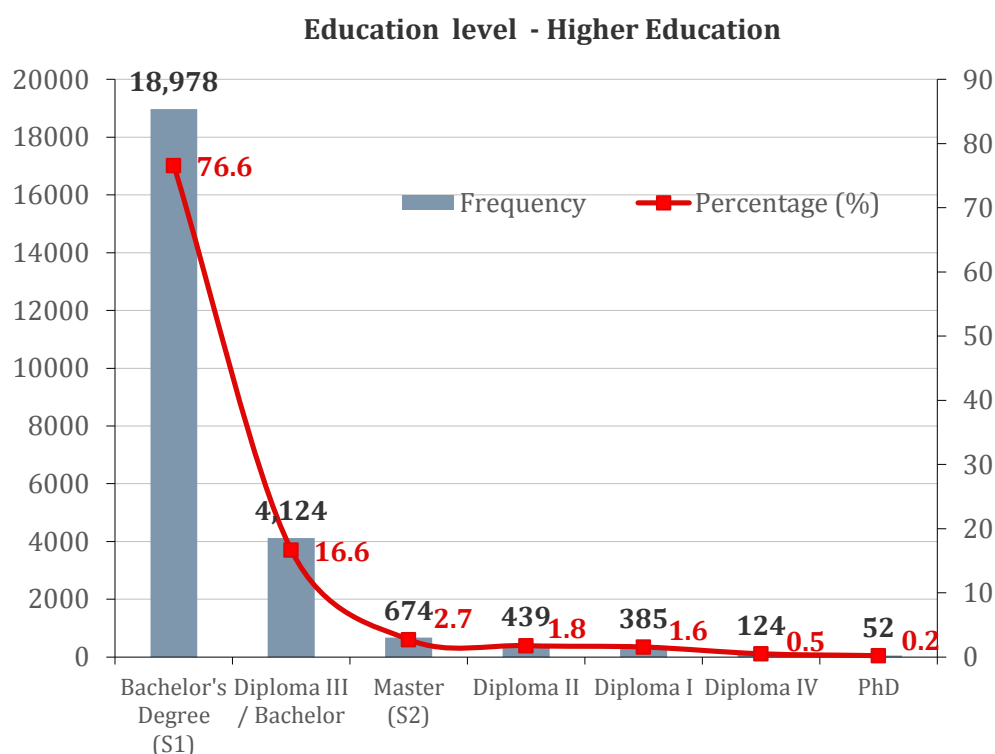
As for the level of education, illiterate respondents, literate adults and people with incomplete basic education occupy 46.7% of the total. Basic (*primary*) education represents 10.6% and pre-secondary and secondary education occupies 40.9%. Vocational technical education and other levels of courses occupy 1.2% and 0.6%, respectively (*Figure 8*).

Figure 8. Level of education of respondents - illiterate - secondary education



At the level of Higher Education, respondents who completed the degree course occupy 76.6% followed by the Diploma III level with 16.6% and the master's degree (S2) with 2.7%. The level of Diploma II represents 1.8% and Diploma I represents 1.6%. The Diploma IV and PhD (S3) courses represent a smaller percentage corresponding to 0.5% and 0.2%, respectively (*Figure 9*).

Figure 9. Education level of higher education respondents



The data in Table 12, shows the distribution of respondents by level of education and by municipalities based on the workplace (currently resides). The data show that Díli is the municipality with the highest percentage of human resources, followed by the municipalities of Baucau, Bobonaro, Viqueque, Oecusse and Ermera, while the municipalities with the lowest percentage of human resources are Covalima, Liquiça, Manufahi, Aileu, Lautem, Ainaro and Manatuto. There are, in general, strong discrepancies in the numbers of human resources between municipalities but it seems that it is related to the total number of the population. In any case, the data presented here show an overview of the distribution of human resources.

It can be concluded that the country shows a wide educational dispersion, with 4.7% of people who have completed university course but 44.5% do not know how to read / only can write. As expected, the illiteracy rate increases with age, and is concentrated in the older age groups. A total of 50.2% of the population surveyed completed primary and secondary education and other types of education with a percentage of 0.6

Table 12. Distribution of respondents by level of education and by municipalities based on the place of work (currently resides)

Level of Education	Municipality													Total
	Aileu	Ainaro	Baucau	Bobonaro	Covalima	Dili	Ermera	Lautem	Liquiça	Manatuto	Manufahi	Oecusse	Viqueque	
Can not read / write	8,962	12,964	19,360	28,937	12,690	10,832	27,029	9,304	14,103	8,454	9,831	20,319	16,537	199,322
Do not read / write (did not finish primary)	1,877	1,267	5,542	4,796	1,202	5,566	2,897	1,090	2,066	1,696	1,877	1,673	1,903	33,452
Sub total	10,839	14,231	24,902	33,733	13,892	16398	29926	10,394	16169	10,150	11,708	21,992	18,440	232,774
Elementary - Secondary														
Elementary	2,663	2,401	5,141	5,168	3,169	8,502	4,774	3,280	4,075	2,648	3,131	3,788	3,850	52,590
Pre-secondary	3,872	3,794	6,678	7,199	5,092	17,191	6,736	4,397	4,664	3,037	4,754	3,431	4,860	75,705
Secondary	4,413	4,554	11,370	9,061	6,182	52,746	7,621	5,432	6,660	4,541	5,288	4,213	6,003	128,084
Vocational Technical High School	142	123	422	397	307	877	141	276	219	188	373	268	215	3,948
Others	29	59	346	110	33	821	61	80	166	99	97	54	183	2,138
Sub total	11,119	10,931	23,957	21,935	14,783	80,137	1,9333	1,3465	15,784	10,513	13,643	11,754	15,111	262,465
1 st . Cycle (1 st class - 4 th class)	27	47	437	114	36	1069	69	84	201	111	98	49	160	2502
2 ^o . Cycle (1 st Year, 2 nd Year)	2	6	28	9	1	102	7	7	18	13	6	3	18	220

Level of Education	Municipality													Total
	Aileu	Ainaro	Baucau	Bobonaro	Covalima	Dili	Ermera	Lautem	Liquiça	Manatuto	Manufahi	Oecusse	Viqueque	
3 ^o . Cycle (3 rd year - 9 th year / 3 rd year up)	4	0	43	17	1	110	12	7	13	5	12	4	14	242
Sub total	33	53	508	140	38	1,281	88	98	232	129	116	56	192	2,964
Higher education														
Diploma I (DI)	6	9	56	35	21	137	12	14	21	17	17	16	24	385
Diploma II (DII)	11	6	79	48	15	121	23	32	24	15	19	12	34	439
Diploma III (DIII)	272	168	526	241	219	1,192	229	200	181	141	168	231	356	4,124
Diploma IV (DIV)	7	7	12	3	5	43	2	5	6	4	10	11	9	124
Bachelor's Degree (S1)	520	508	1082	1412	671	10,033	801	511	631	467	642	831	869	18,978
Master Degree (S2)	18	4	37	29	7	493	16	13	12	7	9	14	15	674
PhD (S3)	0	0	2	0	0	46	0	1	1	1	0	1	0	52
Sub total	834	702	1,794	1,768	938	12,065	1,083	776	876	652	865	1,116	1,307	2,4776
Total	22,825	25,917	51,161	57,576	29,651	109,881	50,430	24,733	33,061	21,444	26,332	34,918	35,050	522,979

This dispersal of schooling, together with the rapid growth of the population in the relevant age groups, shows the essence of the challenge faced by Timor-Leste. One aspect of this challenge is the balance between academic education and vocational or vocational training. Of the 24,776 respondents in the population surveyed who had completed university degree, 79.5% (19,704) had the academic Bachelor's Degree (S1), Master degree (S2) and PhD (S3) levels compared to the upper intermediate level e.g. professional middle professional Diploma I to Diploma IV has only 20.5% (5,072). While at the secondary level the imbalance is even greater among those who have completed vocational or vocational technical secondary education and other vocational-level areas (6,086) compared to those who have completed secondary general education (128,084), representing a significant proportion of 1:21. That is, in 22 individuals graduated from the secondary level of education there is 1 professional or vocational technical high school graduate and 21 from general secondary education.

The ideal balance between academic and technical education is a key issue in the development process. Table 13 shows some comparative data on these forms of education in four countries. In a typical developed country, such as Australia, more than 50% of the 15-year-old population completed some kind of post-secondary education, with more than half of them in some kind of post-secondary vocational training outside universities. The population of Timor-Leste that has completed university education (4.7%) is substantial compared to Indonesia and the Philippines, since it is only 15 years since the restoration of independence and 15-17 years since the establishment of Universities. But the main difference with Indonesia seems to be the importance of vocational education, with 9.7% of the population in Indonesia having completed vocational training in high school and 12.3% having obtained vocational training in both high school and post- compared with only 2.17% in Timor-Leste.

Table 13. Portions of the population aged 15 years and older who completed various forms of education in the selected countries in 2016 or the nearest year (%)

	Timor Leste	Indonésia	Filipina	Austrália
Completed the university course	4,7	7,2	9,3	25,8
Other Post-secondary	0,97	2,6	2,6	31,3
Secondary Technical (Vocational)	1,2	9,7	na	na

Fonte: FDCH survey; ILO Labour and Social Trends; Australian Bureau of Statistics, Education and Work Australia, May 2016.

Although the development of the university sector continues to be a high priority, the Timor-Leste Strategic Education Plan for 2011-30 places great emphasis on the development of secondary technical and vocational education (ETPS) and the simultaneous emergence of a strong polytechnic sector that provide post-secondary education for these students. The plan foresees a rapid growth in the number of ETPS students from the year 2016, and by the year 2027, the number of ETPS students will be higher than the enrollment in general secondary schools. Whether or not these ambitious goals can be achieved, substantial growth in vocational and technical education appears to be a high priority for Timor-Leste.

Amount of the total of 24,776 higher education graduates (tertiary), only 12,714 answered the question in relation to the areas of specialization (*curricula*).

Table 14 shows the data grouped and categorized into 9 large areas distributed according to the study program or area of study and by gender. From the available data, it can be seen that the highest number of upper and higher qualified resources correspond to the areas of Applied Social Sciences with 30.3% (3,857 respondents) followed by Human Sciences with 20.7% (2,630), Engineering with 16, 8% (2,145) Health Sciences with 12.2% (1,522) and Agricultural Sciences 8.3% (1,052). The areas with the lowest percentage are Exact and Earth Sciences 5.5% (703/12,714), Linguistics, Arts and Letters 4.3% (545/12,714), Other Specialized Areas 1.3% (161/12,714) and Sciences Biologicals with only 0.5% (69/12,714).

If we compare the total number of qualified resources by grouping the data collected in two large areas - Social Sciences and Exact Sciences, it was verified that

the current human resources in the area of Social Sciences with 56.6% (7.193) is comparatively more qualified than the area of Exact Sciences 43.4% (5,521), (*Table 14 Categorization of study areas and grouping in study program*).

Regarding the distribution of tertiary level human resources according to areas or study program or specialization by Municipality and Administrative Post can be seen in Annex 1.

The data obtained in this research also provide information regarding the distribution of the human resources of each Municipality and by Sub-District Administration. The data of each municipality presented in the separate annex of this report is based mainly on the FDCH survey to analyze the current situation and "OVERVIEW HUMAN CAPITAL IN THE MUNICIPALITY AND ADMINISTRATIVE POSITION" in several dimensions, as a basis for the development of a strategy human resource.

Table 14. Categorization of study areas and grouping in study program

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)		Male	Female
Exact and Earth Sciences	1	Mathematics	3	7	119	-	270	3	-	402	291	111
	2	Geology	-	-	6	-	57	3	-	66	55	11
	3	Computer science	2	-	7	-	45	4	-	58	42	16
	4	General / environmental biology	1	3	10	-	41	1	1	57	26	31
	5	Physics	2	2	15	1	11	1	-	32	20	12
	6	Chemistry	-	-	2	-	26	1	-	29	10	19
	7	Mineralogy	-	-	1	-	14	3	-	18	10	8
	8	Statistic	-	-	3	-	6	2	-	11	6	5
	9	Geodesy	5	-	-	-	5	-	-	10	6	4
	10	Geological Climatology	-	-	-	-	7	-	-	7	2	5
	11	Biological Oceanography	-	-	-	-	4	1	-	5	2	3
	12	Geosciences	-	-	1	-	1	-	-	2	1	1
	13	Botany	-	-	-	-	2	-	-	2	-	2
	14	Astronomy	-	-	1	-	1	-	-	2	2	-
	15	Meteorology	-	-	-	-	2	-	-	2	2	-
	16	Geochemistry	Areas without qualified persons									
	17	Oceanography										
	18	Physical oceanography										
	Subtotal		13	12	165	1	492	19	1	703	475	228
Biological Sciences	1	Zoology	-	1	1	-	14	3	-	19	11	8
	2	Pharmacology	1	-	4	1	9	-	-	15	8	7
	3	Immunology	-	-	3	-	5	2	-	10	8	2
	4	Biophysics	1	-	-	-	6	-	-	7	7	-
	5	Biochemistry	-	-	1	-	5	-	-	6	3	3
	6	Plant biology	-	-	2	-	4	-	-	6	4	2
	7	Genetics	-	-	-	-	4	-	-	4	2	2
	8	Microbiology	-	-	-	-	1	-	-	1	1	-
	9	Parasitology	-	-	-	-	1	-	-	1	1	-
	Subtotal		2	1	11	1	49	5	0	69	45	24

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree(S1)	Master Degree (S2)	PhD(S3)		Male	Female
Engineering	1	Computer Engineering Technology (Computer)	19	10	91	5	536	15	1	677	466	211
	2	Civil Engineering - Civil Construction	6	11	44	3	474	14	2	554	469	85
	3	Mining engineering	-	2	4	3	251	8	-	268	182	86
	4	Mechanical Engineering	3	5	21	1	141	10	1	182	152	30
	5	Architecture	4	-	4	3	140	4	-	155	123	32
	6	Electrical engineering	2	7	14	-	100	9	1	133	117	16
	7	Environmental engineer	-	2	4	-	20	7	1	34	22	12
	8	Petrology	1	-	1	1	24	-	-	27	14	13
	9	Chemical engineering	-	-	3	-	20	1	-	24	13	11
	10	Geotechnical Engineering	-	-	1	-	10	3	-	14	5	9
	11	Ore Treatment	-	-	-	-	13	-	-	13	9	4
	12	Engineering of agricultural product processing	1	-	1	-	11	-	-	13	9	4
	13	Transport Engineering and Telecommunications	-	2	1	1	8	-	-	12	10	2
	14	Hydraulic Engineering	-	-	2	-	8	-	-	10	7	3
	15	Marine and oceanic engineering	-	-	3	-	7	-	-	10	8	2
	16	Aerospace / Aerospace Engineering	-	-	-	-	9	-	-	9	9	-
	17	Materials Engineering and Metallurgy	-	-	1	-	4	-	-	5	5	-
	18	Sanitary engineering	-	-	-	-	2	-	-	2	2	-
	19	Biomedical engineering	-	-	1	-	-	-	-	1	-	1
	20	Architecture and urbanism	-	-	-	-	1	-	-	1	1	-
	21	Engineering of topography	-	-	-	-	1	-	-	1	-	1
	22	Nuclear engineering	-	-	-	-	-	-	-	-	-	-
Subtotal			36	39	196	17	1780	71	6	2145	1623	522
			Areas without qualified persons									

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)		Male	Female
Health Sciences	1	Medicine - Medical Practice (General Practice)	6	3	40	3	473	3	4	532	238	294
	2	Nursing	6	4	161	2	125	5	-	303	134	169
	3	Public health	10	4	66	1	159	19	2	261	132	129
	4	Pharmacy	28	1	47	1	56	2	-	135	52	83
	5	Midwife	32	2	40	-	52	-	-	126	13	113
	6	Clinical analyst	4	-	13	3	24	2	-	46	17	29
	7	Dentist	1	1	17	1	8	1	-	29	19	10
	8	Nutrition	-	-	9	1	11	-	-	21	12	9
	9	Clinical and Animal Surgery	-	-	7	-	7	-	-	14	4	10
	10	Maternal and Child Health	1	-	4	-	6	2	-	13	5	8
	11	Pathological Anatomy and Clinical Pathology	-	-	1	-	10	-	-	11	3	8
	12	Radia gnóstica, Radiologia Medica	1	-	3	-	5	1	-	10	7	3
	13	Physiotherapy and Occupational Therapy	3	-	3	-	3	-	-	9	4	5
	14	Anesthetist	2	-	2	-	2	-	-	6	4	2
	15	Pediatric Specialist	1	-	-	-	4	-	-	5	4	1
	16	Specialist in Orthopedic Surgery	-	-	1	-	3	-	-	4	2	2
	17	Legal Medicine and Deontology	-	-	-	-	4	-	-	4	2	2
	18	Specialist in Gastroenterology Surgery	-	-	-	-	3	-	-	3	3	-
	19	Specialist in Plastic and Restorative Surgery	-	-	-	-	3	-	-	3	2	1
	20	Obstetric specialist / gynecologist	1	-	1	-	1	-	-	3	1	2
	21	Dentistry	-	-	-	-	3	-	-	3	2	1
	22	Specialized surgery Ophthalmology	-	-	1	-	-	1	-	2	1	1

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree(S1)	Master Degree (S2)	PhD (S3)		Male	Female
Health Sciences	23	Specialist in Pediatric Surgery	-	-	1	-	1	-	-	2	1	1
	24	Internal specialist	-	-	-	-	1	1	-	2	2	-
	25	Optometry	-	-	2	-	-	-	-	2	-	2
	26	Psychiatry	1	-	-	-	1	-	-	2	-	2
	27	Specialist in Cardiovascular Surgery	-	-	1	-	-	-	-	1	1	-
	28	<i>Specialist in Urological Surgery</i>	<i>Areas without qualified persons</i>									
	29	<i>Speech Therapy</i>										
	30	<i>Gerontology</i>										
Subtotal			97	15	420	12	965	37	6	1552	665	887

FUNDO DE DESENVOLVIMENTO DO CAPITAL HUMANO (FDCH)

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)		Male	Female
Agrarian Sciences	1	Real Estate Management	1	2	21	1	201	8	-	234	162	72
	2	Agronomy	1	1	21	1	141	12	-	177	130	47
	3	Aquaculture	3	-	7	-	112	3	-	125	98	27
	4	Agro-business	-	-	3	-	115	5	1	124	68	56
	5	Food Technology	1	-	6	1	45	-	-	53	40	13
	6	Forestry management	-	-	4	-	37	2	-	43	36	7
	7	Agricultural engineering	1	-	1	-	32	1	-	35	25	10
	8	Fishing engineering	1	-	4	3	24	-	-	32	28	4
	9	Environmental health	1	-	11	-	14	1	-	27	17	10
	10	Forest resources and forestry	1	-	5	-	18	-	-	24	19	5
	11	Preventive Veterinary Medicine	-	1	10	-	10	-	-	21	14	7
	12	Agricultural social economy	-	-	2	-	16	1	-	19	14	5
	13	Environmental Ecology	-	-	1	1	11	2	-	15	13	2
	14	Technology and Use of Forest Products	-	-	3	-	10	-	-	13	9	4
	15	Forestry Techniques and Operations	-	-	1	-	9	-	-	10	8	2
	16	Animal Reproduction	-	-	-	-	10	-	-	10	6	4
	17	Food Science and Technology	1	-	1	-	6	1	-	9	7	2
	18	Floriculture, Parks and Gardens and Arborization of Public Roads	-	-	2	-	6	-	-	8	4	4
	19	Inland water resources	1	-	-	-	5	2	-	8	6	2
	20	Production engineering	-	1	1	-	5	-	-	7	7	-
	21	Water and Soil Engineering	-	-	-	-	6	-	-	6	5	1
	22	Soil Science	1	-	1	-	3	-	-	5	5	-
	23	Conservation of Nature	-	-	1	-	-	4	-	5	3	2
Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree ((S1)	Master Degree (S2)	PhD (S3)		Male	Female
Agrarian Sciences	24	Nutrition and Animal Feed	-	-	1	-	4	-	-	5	3	2
	25	Heavy Resources and Fisheries Engineering	-	-	1	-	3	-	-	4	3	1
	26	Agrometeorology	-	-	2	-	2	-	-	4	4	-
	27	Rural Buildings and the Environment	-	-	2	-	1	1	-	4	4	-
	28	Marine Fisheries Resources	-	-	-	-	4	-	-	4	3	1
	29	Veterinary Medicine	-	-	2	-	1	-	-	3	3	-
	30	Phytosanitary	-	3	-	-	-	-	-	3	3	-
	31	Fitotecnia	1	-	-	-	2	-	-	3	1	2
	32	Forestry	-	-	1	-	2	-	-	3	3	-
	33	Genetics and Improvement of Domestic Animals	-	-	-	-	2	-	-	2	1	1
	34	Animal Pathology	-	-	-	-	1	1	-	2	-	2
	35	Inspection of products of animal origin	-	-	-	-	2	-	-	2	2	-
	36	Food Engineering	-	-	-	-	2	-	-	2	1	1
	37	Fodder and forage crops	-	-	-	-	1	-	-	1	1	-
	38	<i>Animal husbandry</i>	Areas without qualified persons									
	39	<i>Rural extension</i>										
	40	<i>Ecology of Domestic Animals and Ethology</i>										
	41	<i>Evaluation, Production and Conservation of Forages</i>										
	42	<i>Management and conservation of pastures</i>										
Subtotal			14	8	115	7	863	44	1	1052	756	296

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree(S1)	Master Degree (S2)	PhD (S3)		Male	Female
Applied Social Sciences	1	Management	16	6	85	6	750	90	6	964	565	399
	2	Law	2	3	7	1	804	25	2	844	590	254
	3	Accounting	4	3	52	1	523	11	-	594	292	302
	4	Economy Finance / financial management - Banking economics	-	3	39	1	228	15	1	287	140	147
	5	Economy	2	3	22	2	212	6	-	247	129	118
	6	Human resource Management	4	5	16	1	180	17	1	224	123	101
	7	Tourism and Hospitality	11	3	29	2	91	5	1	142	60	82
	8	Public law	-	-	2	-	116	13	-	131	101	30
	10	Development Study	-	-	3	-	53	10	3	69	45	24
	11	Business Administration / Business	-	1	13	-	51	3	-	68	42	26
	12	Communication - Journalism and Publishing	2	1	6	-	50	2	1	62	38	24
	13	Government Planning and Policy	-	-	4	-	50	3	1	58	40	18
	14	Social work (including Gravedigger)	-	-	13	-	12	-	-	25	13	12
	15	Economy - Cooperativa - Mercado	1	-	5	-	17	2	-	25	17	8
	16	Industrial economics	-	-	-	-	18	-	-	18	14	4
	17	Computer Management	2	-	7	-	9	-	-	18	12	6
	18	Business Administration	2	-	2	-	10	2	-	16	7	9
	19	Gastronomic science	-	-	-	-	12	-	-	12	8	4
	20	Administration of Specific Sectors	-	-	-	-	7	2	-	9	2	7
	21	International economy	-	-	-	-	6	-	1	7	6	1
	22	Private Law	-	-	-	-	5	1	-	6	5	1
Applied Social Sciences	23	Urban and Regional Planning	-	-	-	-	3	3	-	6	5	1
	24	Information Science	-	-	2	-	3	-	-	5	5	-
	25	Public relations	1	-	-	-	4	-	-	5	2	3
	26	Regional and Urban Economics	-	-	1	-	3	-	-	4	2	2
	27	Business consulting	-	-	-	-	3	-	-	3	3	-
	28	Demography	-	-	-	-	3	-	-	3	2	1
	29	Museology	-	-	-	-	3	-	-	3	1	2
	30	Domestic economy	-	1	-	-	1	-	-	2	1	1
Subtotal			47	29	308	14	3227	210	17	3857	2270	1587

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)		Male	Female
Human Sciences	1	Education	5	27	112	3	197	15	2	361	214	147
	2	Biology of teaching (pedagogical)	1	2	51	-	148	4	-	206	106	100
	3	Teaching mathematics	-	-	64	1	140	-	-	205	140	65
	4	International, bilateral and multilateral relations	-	-	6	-	189	8	-	203	120	83
	5	Public policy	4	-	3	-	177	3	-	187	146	41
	6	Public administration	1	1	17	2	123	36	-	180	121	59
	7	Sociology of Education	-	1	11	-	121	-	-	133	82	51
	8	Teacher training	2	7	62	1	39	7	1	119	55	64
	9	Physics of Teaching	-	1	34	-	75	-	-	110	70	40
	10	Philosophy	-	2	7	-	73	8	1	91	82	9
	11	Political science	3	1	3	-	66	7	1	81	56	25
	12	Government / Comparative Government Systems	-	-	4	1	43	21	2	71	54	17
	13	Teaching chemistry	-	1	1-	-	50	1	-	52	39	23
	14	Theology	5	1	14	-	31	8	-	59	40	19
	15	Sociology	2	-	9	-	39	5	-	55	38	17
	16	Training of primary and pre-secondary teachers	-	3	2-	-	22	1	-	26	20	26
	17	Education (education) Pre-primary and primary	-	2	27	-	16	-	-	45	21	24
	18	Catechism	-	7	18	-	18	-	-	43	23	20
	19	Economics of education	-	-	5	-	31	-	-	36	21	15
	20	Moral Theology	1	2	4	-	24	3	-	34	25	9
	21	Economics of Education / Management of Education	2	1	5	-	20	5	-	33	18	15
	22	Psychology	-	1	6	1	23	-	-	31	17	14
	23	Religious career	-	4	9	-	16	1	-	30	14	16

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)		Male	Female
Human Sciences	24	Physical Education / Sports Education	-	1	3	-	22	-	-	26	16	10
	25	Special education	-	2	12	-	9	-	1	24	13	11
	26	Educational Psychology	-	-	1	-	20	-	-	21	12	9
	27	Peace study	-	-	1	-	16	2	-	19	14	5
	28	Philosophy of Education	-	-	6	-	12	-	-	18	9	9
	29	History and geography	-	-	4	-	10	1	-	15	10	5
	30	Educational politics	-	-	-	-	9	1	-	10	8	2
	31	Anthropology	-	-	1	-	6	-	2	9	8	1
	32	History of Education	-	-	2	-	6	-	-	8	5	3
	33	Artistic education	-	-	2	-	6	-	-	8	5	3
	34	Skills Education - Fashion, Cosmetics, Cake / Pastry	-	-	1	-	4	2	-	7	5	2
	35	Educational technology	-	-	2	-	-	4	1	7	7	-
	36	Professional qualification	-	1	2	-	2	1	-	6	3	3
	37	Archeology	-	-	1	-	3	-	1	5	3	2
	38	Educational Anthropology	-	-	2	-	3	-	-	5	4	1
	39	Gender study	-	1	1	-	2	-	-	4	3	1
	40	Library	-	-	2	-	2	-	-	4	-	4
	41	Systematic Theology	-	-	-	-	3	-	-	3	3	-
	42	Specific curricula for levels and types of education	-	-	1	-	2	-	-	3	2	1
	43	Movie theater	-	-	-	-	2	-	-	2	2	-
	44	Tetum's tongue	-	-	2	-	-	-	-	2	2	-
	45	Educational Planning and Evaluation	-	-	-	-	2	-	-	2	1	1
	46	Korean language	-	-	-	-	1	-	-	1	1	-
Subtotal			26	69	517	9	1823	144	12	2600	1658	972

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)		Male	Female
Linguistics, Literature and Arts	1	Portuguese language	11	9	140	2	46	6	1	215	140	75
	2	English language	3	7	24	1	159	8	-	202	96	106
	3	Applied Linguistics	1	1	9	-	15	1	1	28	16	12
	4	Pastoral theology	-	1	8	-	18	1	-	28	17	11
	5	Indonesian Language	-	1	4	-	13	-	-	18	6	12
	6	Sociolinguistics and Dialectology	-	-	4	1	7	-	-	12	6	6
	7	Psycholinguistics	-	-	1	-	11	-	-	12	9	3
	8	Music	-	-	4	-	2	-	-	6	6	-
	9	Video arts	-	1	1	-	4	-	-	6	2	4
	10	Spanish language	-	-	2	-	3	-	-	5	3	2
	11	Cultural Studies	-	-	1	-	3	-	-	4	2	2
	12	Theater	-	-	1	-	2	-	-	3	3	-
	13	Japanese language	-	-	1	-	1	-	-	2	-	2
	14	Fashion design (model and designer)	1	-	1	-	-	-	-	2	2	-
	15	Visual arts	-	-	-	-	1	-	-	1	1	-
	16	Photographer	-	-	1	-	-	-	-	1	1	-
	17	<i>Decoration</i>	<i>Areas without qualified persons</i>									
	18	<i>Dance</i>										
	19	<i>Opera</i>										
Subtotal			16	20	202	4	285	16	2	545	310	235

Categorization of Areas	No.	Study Program	Education Level							Total	Gender	
			One Year Diploma	Two Years Diploma	Three Years Diploma	Four Years Diploma	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)		Male	Female
Other Specialized Areas	1	Military career	1	-	-	-	3	-	-	4	3	1
	2	Mechatronics Engineering	-	-	-	-	3	-	-	3	3	-
	3	Hospital administration	-	-	1	-	1	-	-	2	2	-
	4	Biomedicine	-	-	-	-	-	-	2	2	2	-
	5	Biotechnology	-	-	-	-	2	-	-	2	-	2
	6	Actuarial Sciences	-	-	1	-	-	-	1	2	1	1
	7	Diplomacy	-	-	1	-	-	1	-	2	2	-
	8	Cartographic engineering	Areas without qualified persons									
	9	Armament Engineering										
	10	Textile Engineering										
	11	Industrial chemistry										
	12	Others	6	4	31	3	85	11	4	144	96	48
		Subtotal	7	4	34	3	94	12	7	161	109	52
Total			258	197	1968	68	9578	558	52	12684	7911	4803
Percentage (%)			2.03	1.55	15.52	0.54	75.51	4.40	0.41	100.00	62.4	37.9

In the categorization of the **areas of Exact Sciences** and Earth, the data (*Table 14*) show that the courses of Mathematics, Geology, Computer Science, General-Environmental Biology, Physics, Chemistry, Mineralogy, Statistics and Geodesy have the most resources, this is more than 10 people while in other study programs or areas of expertise there are very few, fewer than 10 people, even in some areas - without qualified people. However, at the national level there are still very few, except in the area of Mathematics.

In the area of **Health Sciences**, the data (*Table 14*) show that Medicine - Medical Clinic (General Medicine), Nursing, Public Health, Pharmacy and Midwife courses have the most resources while in other study programs or areas of study. are very few. The lack of professionals, especially in the areas of Diagnostics, Therapeutics and specialties, is a problem with serious consequences for the functioning of the health system or partial or total inability to use the available infrastructures and medical equipment. Areas of expertise such as Specialist in Urological Surgery, Speech Therapy and Gerontology were not found in any of the respondents.

As for **biological sciences**, the areas of knowledge such as Zoology, Pharmacology and Immunology are found with greater number of resources compared to areas of study of Biophysics, Biochemistry, Botany, Genetics Microbiology and Parasitology. In any case, at the national level it can be concluded that a very small number still exist.

In the area of **Linguistics, Arts and Letters**, a greater number of resources are in the area of Portuguese Language, English Language, Applied Linguistics, Pastoral Theology, Indonesian Language, Sociolinguistics - Dialectology and Psycholinguistics. There is very little presence of people with qualifications in the field of Music, **Video and Arts studies**, Spanish Language, Cultural Studies, Theater, Japanese Language, Fashion Design (model and designer), Visual Arts and Photography. No person with qualification in the area of Decoration, Dance and Opera has been registered. However, at the national level there are still very few people trained.

The analysis of respondents with **engineering** qualifications, in the table, shows some imbalances between different areas of study, with a large percentage of respondents with degrees in Computer Engineering, Civil Engineering (Civil Construction), Mining Engineering, Mechanical Engineering, Architecture and Electrical Engineering. Very few people are observed even without qualified people in other areas of engineering such as nuclear engineering.

Data on **Agrarian Sciences** show a great discrepancy between the study areas with the highest concentration in **Livestock Production**, Agronomy, Aquaculture and Agro-business. There is also an insufficiency in other areas of study, in view of the country's needs in the future. No person with qualification was registered in the area of **Animal Breeding**, Rural Extension, Animal Ecology and Ethology, Evaluation - Production and Conservation of Forages and Management - Pasture Conservation.

Analyzing the number of respondents in the areas of **Human Sciences**, the data show a greater number of respondents with Education, Teaching Biology, Teaching Mathematics, International Relations, bilateral and multilateral, Public Policies, Public Administration, Sociology of Education, Teacher Training and Teaching Physics while in other areas of study are quite and very small. This large number is due to the fact that there has been a greater number of graduations in these areas before and since the creation of public and private universities in Timor-Leste.

As for the number of respondents with qualifications in the areas of **Applied Social Sciences**, there is a smaller number of respondents in areas such as Social Work, Economics - Cooperative - Market, Industrial Economy, Computer Management, Business Administration, Gastronomic Science, Sector Administration Specific, International Economics, Private Law, Urban and Regional Planning, Information Science, Public Relations, Regional and Urban Economics, Business Consulting, Demography, Museology and Home Economics.

The largest number are concentrated in the areas of Management, Law, Accounting, **Economics and Finance** or Financial Management - Banking Economics, General Economics, Human Resource Management, Tourism and Hospitality and Public Law. This large number is due to the fact that there has been a greater number of graduations in these areas before and since the creation of universities in East Timor after independence where the same universities offer the same courses. The areas of Development Studies, Business or Business Administration, Communication - Journalism and Publication, and Government Planning and Policy are still few in number.

In relation to the **Specialized Areas**, 11 (eleven) study programs were registered with individuals trained in these very small areas and even some without qualified persons such as Cartographic Engineering, Armaments Engineering, Textile Engineering and Industrial Chemistry.

3.6. Vocational Training Certificate Level I – Level IV

In the vocational or professional certificate course, more than half of the respondents (52%) completed only Certificate 1 (*see Table 15*), while the major training areas were Computer, Portuguese Language Course, English Language Course, General Administration for the Office, Technological Information, Agriculture or Horticulture Course, Woodworking, Electricity, Financial Services (Micro Finance and Banking), Automotive and Maintenance and Construction (General), which contained 66.3% or 7,527 courses out of a total of 11,360 courses. Other areas of training are still few in number. Those who obtained Certificate II (20.9%), Certificate III (11.1%) and Certificate IV (16%), have training areas similar to Certificate I.

Table 15. Responders who completed the Certificate I - Certificate IV Course

No.	Area of Training	Total	Cert. I	Cert. II	Cert. III	Cert. IV
1	Computer	3,027	1,877	617	255	278
2	Portuguese language	1,630	651	371	239	369
3	English Language	1,377	647	402	155	173
4	General Administration for the Office	318	166	61	35	56
5	Information Technology (IT)	310	185	56	32	37
6	Agriculture or horticulture course	238	122	40	19	57
7	Carpentry	154	98	39	12	5
8	Electricity	135	86	25	13	11
9	Financial Services (Micro Finance and Banking);	120	55	18	14	33
10	Automotive and Maintenance.	114	77	17	14	6
11	Construction (General)	104	54	32	8	10
12	General Administration of the Office	81	37	16	16	12
13	Hospitality Management (General)	73	37	21	8	7
14	Hospitality Management (General)	71	31	23	11	6
15	Hair stylist	67	45	10	7	5
16	Improve business	65	41	7	9	8
17	Welding	57	40	10	5	2
18	Plumbing	55	36	9	4	6
19	Construction Business (General)	47	20	14	7	6
20	Agricultural Course	39	23	8	2	6
21	Evaluation training	33	15	6	3	9
22	Public communication to the study of the public sector (SEFTEK);	30	13	3	10	4
23	Bricklayer	30	17	7	5	1
24	Tourist and Tourist Guide	30	15	4	5	6
25	Fishing course	27	16	3	1	7
26	Photographer	26	12	7	5	2
27	Police investigation.	26	9	4	2	11
28	Hospitality (food production)	25	14	8	0	3
29	Tailor or Seamstress	23	11	7	1	4
30	(Diploma) in Training and Evaluation	21	9	0	4	8
31	Culinary or cooker	21	14	5	1	1
32	Management for Police	18	5	5	2	6
33	Training for Contractors	17	7	4	1	5
34	Painter of arts, paintings, tattoos	17	12	2	3	0
35	Rural water supply	12	9	1	1	1
36	Small machine	12	7	3	1	1
37	Aesthetic Course (Manicure and Pedicure)	4	1	1	1	1
38	Piano and music course	4	1	1	0	2
39	Solar production	3	1	0	2	0

No.	Area of Training	Total	Cert. I	Cert. II	Cert. III	Cert. IV
40	Physiotherapy or Massage	2	1	1	0	0
41	Coffee production	1	0	1	0	0
42	Others	2,896	1,390	502	347	657
Total		11,360	5,907	2,371	1,260	1,822
Percentage (%)		100%	52%	20,9%	11,1%	16%

3.7. Professional Occupation in the Public Sector

This work greatly enhances the importance of the public sector, which is an essential employer in Timor-Leste.

3.7.1. Permanent Public Servants

Figure 10 (a) shows that general servant and teachers are the main occupations of the public sector and together account for 82.9% of the positions. 12.3% of teachers have held their positions for more than 15 years and a similar proportion between 6 and 10 years which is 12.6%. As for staff in general, the highest proportion are those who have maintained the public servant between 1-5 years and 6-10 years and together represent 69.5% compared to those who have maintained the service for more than 10 years, only 30 , 5%. As expected, the number of civil servants has increased dramatically over the last 10 years.

The length of service for staff positions is lower with about one third of the group with years of service between 1 and 5 years, and a similar proportion between 6 and 10 years.

Figure 10. (a). Distribution of employees by position and years of work

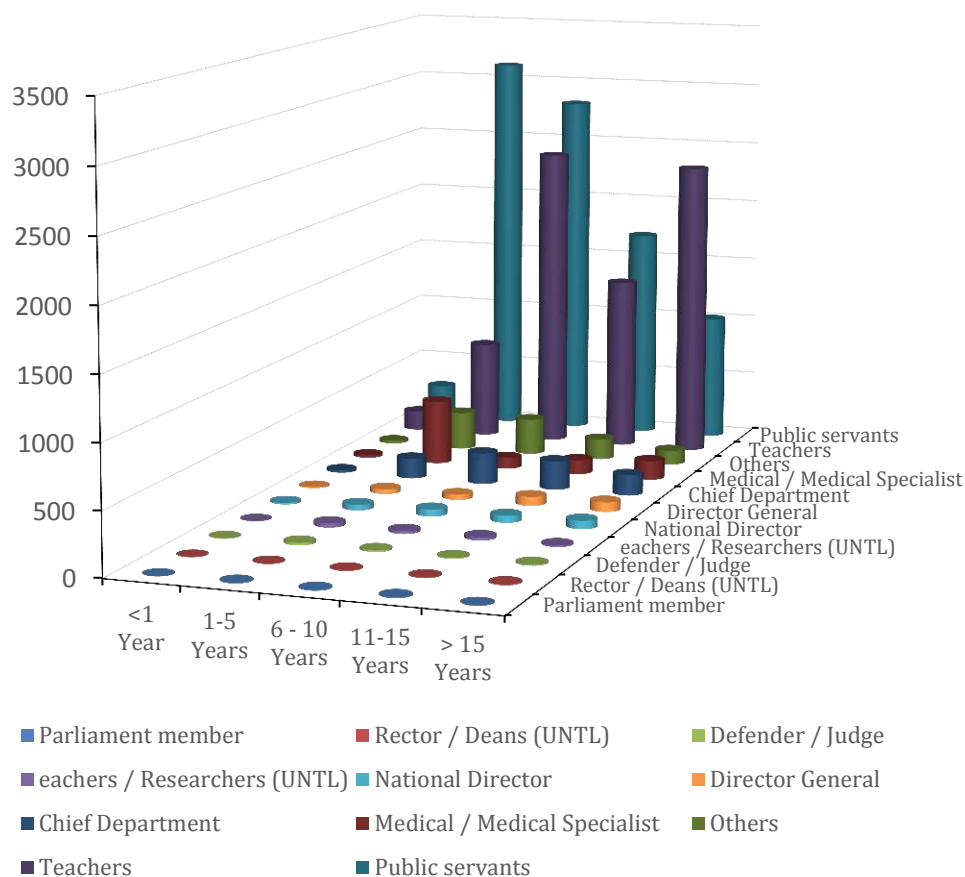


Figure 10 (b) shows the permanent public servants by grade / level and by years of service. 83% of the positions are between the F / level 1 and the D / 4 level. In addition, 31% of civil servants have held positions between 6 and 10 years. The standard of position levels is quite stable, except between 1 and 5 years of service. In this range, there are substantially more seniors (level 5, 6 and 7 positions) than the other bands with longer years of service.

Figure 10 (b). Distribution of employees by degrees and years of work

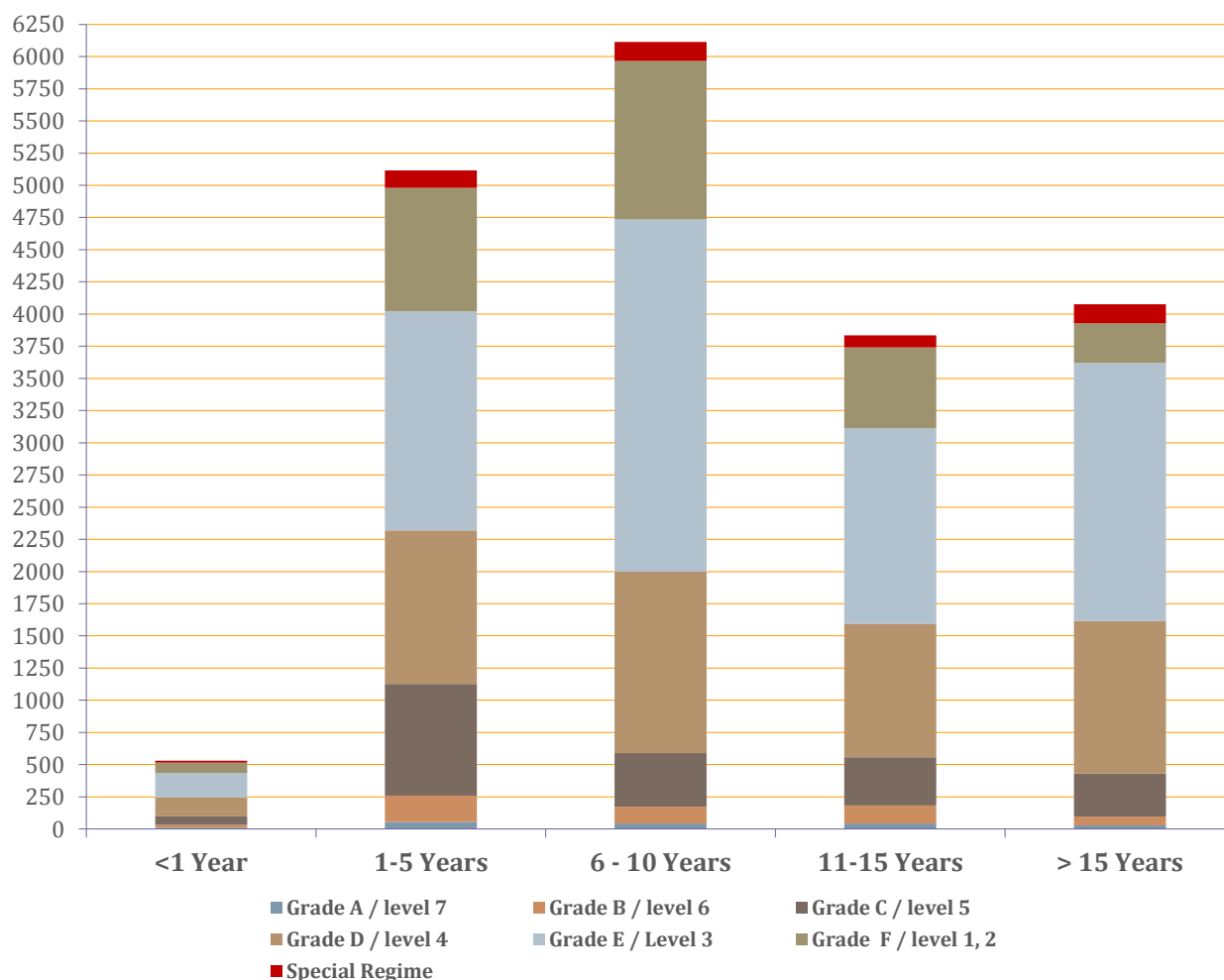
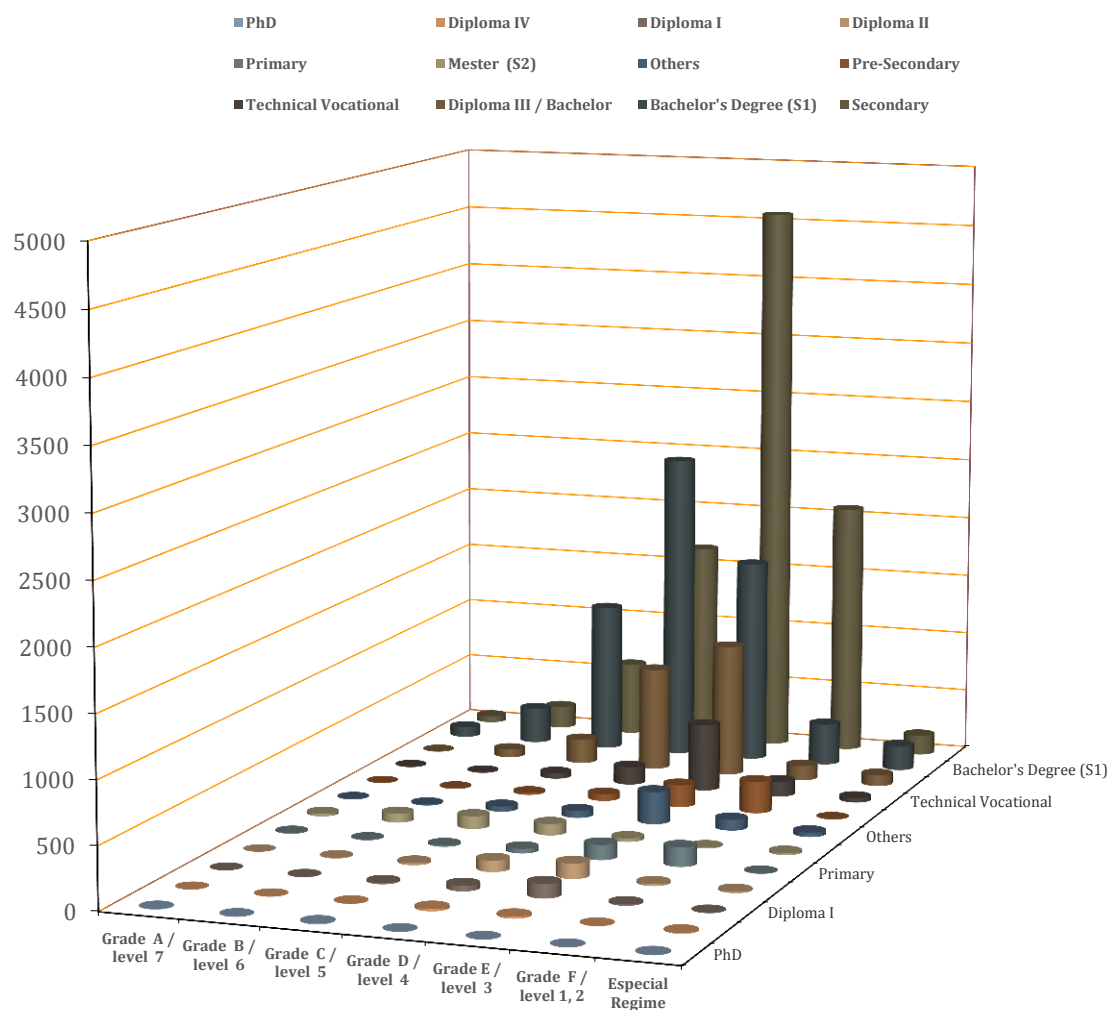


Figure 10 (c) shows that the highest proportion of permanent civil servants are concentrated in secondary education (43.9%), bachelor degree (29.9%), bachelor degree including diploma III (11.4%) and others education levels of less than 5%. 82.5% of permanent civil servants are between grade F / level 1 and grade D / level 4. In addition, the highest proportion of graduates occupy between grade D / level 4 and grade A / level 7 while grade F / level 1-2, and E / level 3, there are more servers with a secondary education level.

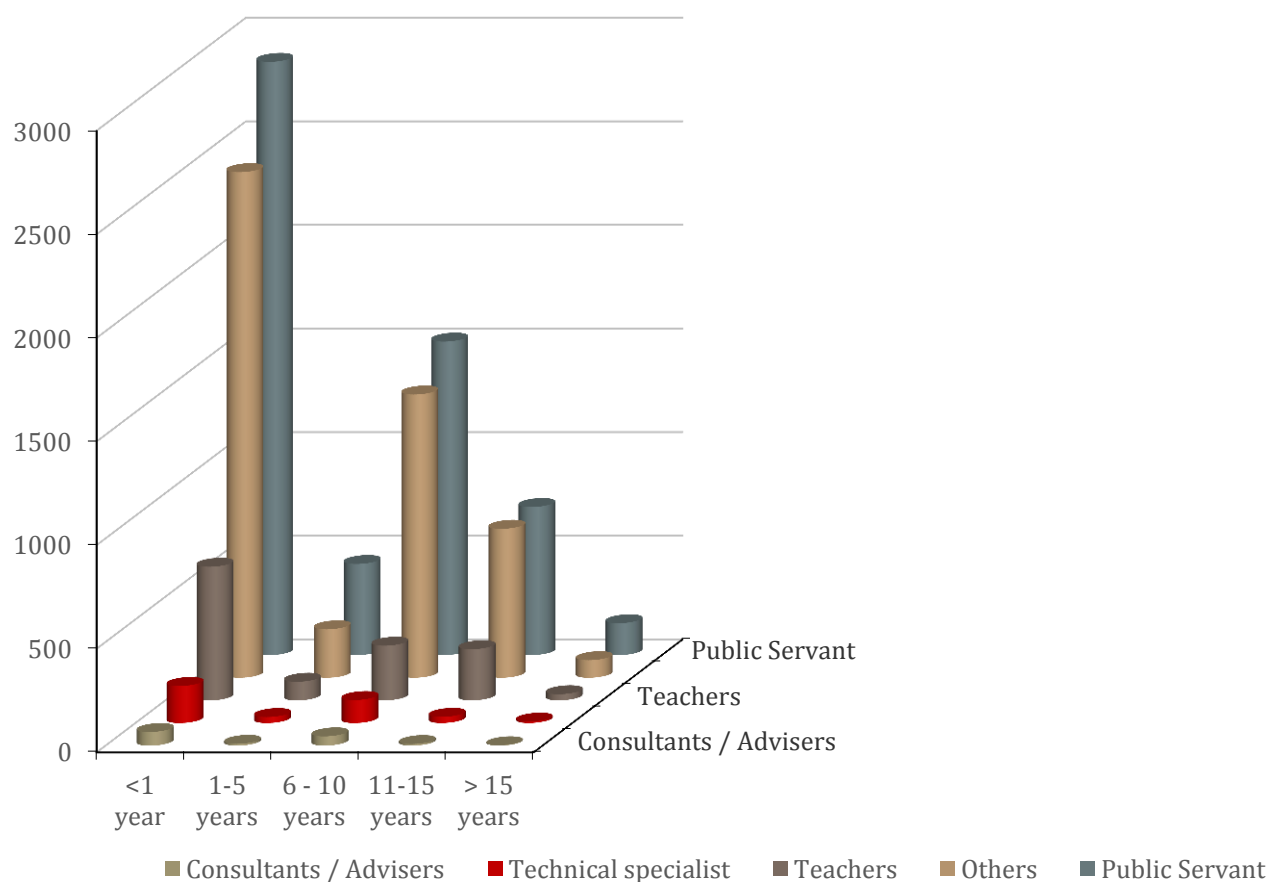
Figure 10 (c). Distribution of employees by level of education and grades / level.



3.7.2. Temporary Public Servants

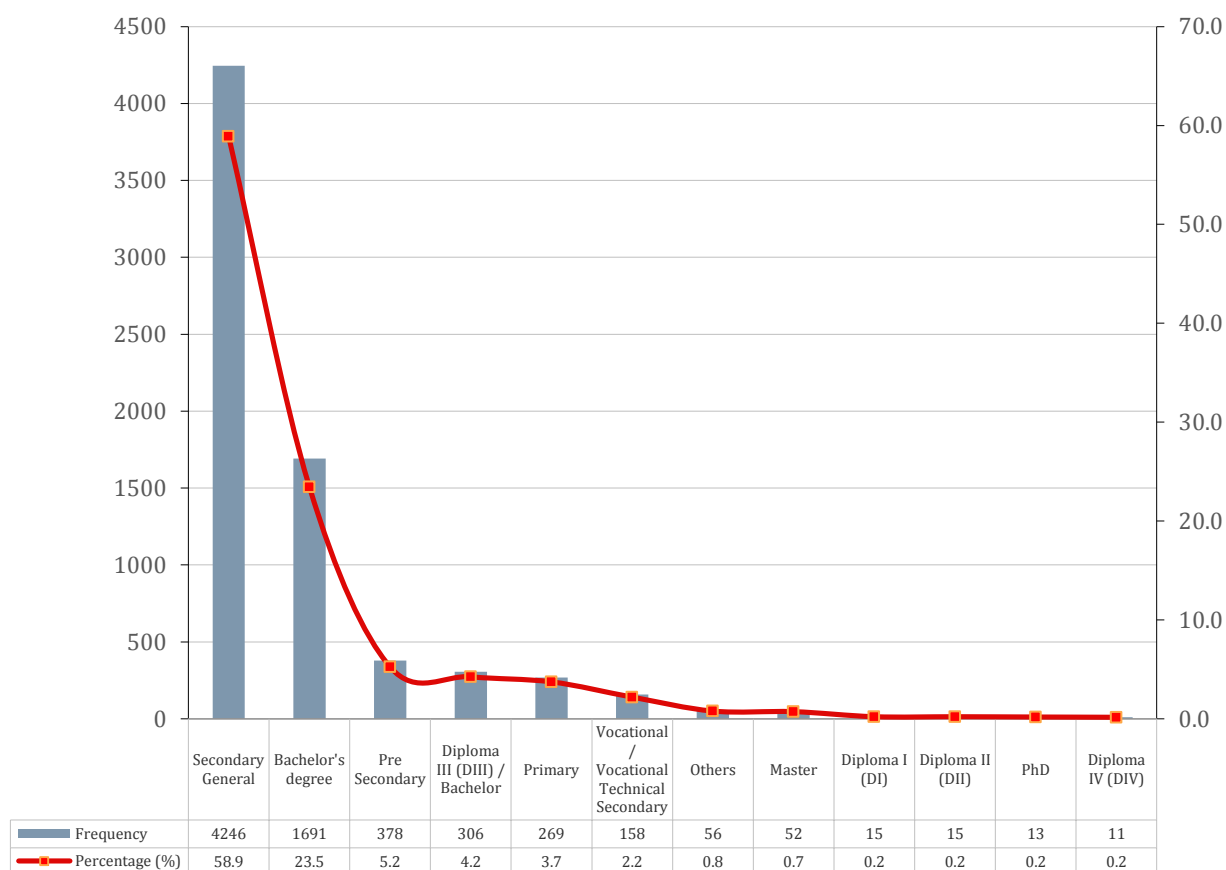
Figure 10 (d) lists temporary public sector employees by occupation and years of service. The occupational pattern is similar to the permanent staff with the domain of employees and teachers. Both represent 56.6% of temporary staff. However, the standard of service duration is very different from permanent staff, with 56.9% of temporary staff with less than 6 years of service.

Figure 10 (d) Distribution of temporary public sector employees by occupation and years of service.



At the level of education, 58.9% of temporary public servant have a secondary education and a degree of 23.5%. Those with Diploma III, technical vocational education, pre-secondary and primary education account for between 2 - 5% and the rest have a percentage less than 1% (Figure 10 (e)).

Figure 10 (e) Distribution of temporary public servant for the public sector by levels of education.



3.7.3. PNTL (Police) and F-FDTL (Defence Force)

Regarding PNTL distribution by position, category and years of work (*Figure 11*), of the 2,116 servers surveyed, the results of the data and information collected allowed the identification of the profile of most of the servers surveyed: being in the effective position as a soldier and agent the highest proportion with years of service between 1 - 5 years and 11 - 15 years. Among the division or unit PNTL servers surveyed the predominance of category is agent and sergeant (*Figure 12*).

Figure 11. Distribution of PNTL respondents by category, position and years of work

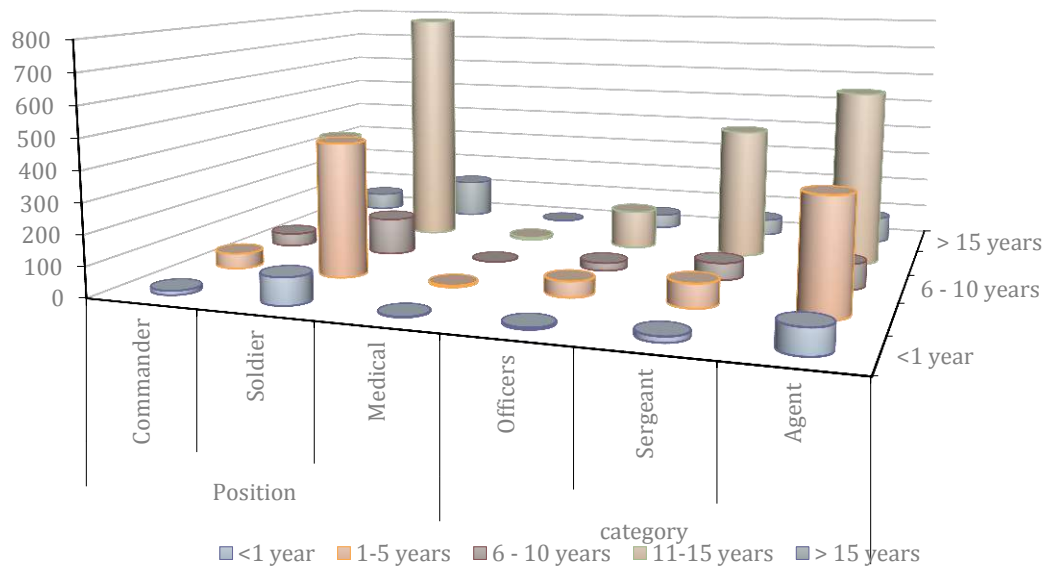
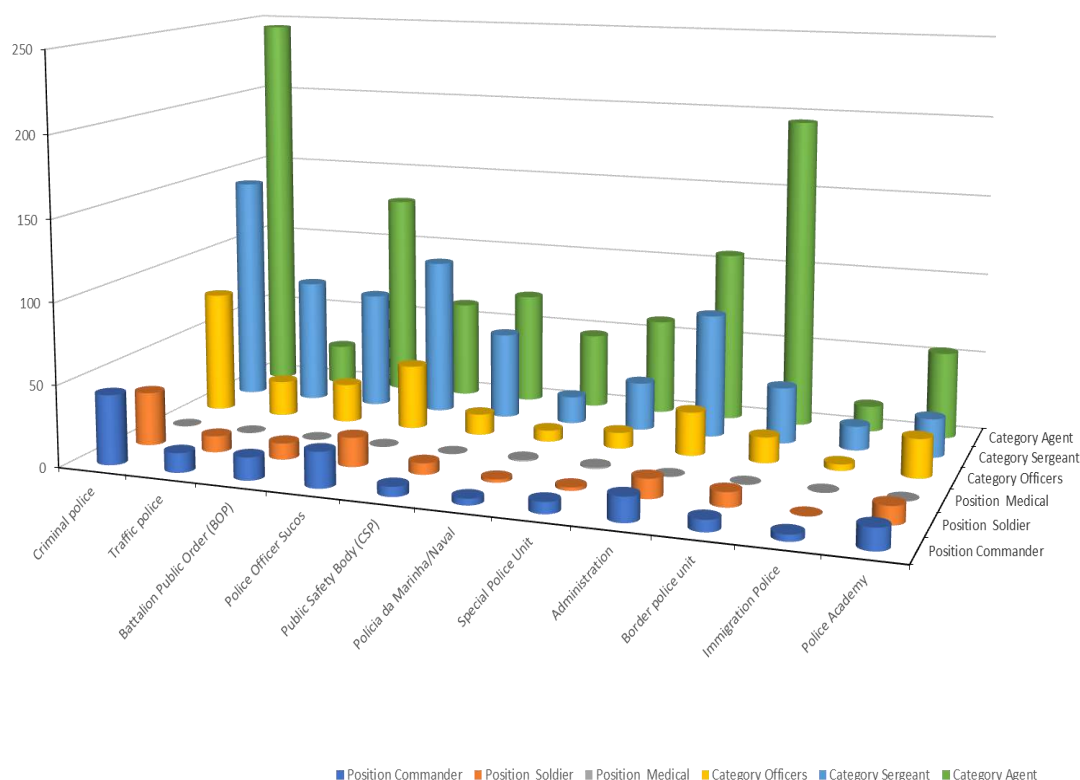


Figure 12. Distribution of PNTL respondents by category, position and by division/Unit



Regarding the distribution of F-FDTL, the occupational pattern by position, category and years of work (Figure 13), of the 815 respondent servers, the result is similar to PNTL. The effective position as soldier and square is predominant with

greater years of work between 1-5 years. Land / army forces constitute the largest number of effective members with rank / rank of soldier / square (*Figure 14*).

Figure 13. Distribution of F-FDTL respondents by category, position and years of work

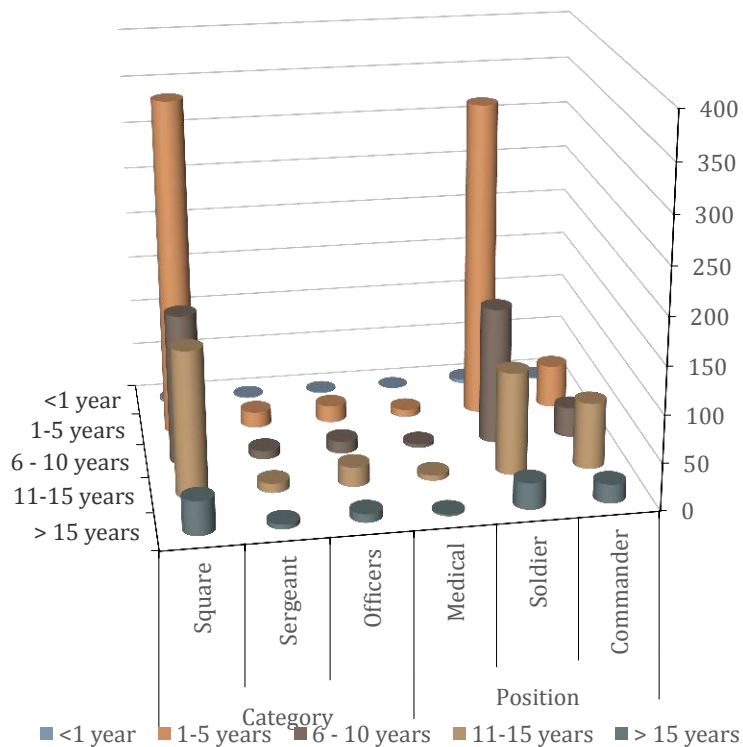
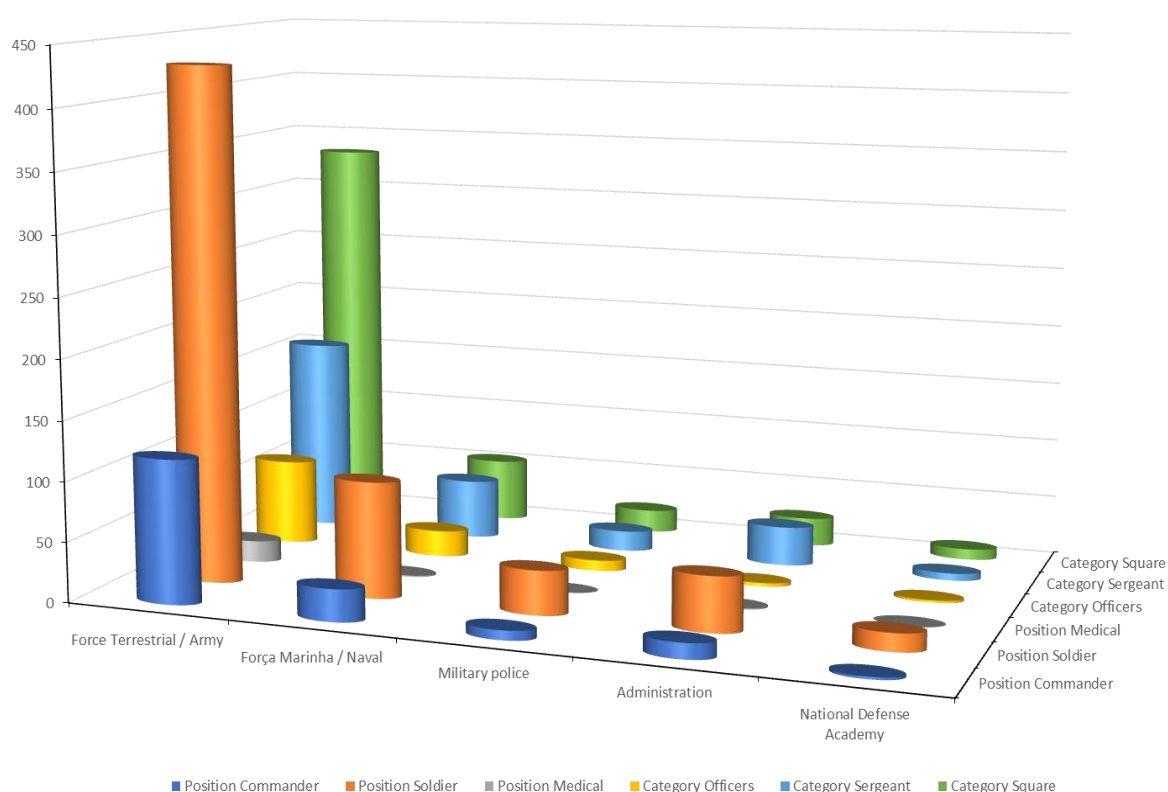
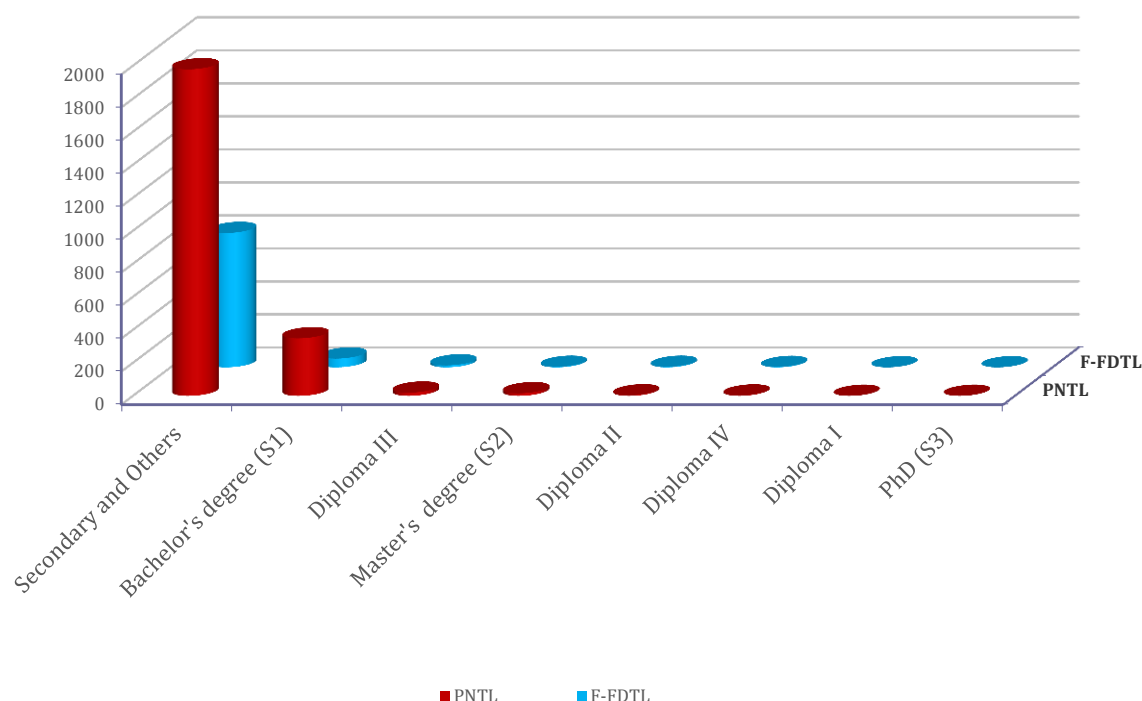


Figure 14. Distribution of F-FDTL respondents by category, position and by division / Unit



With regard to educational level, the highest proportion of staff has a secondary education level, namely 83.5% in PNTL and 91.8% in F-FDTL. Both represent an average percentage of 87.7% of respondents. The second highest proportion of the education level is the degree, with 14.5% in the PNTL compared to only 5.97% in the F-FDTL. Other levels of schooling have a very reduced percentage even at some levels no person was found, with the PhD and Diploma I degree (Figure 15).

Figure 15. Distribution of Education level of the effective PNTL and FFDTL respondents



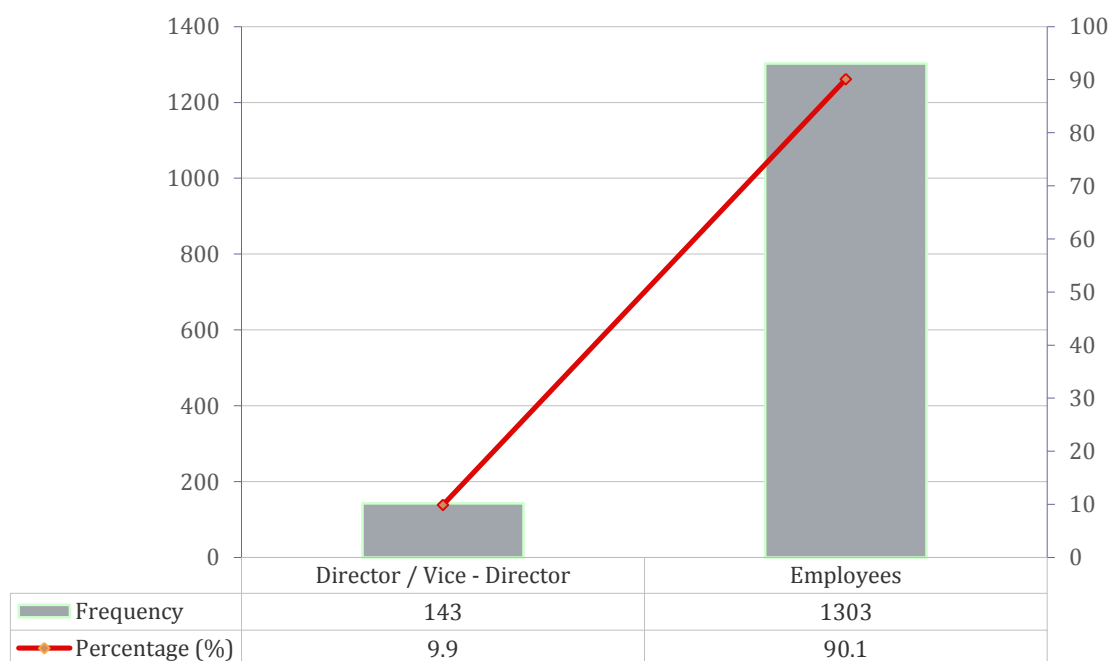
3.8. Non – Public Sector (Private Sector)

Unlike the public sector, the non-public sector remains small in Timor-Leste, at least if farmers who do not work for a private business are excluded. This, despite the growth of the non-public sector being one of the main objectives of the government and the majority of those who do not currently work have expressed interest in working in the non-public sector. However, despite the desire to work in the non-public sector, much of this work requires good educational qualifications. The result of this work provides several relevant evidence.

3.8.1. Non Governmental Organization (NGO's) and Private Universities

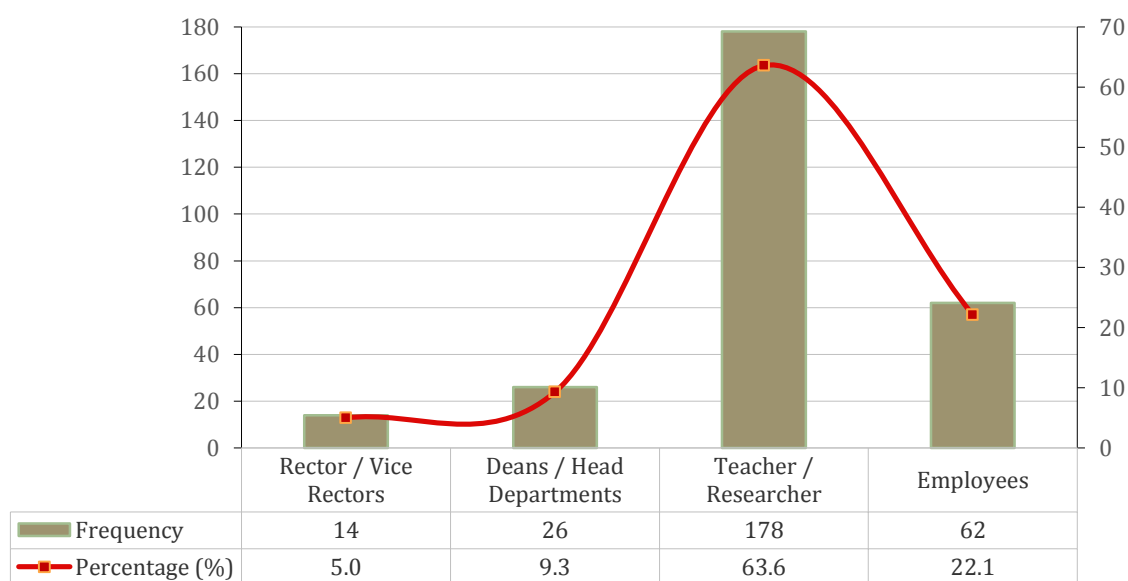
Figure 16 (a) shows data for staff working in Non-Governmental Organizations (NGO's). Of the 1,446 respondents, 9.9% hold positions as Director or Deputy Directors of the organizations and the highest percentage are employees.

Figure 16. (a) Staff of Non-Governmental Organizations (NGOs) by position



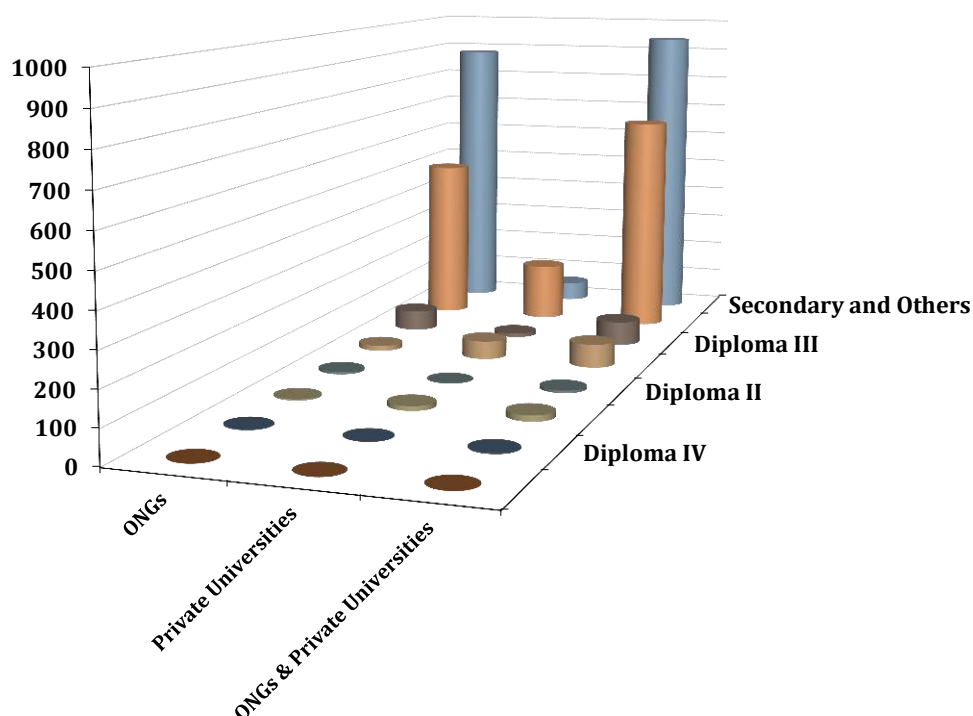
Regarding the employees of the Private Universities (Figure HV), the data show that the professors-researchers are the largest percentage with 63.3% and the employees occupy 22.1%. The management positions are occupied by 5-10% of the total number of respondents (Figure 16 (b)).

Figure 16 (b) Personal staff of the Private Universities by position



As for the level of education that the employees hold, there was a difference between the employees of the NGOs and the Private Universities. Of the employees surveyed, the predominance of schooling is secondary level in NGO's, while in private universities the highest level is Bachelor level (*Figure 16 (c)*).

Figure 16 (c). Non-Governmental Organization (NGO) staff serve and private Universities by position



	ONGs	Private Universities	ONGs & Private Universities
Secondary and Others	883	59	942
Bachelor's degree (S2)	504	177	681
Diploma III	62	12	74
Master	16	56	72
Diploma II	7	1	8
PhD (S3)	4	14	18
Diploma IV	2	1	3
Diploma I	1	0	1

3.8.2. Entrepreneurs or Businessman

Entrepreneurs and the state are two strategic agents of development. The state creates the opportunities, establishes the conditions and the stimuli proper to the investment, according to a general plan of reorganization of the productive system.

Entrepreneurs seize opportunities by reorganizing production factors at the company level.

Entrepreneurs play an important role through their investments, increasing the prosperity of the national population. Citizens of a country have the opportunity to have a job through investment, services and increased trade, in addition to the country grow economically. In this sense, it is essential to understand the human resources involved in this process and try to enable them efficiently and effectively. Figure 17 (a) shows the distribution of the personnel involved in the company by level of education and by position in which it currently assumes. 70.1% of the respondents are employed as director / vices directors and 29.9 assume the role as director simultaneously as an employee of the same company. More than 50% have a level of knowledge of secondary level, 16.3% undergraduate and 10% with pre-secondary level. Other levels of education have a percentage less than 10%.

The greater proportion of the areas of activity of the companies is related to the construction, commerce-repair and lodging-food. The data also show that most of the people involved have a secondary level of education followed by a bachelor's degree. Graduates are more employed in the construction area (Figure 17 (b)).

When analyzing the presence of entrepreneurs and their qualifications is essential for the growth of the country. Raising the level of education, the country inserts its citizens into a productive economy, giving them the opportunity to be entrepreneurs or innovators, through a good education. In this way, the two main needs for the economic development of the country are met: the presence of qualified personnel and the class of entrepreneurs. Entrepreneurs need capital for potentially profitable areas and need qualified personnel. When these two factors meet their needs, economic development is recorded in the country and employment increases. Thus, the presence of entrepreneurs and the training of qualified personnel are crucial for the countries.

Figure 17. (a). Distribution of entrepreneurs by position and level of education

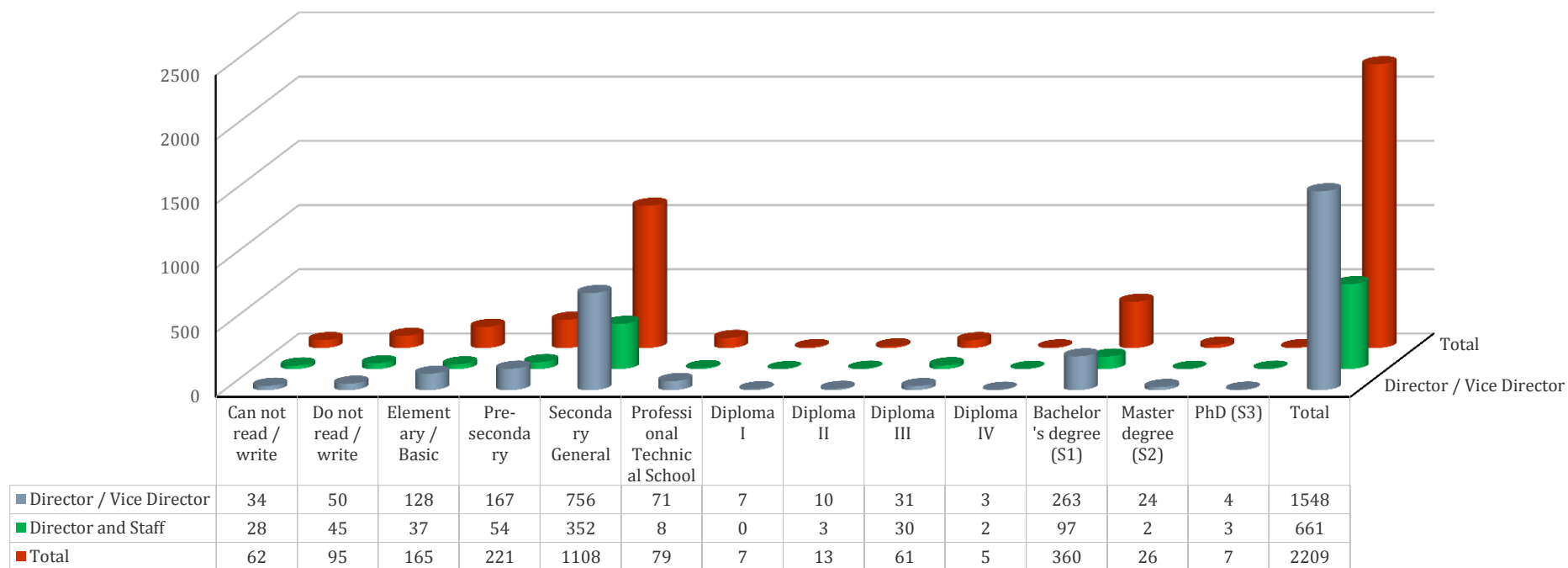
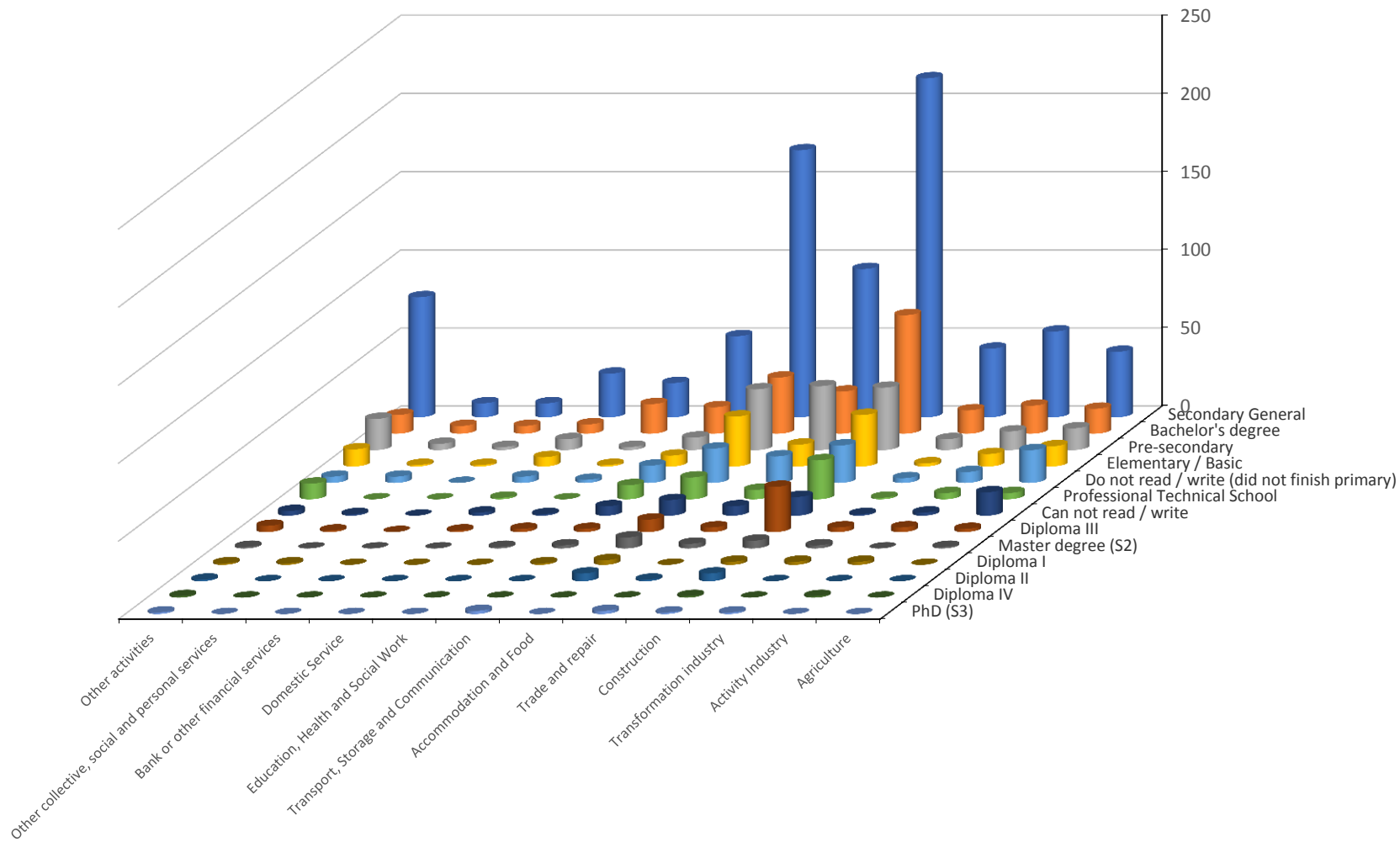


Figure 17 (b). Distribution of areas of activity by education level of entrepreneurs

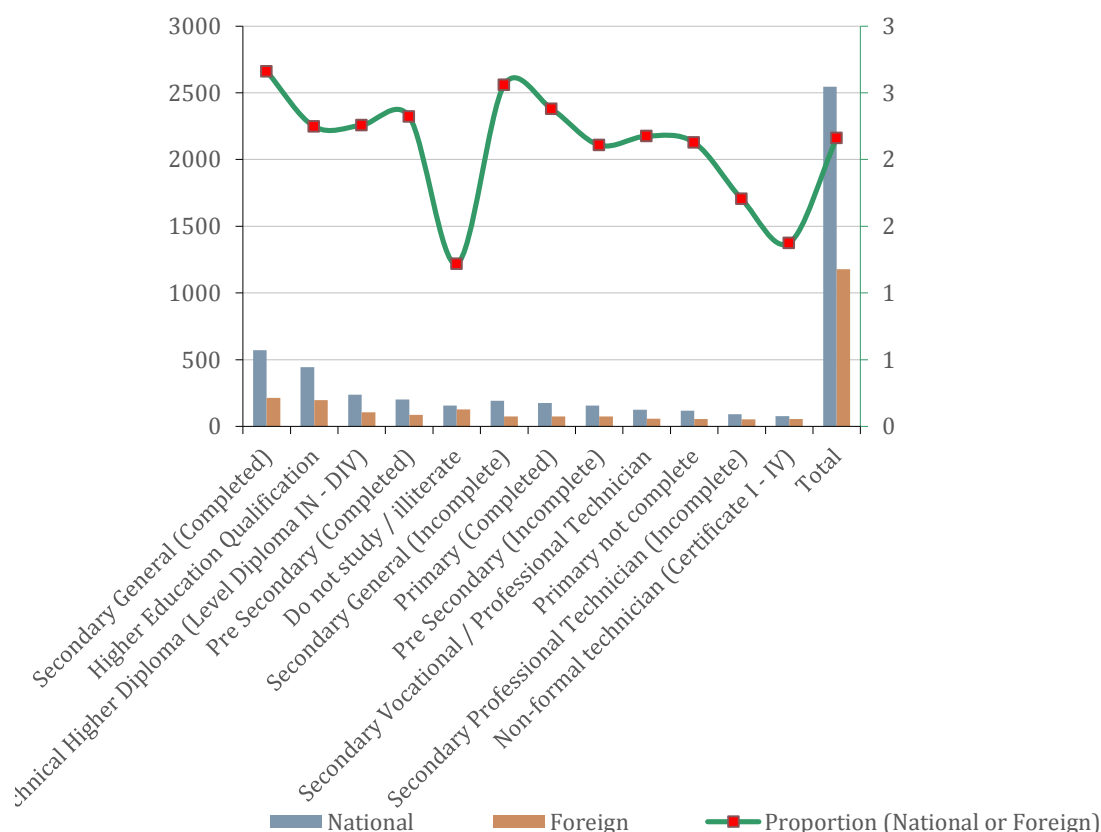


3.9. Numbers and qualification of national and foreign personnel working in Private companies

This paper also provides information on the number and qualifications of persons working in private enterprises, whether domestic workers or foreign workers (*Figures 17 (c)*). Figures show that employees working in private enterprises completed regular or general secondary education (21.1%) and higher education (17.3%), a higher number than those who qualifications), as well as technical vocational education with only 4.9%, medium - high technician (Diploma I - Diploma IV) 9.3% and non - formal technician (Certificate I - IV) 3.6%. Workers with other educational levels are between 3.6% and 8%.

The proportion of national workers compared with foreign workers working in a company according to the level of education is also verified. As can be seen in Figure 17 (c), the average proportion is 2: 1, that is, in every 2 national workers in a company there is at least 1 foreigner. The highest proportion is in the complete and incomplete secondary education level with 3: 1 and the lowest 1: 1 ratio is observed in people with a level of non-formal technical knowledge (Certificate I - IV) and in the illiterate write).

Figuras 17 (c). Number of qualification and proportion of national and foreign staff working in companies



3.10. Other forms of employment (Occupation)

It is understood as occupation the task or function that a person develops. The data collected show a variation of occupations that requires grouping and classification. The classification of occupations is the tool that allows organizing them into a series of groups defined according to the tasks performed, likewise allows to aggregate the information organizing the occupations within a hierarchical or categorized structure. The most disaggregated level of occupational classification brings together similar work to allow for its statistical treatment.

Table 16 shows the data of the occupations categorized or grouped according to the municipalities. The vast majority of the adult population of East Timor is involved in different forms of public and private employment activities as discussed above. This paper also examined the status of the industry of other individuals who do not formally work in the public and private sector. Table 16

lists 272,913 identified individuals who are involved, by a broad industry classification. The table is dominated by agriculture, forestry and fisheries, representing 144,341 people or 52.9% of the total, and activities of households as employers, including undifferentiated activities of production of household goods and services for their own use, representing 77,328 persons or 28, 3% of respondents. Wholesale and retail trade in conjunction with repair of motor vehicles and motorcycles is occupied by 16,344 people or 6%. As discussed earlier in section 2.5, not all individuals in the second grouping would be considered employed in some international definitions of the workforce. The remaining 13% are spread over a wide range of activities, with the largest groups supporting administrative services, other service activities and support to construction (*Table 16*).

Table 16. Grouping and classification of occupation

No.	Grouping Of Occupations	Municipalities													Timor-Leste	(%)
		Aileu	Ainaro	Baucau	Bobonaro	Covalima	Dili	Ermera	Lautém	Liquiça	Manatuto	Manufahi	Raeoa-Oecusse	Viqueque		
1	Agriculture, forestry and fishing	10260	11342	13397	20744	6262	5388	20479	7582	10089	4981	9261	11443	13113	144341	52,9
2	Activities of households as employers; undifferentiated activities of production of goods and services of families for own use	1803	2799	5268	7977	5300	15713	10727	4206	5788	4999	2560	5191	1	77328	28,3
3	Wholesale and retail trade; Repair of motor vehicles and motorcycles	972	522	621	1818	515	3413	1478	911	1744	857	1054	1329	10	16344	6,0
4	Support activities for administrative services	173	195	331	307	223	5923	241	157	363	300	188	361	253	8891	3,3
5	Other service activities	69	98	242	326	85	2905	467	227	450	685	154	328	1110	6272	2,3
6	Construction	202	187	256	804	170	1185	601	333	615	431	307	871	13	6215	2,3
7	Artistic entertainment and recreation	5	85	137	825	221	144	1040	442	191	43	33	2159	9	5460	2,0
8	Public administration and defense; compulsory social security	167	143	250	320	147	1560	338	123	285	260	202	310	14	4409	1,6

No.	Grouping Of Occupations	Municipalities													Timor-Leste	(%)
		Aileu	Ainaro	Baucau	Bobonaro	Covalima	Dili	Ermera	Lautém	Liquiça	Manatuto	Manufahi	Raeoa-Oecusse	Viqueque		
9	Professional scientific and technical activities	20	24	44	97	29	560	85	57	52	22	75	48	3	1133	0,4
10	Accommodation activities and food services	14	10	30	104	16	418	22	22	101	27	27	19	20	819	0,3
11	Activities of extraterritorial organizations and bodies	18	12	21	8	5	365	22	9	26	9	11	12	129	526	0,2
12	Education	2	5	56	22	13	165	62	9	20	9	12	13	304	440	0,2
13	Information and Communication	4	6	20	25	10	251	11	10	9	6	11	17	52	394	0,1
14	Human health and social work activities	9	14	14	27	18	153	21	7	49	6	43	6	10	377	0,1
15	Financial and insurance activities	0	4	3	7	3	102	4	1	9	1	3	7	135	147	0,1
16	Supply of gas, electric power and air conditioning	1	0	8	10	2	72	5	5	13	6	10	2	236	144	0,1
17	Transport and storage	5	4	2	31	1	17	10	2	28	3	5	14	4997	135	0,0
18	Mines and Quarries	8	1	21	0	2	59	2	7	22	3	1	0	8	127	0,0
TOTAL		13717	15437	20696	33362	13011	38139	35586	14088	19803	12618	13933	22119	20404	272913	100,0

3.11. Preferred Areas of Work

As noted above, the private sector remains small in Timor-Leste, at least if farmers not working for a private business are excluded. This is in spite the fact the growth of the private sector is a major goal of the Government and a majority of those not currently working expressed an interest in working in the private sector. However, in spite of a desire to work in the private sector, much of the staff work in the private sector requires good educational qualifications.

This work also asked people aged 17 or over who never worked to indicate where they would like to work if they could get a job.

Figure 18 (a) shows that about 73.5% chose the private rather than the public sector. This choice was largely invariant at all ages, but the preference for the private sector was slightly higher among young people aged 17-36 years (Figure 18 (b)).

Figure 18 (c) indicates that in the private sector the preference is mainly for agriculture (53.7%) and housekeeping duty (13%), with 6-7% preferring industry and construction. In addition to the younger age groups, there are a number of people who have never worked particularly women, and these preferences are consistent with the general practice of women noted above to occupy large numbers of jobs, particularly in agriculture and housekeeping duty or cleaning.

Figure 18. (a). Total number of respondents seeking employment and claiming to work in the public or private sector by Municipalities

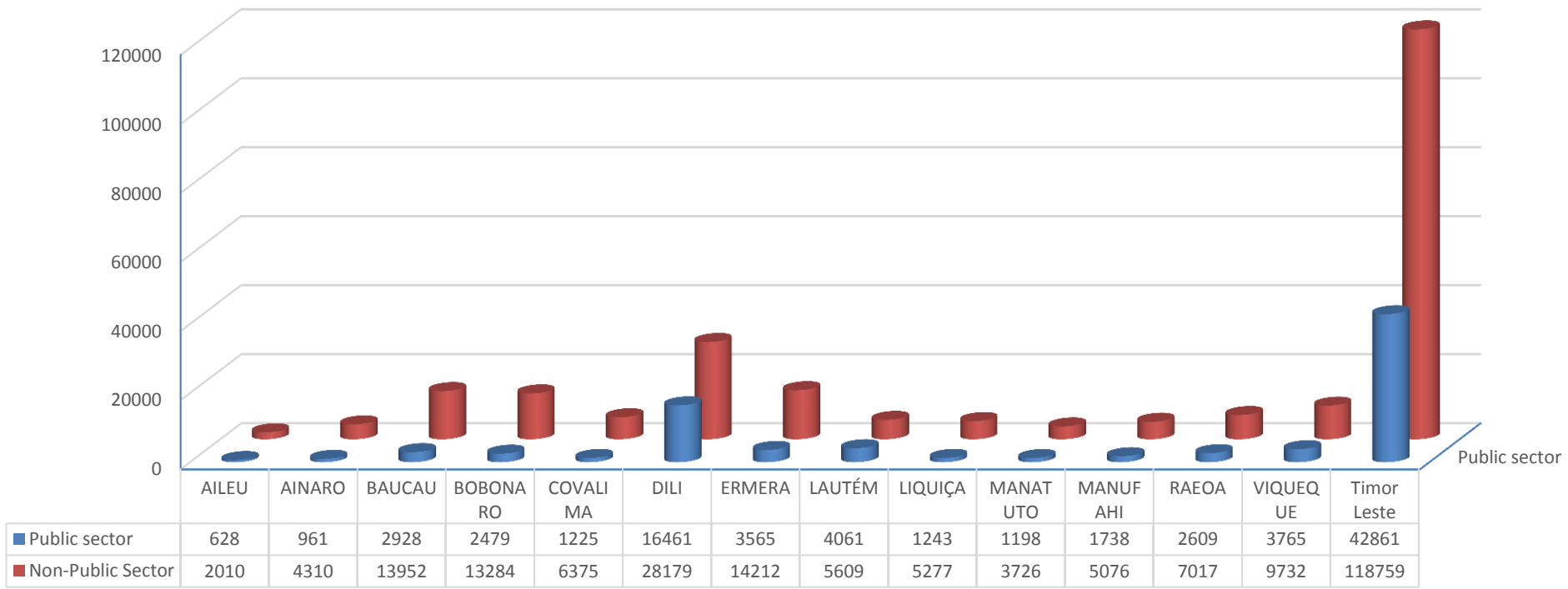


Figure 18 (b). Age groups of respondents search for a job

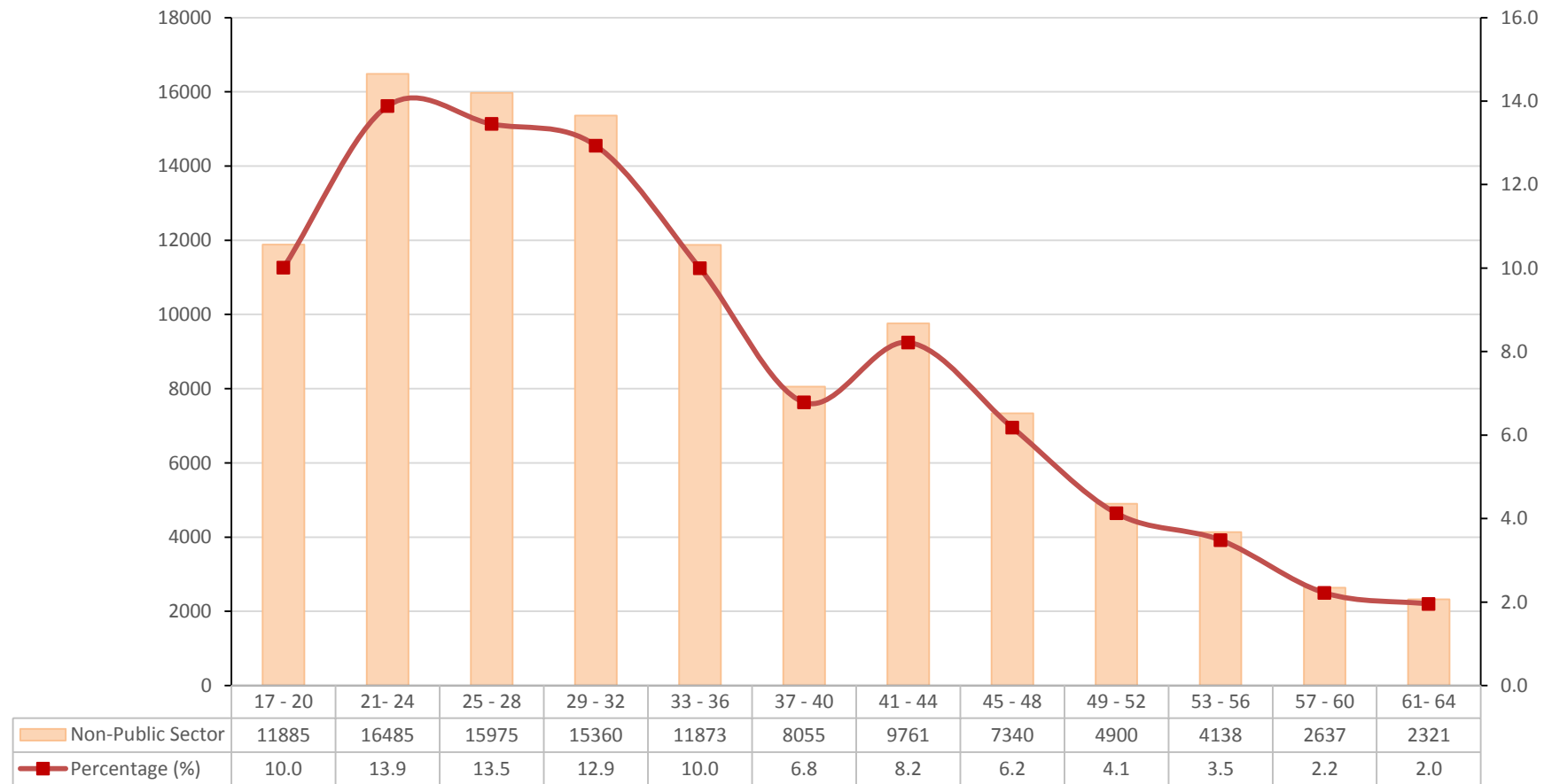
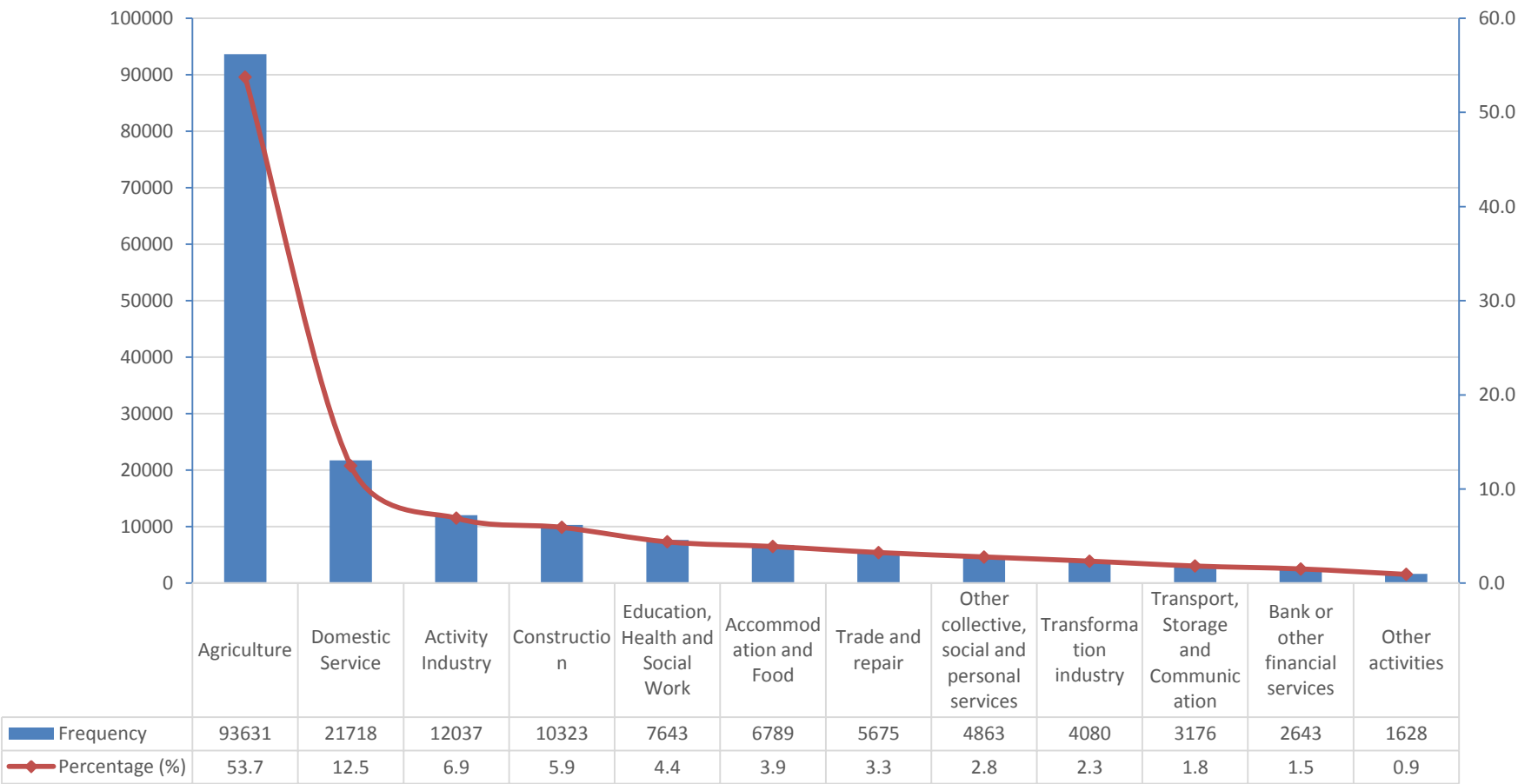


Figure 18 (c). Area of employment intending to work



3.12. Graduated to job search "Unemployment"

The work also provides information on the number and qualifications of people with higher education to job search (*Table 17*). The figures show that of the 3,880 respondents, 64% intend to work in the public sector and only 36% intend to work in the non-public sector. Compared with the responses of all respondents seeking employment (*Figure 16 (a)*), graduates intend to work more in the public sector rather than the private sector.

The areas of higher education courses with the highest number of graduate and postgraduate job seekers, "unemployment", are: Management, Law, Engineering Computer Technology, Accounting, Civil Engineering - Civil Construction, Mine Engineering, Medicine - Clinical Medicine Medicine), Mathematics, Human Resource Management, Animal Production (*Livestock*) and Economics. Details can be seen in table 17.

Table 17. Number and area of knowledge of higher education courses who are search for jobs

No.	Program of study or Area of specialization	Do not work and want to work?		Total	Percentage (%)
		Public sector	Non-Public Sector		
1	Management	199	116	315	8,1
2	Law	173	87	260	6,7
3	Computer technology engineering (Computer)	142	100	242	6,2
4	Accounting	131	90	221	5,7
5	Civil Engineering - Civil Construction	110	96	206	5,3
6	Mining Engineering	78	61	139	3,6
7	Medicine - Medical Practice (General Practice)	80	33	113	2,9
8	Mathematics	87	23	110	2,8
9	Human resource Management	59	31	90	2,3
10	Livestock Production	47	36	83	2,1
11	Economy	43	39	82	2,1
12	Agronomy	50	24	74	1,9

No.	Program of study or Area of specialization	Do not work and want to work?		Total	Percentage (%)
		Public sector	Non-Public Sector		
13	Economy Finance or financial management - Banking economics	41	31	72	1,9
14	Nursing	51	18	69	1,8
15	International, bilateral and multilateral relations	36	27	63	1,6
16	Pedagogical biology	42	18	60	1,5
17	Education	45	13	58	1,5
18	Tourism and Hospitality	32	25	57	1,5
19	Mathematics teaching	40	14	54	1,4
20	English language	29	24	53	1,4
21	Sociology of Education	45	8	53	1,4
22	Public policy	34	17	51	1,3
23	Architecture engineering	30	20	50	1,3
24	Mechanical Engineering	28	21	49	1,3
25	Agro-business	31	18	49	1,3
26	Public health	31	16	47	1,2
27	Electrical engineering	24	18	42	1,1
28	Public administration	27	12	39	1,0
29	Midwife	28	9	37	1,0
30	Portuguese language	29	6	35	0,9
31	Aquaculture	19	16	35	0,9
32	Public law	21	14	35	0,9
33	Physics of Teaching	25	7	32	0,8
34	Administration	27	4	31	0,8
35	Pharmacy	24	7	31	0,8
36	Geology	23	7	30	0,8
37	Philosophy	16	9	25	0,6
38	Political science	16	8	24	0,6

No.	Program of study or Area of specialization	Do not work and want to work?		Total	Percentage (%)
		Public sector	Non-Public Sector		
39	Development Studies	14	9	23	0,6
40	Government Planning and Policy	10	12	22	0,6
41	Business Administration	14	7	21	0,5
42	Teacher Training	13	8	21	0,5
43	General - Environmental Biology	12	8	20	0,5
44	Computer science	16	4	20	0,5
45	Mechanical Engineering	15	4	19	0,5
46	Communication - Journalism and Publishing	9	10	19	0,5
47	Food Technology	10	7	17	0,4
48	Clinical Analyst	11	4	15	0,4
49	Theology	8	7	15	0,4
50	Government - Comparative Government Systems	11	3	14	0,4
51	Petrology	8	5	13	0,3
52	Dentist	8	5	13	0,3
53	Teaching chemistry	7	6	13	0,3
54	Training of primary and pre-secondary teachers	10	3	13	0,3
55	Pharmacology	12	0	12	0,3
56	Forestry Management	7	5	12	0,3
57	Chemical engineering	6	5	11	0,3
58	Catechism	9	2	11	0,3
59	Agricultural engineering	4	6	10	0,3
60	Economics of education	7	3	10	0,3
61	Special education	5	5	10	0,3
62	Chemistry	5	4	9	0,2
63	Applied Linguistics	4	5	9	0,2

No.	Program of study or Area of specialization	Do not work and want to work?		Total	Percentage (%)
		Public sector	Non-Public Sector		
64	Industrial economics	8	1	9	0,2
65	Social work	5	4	9	0,2
66	Physics	8	0	8	0,2
67	Sociology	3	5	8	0,2
68	Environmental engineering	6	2	8	0,2
69	Engineering of agricultural product processing	3	5	8	0,2
70	Environmental ecology	2	5	7	0,2
71	Geotechnical Engineering	4	3	7	0,2
72	Forest resources and forestry	5	2	7	0,2
73	Transport Engineering and Telecommunications	5	2	7	0,2
74	Nutrition	4	3	7	0,2
75	Technology and Use of Forest Products	4	3	7	0,2
76	Economics of Education or Management of Education	6	1	7	0,2
77	Immunology	2	4	6	0,2
78	Indonesian language	5	1	6	0,2
79	Mineralogy	2	4	6	0,2
80	Marine and oceanic engineering	1	5	6	0,2
81	Physical Education or Sports Education	5	1	6	0,2
82	Fishing engineering	6	0	6	0,2
83	Gastronomic science	4	2	6	0,2
84	Business Administration	5	1	6	0,2
85	Computer Management	4	2	6	0,2
86	Moral Theology	0	6	6	0,2
87	Educational Psychology	5	1	6	0,2
88	Education (education) Pre-primary and primary	5	1	6	0,2

No.	Program of study or Area of specialization	Do not work and want to work?		Total	Percentage (%)
		Public sector	Non-Public Sector		
89	Pathological Anatomy and Clinical Pathology	4	1	5	0,1
90	Religious career	2	3	5	0,1
91	Clinical and animal surgery	2	3	5	0,1
92	Philosophy of Education	4	1	5	0,1
93	Pastoral theology	1	4	5	0,1
94	Biochemistry	3	1	4	0,1
95	Biophysics	2	2	4	0,1
96	Mineral Engineering	3	1	4	0,1
97	Agriculture Socio Economic	3	1	4	0,1
98	Food Science and Technology	3	1	4	0,1
99	Radiation, Radiologia Medic	3	1	4	0,1
100	Environmental health	3	1	4	0,1
101	Maternal and Child Health	2	2	4	0,1
102	Regional and Urban Economics	4	0	4	0,1
103	Peace studies	4	0	4	0,1
104	Skills Education - Fashion, Cosmetics, Cake - Pastry	3	1	4	0,1
105	Genetics	1	2	3	0,1
106	Zoology	2	1	3	0,1
107	Hydraulic Engineering	1	2	3	0,1
108	Anthropology	3	0	3	0,1
109	Psychology	2	1	3	0,1
110	Psycholinguistics	3	0	3	0,1
111	Production engineering	1	2	3	0,1
112	Phytosanitary	0	3	3	0,1
113	Floriculture, Parks and Gardens and Arborization of Public Roads	2	1	3	0,1

No.	Program of study or Area of specialization	Do not work and want to work?		Total	Percentage (%)
		Public sector	Non-Public Sector		
114	Preventive Veterinary Medicine	3	0	3	0,1
115	Sea water resources	1	2	3	0,1
116	Public relations	3	0	3	0,1
117	Botany	2	0	2	0,1
118	Materials Engineering and Metallurgy	1	1	2	0,1
119	Anesthetist	1	1	2	0,1
120	Veterinary Medicine	1	1	2	0,1
121	History and geography	2	0	2	0,1
122	Sociolinguistics and Dialectology	2	0	2	0,1
123	Japanese language	2	0	2	0,1
124	Plant biology	1	1	2	0,1
125	Aerospace or Aerospace Engineering	1	1	2	0,1
126	Forestry Techniques and Operations	0	2	2	0,1
127	Water and Soil Engineering	1	1	2	0,1
128	Rural Buildings and the Environment	2	0	2	0,1
129	Private law	2	0	2	0,1
130	Video arts	1	1	2	0,1
131	Educational politics	2	0	2	0,1
132	Educational technology	2	0	2	0,1
133	Geosciences	1	0	1	0,0
134	Specialist in Cardiovascular Surgery	1	0	1	0,0
135	Specialist in Orthopedic Surgery	0	1	1	0,0
136	Specialist in Pediatric Surgery	1	0	1	0,0
137	Specialist in Plastic Surgery and Restoration	1	0	1	0,0
138	Archeology	1	0	1	0,0
139	Gender study	1	0	1	0,0

No.	Program of study or Area of specialization	Do not work and want to work?		Total	Percentage (%)
		Public sector	Non-Public Sector		
140	Spanish language	1	0	1	0,0
141	Hospital administration	0	1	1	0,0
142	Biomedicine	1	0	1	0,0
143	Fashion design	0	1	1	0,0
144	Astronomy	0	1	1	0,0
145	Meteorology	1	0	1	0,0
146	Geodesy	0	1	1	0,0
147	Parasitology	1	0	1	0,0
148	Sanitary engineering	0	1	1	0,0
149	Obstetric specialist or gynecologist	1	0	1	0,0
150	Internal specialist	1	0	1	0,0
151	Pediatric Specialist	1	0	1	0,0
152	Physiotherapy and Occupational Therapy	1	0	1	0,0
153	Legal Medicine and Deontology	1	0	1	0,0
154	Dentistry	1	0	1	0,0
155	Optometry	1	0	1	0,0
156	Psychiatry	1	0	1	0,0
157	Soil Science	0	1	1	0,0
158	Agrometeorology	0	1	1	0,0
159	Nutrition and animal feed	0	1	1	0,0
160	Animal Reproduction	0	1	1	0,0
161	Marine fisheries resources	1	0	1	0,0
162	Administration of Specific Sectors	1	0	1	0,0
163	Architecture and urbanism	1	0	1	0,0
164	Urban and regional planning	1	0	1	0,0
165	Demography	1	0	1	0,0

No.	Program of study or Area of specialization	Do not work and want to work?		Total	Percentage (%)
		Public sector	Non-Public Sector		
166	Information Science	0	1	1	0,0
167	Museology	0	1	1	0,0
168	Domestic economy	1	0	1	0,0
169	Economy - Cooperativa - Mercado	1	0	1	0,0
170	Visual arts	1	0	1	0,0
171	Theater	1	0	1	0,0
172	Movie theater	1	0	1	0,0
173	Cultural Studies	0	1	1	0,0
174	Mechatronics Engineering	1	0	1	0,0
175	Educational Planning and Evaluation	1	0	1	0,0
176	Specific curricula for levels and types of education	1	0	1	0,0
177	Others	26	14	40	1,0
Total		2,483	1,397	3,880	100
Percentage (%)		64%	36%	100%	

Table 18 shows the number of respondent students who are currently attending higher education in different study programs. The numbers show that the areas of study, where their graduates have more "unemployment", still remain areas with greater numbers of students. This may increase the number of job seekers in particular in the areas identified above in Table 17. In addition, it is expected that there will be more graduates in the areas of Management, Public Health, Information Technology (Computer) Engineering, Civil Engineering - Construction Civil, International Relations, Bilateral and Multilateral, Mining Engineering, Accounting, Tourism and Hospitality, Economics Finance or financial management - Banking Economics, Law and more other areas can be seen in table 18. This situation is due to the fact that courses offered by Higher Education Institutions in any way are similar. On the other hand, the low diversity of the provision of

training in relation to high demand means that the majority of Timorese, after leaving secondary school, have the only opportunity to opt for the same courses.

Table 18. Distribution of the number of students currently attending courses and prediction of the year in which the course will end

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
1	Management	510	400	251	281	63	11	1,516
2	Public health	259	354	241	230	68	7	1,159
3	Computer technology engineering (Computer)	328	268	194	209	89	11	1,099
4	Civil Engineering - Civil Construction	249	235	166	179	53	8	890
5	International, Bilateral and Multilateral Relations	228	172	130	171	46	2	749
6	Mining engineering	173	181	127	144	65	3	693
7	Accounting	181	154	149	143	48	3	678
8	Tourism and Hospitality	163	161	107	164	61	13	669
9	Economy Finance or finance management - Banking Economy	178	155	124	140	44	7	648
10	Law	190	160	125	113	50	9	647
11	Portuguese language	154	126	104	115	39	7	545
12	English language	124	113	110	141	50	5	543
13	Nursing	105	114	95	126	56	8	504
14	Education	149	91	74	78	35	4	431

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
15	Public administration	102	111	69	74	23	2	381
16	Public Law	86	89	54	79	21	4	333
17	Agronomy	105	69	40	50	17	1	282
18	Architecture engineering	73	62	54	42	14	1	246
19	Physics	45	47	43	66	20	3	224
20	Medicine - Medical Clinic (General Practice)	36	51	40	53	20	12	212
21	Development Studies	80	44	21	42	14	2	203
22	General - Environmental Biology	38	41	30	65	17	3	194
23	Mathematics	43	43	28	55	21	3	193
24	Communication - Journalism and Publishing	58	34	34	43	24	0	193
25	Chemistry	28	30	41	50	21	3	173
26	Teaching biology	43	23	23	65	13	4	171
27	Teacher training	35	41	32	48	13	0	169
28	Electrical engineering	71	34	17	38	6	1	167
29	Geology	35	52	35	31	5	4	162
30	Livestock Production	47	42	35	33	4	1	162

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
31	Mechanical Engineering	51	35	24	38	8	1	157
32	Public policy	47	45	27	28	5	0	152
33	Sociology	37	37	25	41	10	0	150
34	Mechanical Engineer	46	27	43	23	9	0	148
35	Midwife	31	54	26	24	11	2	148
36	Philosophy	21	29	55	32	8	1	146
37	Political science	42	26	34	36	4	1	143
38	Human resource Management	35	41	22	23	10	0	131
39	Agro-business	32	32	18	32	10	1	125
40	Computer Management	25	43	16	22	6	1	113
41	Pharmacy	23	23	15	33	12	1	107
42	Teaching mathematics	21	26	24	24	7	0	102
43	Petrology	26	28	23	15	7	1	100
44	Government Science or Comparative Government Systems	44	22	9	19	3	1	98
45	Teaching Physics	11	18	16	43	7	0	95
46	Teaching chemistry	10	15	19	37	12	2	95
47	Aquaculture	37	19	16	12	5	3	92

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
48	Physical Education or Sports Education	21	17	20	23	6	1	88
49	Computer science	20	19	22	11	8	0	80
50	Economics of education	20	23	9	19	3	0	74
51	Forestry Management	25	12	12	11	3	0	63
52	Study of Peace	26	10	16	7	3	0	62
53	Dentist	16	13	10	16	2	1	58
54	Nutrition	4	12	8	15	8	0	47
55	Tetum language	1	13	9	17	3	3	46
56	Social Economy Agricultural	6	14	7	6	4	0	37
57	Preventive Veterinary Medicine	15	12	4	4	2	0	37
58	Agricultural engineering	11	9	4	8	1	0	33
59	Business Administration	9	7	4	7	5	0	32
60	Moral Theology	12	5	2	4	7	2	32
61	Mineral Engineering	9	7	5	8	1	0	30
62	Clinical and Animal Surgery	16	5	4	1	1	1	28
63	Forest Resources and Forestry Engineering	7	12	6	2	0	0	27
64	Sociology of Education	7	5	6	7	2	0	27

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
65	Environmental health	5	5	7	7	2	0	26
66	Zoology	8	5	6	3	1	1	24
67	Agricultural Product Processing Engineering	8	4	9	3	0	0	24
68	Economics of Education or Management of Education	2	11	6	2	1	2	24
69	Business Analyst	3	1	3	12	3	1	23
70	Mineralogy	2	4	6	9	2	0	23
71	Food Technology	4	11	6	2	0	0	23
72	Psychology	11	8	2	0	0	0	21
73	Applied Linguistics	1	7	6	3	2	2	21
74	Gastroenterology Surgery Specialist	6	7	1	3	2	1	20
75	Fishing engineering	7	1	5	6	1	0	20
76	Environmental Engineering	3	5	6	3	2	0	19
77	Philosophy of Education	1	6	5	5	0	1	18
78	Special education	5	2	5	2	3	0	17
79	Veterinary Medicine	5	3	2	5	1	0	16
80	Government Planning and Policy	4	2	3	5	2	0	16

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
81	Information Science	3	3	3	6	1	0	16
82	Economy - Cooperativa -Market	4	3	4	5	0	0	16
83	Industrial Economics	5	6	3	1	0	0	15
84	Education (teaching) Preschool and primary	6	0	4	2	0	1	13
85	Theology	2	2	2	3	1	2	12
86	Chemical engineering	3	0	6	2	1	0	12
87	Social service	2	3	4	3	0	0	12
88	Anthropology	0	0	2	7	2	0	11
89	Psycholinguistics	1	3	1	4	0	1	10
90	Food Science and Technology	4	3	1	0	1	0	9
91	Private Law	4	1	2	2	0	0	9
92	Statistics	1	6	0	2	0	0	9
93	Artistic education	3	1	1	2	2	0	9
94	History and geography	1	1	4	2	0	0	8
95	<i>Radia gnóstica</i> , Medical radiology	3	1	3	1	0	0	8
96	primary and pre- secondary teachers training	1	3	2	2	0	0	8

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
97	Genetics	3	1	1	2	0	0	7
98	Pathological Anatomy and Clinical Pathology	2	4	0	0	1	0	7
99	Religious Career	3	1	1	1	1	0	7
100	Transportation and Telecommunication engineering	2	4	1	0	0	0	7
101	Forestry Techniques and Operations	4	0	0	3	0	0	7
102	Pharmacology	1	2	1	1	1	0	6
103	Materials and Metallurgical Engineering	0	1	0	5	0	0	6
104	Indonesia Language	1	1	0	1	3	0	6
105	Geodesy	3	1	1	1	0	0	6
106	Technology and Use of Forest Products	4	1	1	0	0	0	6
107	Skills Education - Fashion, Cosmetics, Cake - Pastry	0	3	0	3	0	0	6
108	Educational Psychology	2	3	0	1	0	0	6
109	Geosciences	2	0	0	2	1	0	5
110	Fishing Resources and Fisheries Engineering	2	0	2	0	1	0	5
111	Pediatric Specialist	1	1	3	0	0	0	5

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
112	Psychiatry	1	2	0	2	0	0	5
113	Maternal and Child Health	1	0	1	1	1	1	5
114	Floriculture, Parks and Gardens and Arborization of Highways	0	2	1	2	0	0	5
115	Educational politics	3	2	0	0	0	0	5
116	Hydraulic Engineering	0	0	0	2	2	0	4
117	Aerospace Engineering	1	1	0	2	0	0	4
118	Obstetric Specialist or Gynecologist	2	1	0	0	1	0	4
119	Physiotherapy and Occupational Therapy	2	2	0	0	0	0	4
120	Gerontology	0	0	2	1	1	0	4
121	Legal Medicine and Deontology	0	0	0	4	0	0	4
122	Conservation of Nature	2	0	1	1	0	0	4
123	Animal Reproduction	2	0	2	0	0	0	4
124	History of Education	0	0	3	1	0	0	4
125	Cultural studies	0	2	1	1	0	0	4
126	Environmental Ecology	1	0	0	2	0	0	3
127	Biochemistry	0	1	0	2	0	0	3

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
128	Cardiovascular Surgery Specialist	0	0	1	2	0	0	3
129	Hospital administration	0	0	0	3	0	0	3
130	Actuarial Sciences	1	1	0	1	0	0	3
131	Plant Biology	1	0	2	0	0	0	3
132	Optometry	0	0	0	3	0	0	3
133	Phytosanitary	1	2	0	0	0	0	3
134	Forestry	1	0	1	1	0	0	3
135	Ecology of Domestic Animals and Ethology	2	1	0	0	0	0	3
136	Marine Fishing Resources	0	0	1	0	2	0	3
137	Administration of Specific Sectors	1	0	2	0	0	0	3
138	Pastoral Theology	1	0	1	1	0	0	3
139	Geotechnical Engineering	1	0	1	0	0	0	2
140	Anesthetist	0	2	0	0	0	0	2
141	Pediatric Surgery Specialist	0	2	0	0	0	0	2
142	Specialist Plastic and Restorative Surgery	0	1	0	1	0	0	2
143	Gender Study	0	0	0	2	0	0	2
144	Sociolinguistics and Dialectology	0	1	1	0	0	0	2
145	Fashion design	0	0	1	1	0	0	2
146	Meteorology	1	0	0	1	0	0	2

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
147	Naval and Oceanic Engineering	0	0	1	1	0	0	2
148	Agrometeorology	0	2	0	0	0	0	2
149	Water and Soil Engineering	0	2	0	0	0	0	2
150	Nutrition and Animal Feed	0	0	1	1	0	0	2
151	Animal Pathology	0	0	0	2	0	0	2
152	Food Science	1	1	0	0	0	0	2
153	Food Engineering	0	1	1	0	0	0	2
154	Business Administration	2	0	0	0	0	0	2
155	Museology	2	0	0	0	0	0	2
156	Catechism	2	0	0	0	0	0	2
157	Theater	0	1	0	0	1	0	2
158	Botany	0	0	0	1	0	0	1
159	Immunology	0	0	0	0	1	0	1
160	Specialist Surgery Ophthalmology	0	0	0	0	0	1	1
161	Specialist Orthopedic Surgery	0	1	0	0	0	0	1
162	Archeology	0	0	0	1	0	0	1
163	Business Consulting	1	0	0	0	0	0	1
164	Biological Oceanography	1	0	0	0	0	0	1
165	Physical Oceanography	0	1	0	0	0	0	1

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
166	Production Engineering	1	0	0	0	0	0	1
167	Nuclear Engineering	0	0	1	0	0	0	1
168	Internal Specialist	0	0	1	0	0	0	1
169	Dentistry	0	0	0	1	0	0	1
170	Fitotecnia	0	1	0	0	0	0	1
171	Rural Constructions and Environment	0	0	1	0	0	0	1
172	Management and Conservation of Pastures	1	0	0	0	0	0	1
173	Inland Water Fishing Resources	0	0	1	0	0	0	1
174	International Economy	0	0	0	1	0	0	1
175	Regional and Urban Economics	1	0	0	0	0	0	1
176	Educational Anthropology	0	0	0	0	1	0	1
177	Visual arts	0	0	1	0	0	0	1
178	Music	0	0	0	1	0	0	1
179	Industrial chemistry	0	0	1	0	0	0	1
180	Public relations	0	0	1	0	0	0	1
181	Educational technology	0	1	0	0	0	0	1
182	Specific Curricula for Levels and Types of Education	0	1	0	0	0	0	1
183	Career based / Vocational	0	0	0	0	1	0	1

No.	Area of Study	Year the course ends						Total
		2017	2018	2019	2020	2021	2022	
184	Others	28	19	11	19	5	1	83
Total		4,893	4,407	3,327	3,915	1,267	180	17,989

3.13. The search for training for personal and Institutional Development

1). Training in areas of generic and specialized competencies

One of the fundamental results of this work is that the data show a considerable level of professional development activity in various training areas in Timor-Leste. Figure 19 and Table 19 below indicate the extent of professional development training by training area and course duration. In response to this question, respondents were allowed to select up to three options for the courses undertaken, so the table refers to the number of courses taken and not to trainees.

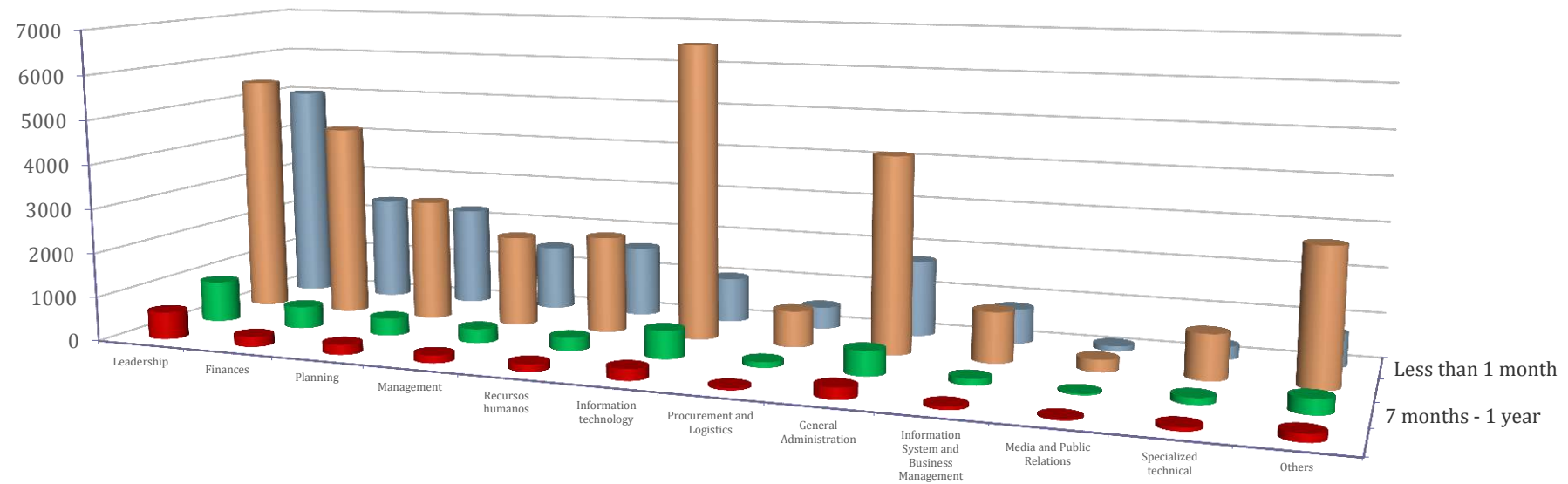
The 58,685 courses represent a substantial level of training activity, since 58.1% were for more than one month and 11.5% were for more than six months. It is also notable that the main courses were in the areas of leadership, information technology, finance, administration and planning. There are few indications of training in areas considered as priorities for Timor-Leste, such as agriculture, construction and hospitality and tourism.

Table 19. Professional development course conducted by area of study and course duration

Area of Study	Less than 1 Month	1 - 6 Months	7 Months - 1 Year	More than 1 Year	Total	Percentage (%)
Leadership	5001	5451	930	616	11998	20,4
Business	2372	4393	494	233	7492	12,8
Planning	2251	2765	392	225	5633	9,6
Management	1471	2055	323	174	4023	6,9
Human Resources	1597	2190	297	166	4250	7,2
Information Technology (IT)	1015	6652	629	254	8550	14,6
Procurement and Logistics	497	814	124	49	1484	2,5

Area of Study	Less than 1 Month	1 – 6 Months	7 Months – 1 Year	More than 1 Year	Total	Percentage (%)
General Administration	1715	4392	550	256	6913	11,8
Information System and Business Management	781	1131	148	72	2132	3,6
Media and Public Relations	118	272	35	28	453	0,8
Specialized technical	287	1005	151	79	1522	2,6
Others	733	2997	333	172	4235	7,2
Total	17,838	34,117	4,406	2,324	58,685	100
Percentage (%)	30,4%	58,1%	7,5%	4%	100%	

Figure 19. Professional development courses conducted by study area and course duration



	Leadership	Finances	Planning	Management	Recursos humanos	Information technology	Procurement and Logistics	General Administration	Information System and Business Management	Media and Public Relations	Specialized technical	Others
Less than 1 month	5001	2372	2251	1471	1597	1015	497	1715	781	118	287	733
1 - 6 months	5451	4393	2765	2055	2190	6652	814	4392	1131	272	1005	2997
7 months - 1 year	930	494	392	323	297	629	124	550	148	35	151	333
More than 1 year	616	233	225	174	166	254	49	256	72	28	79	172

2). Language training

Figure 20 and Table 20 show the proportion of vocational training in language areas and the duration of the course. There are a remarkable number of people who have taken part in a language course. As expected, the Portuguese language as the official language has the highest percentage (55.9%) followed by the English language with 32.7%. The Tétum language has 7% participation of respondents and other languages with a share of less than 3%. 75.6% of the courses have duration between 1 and 6 months and another 30% are less than 1 month. The Portuguese language and English language courses are the main courses conducted by the respondents.

Figure 20. Language training and the duration of the course

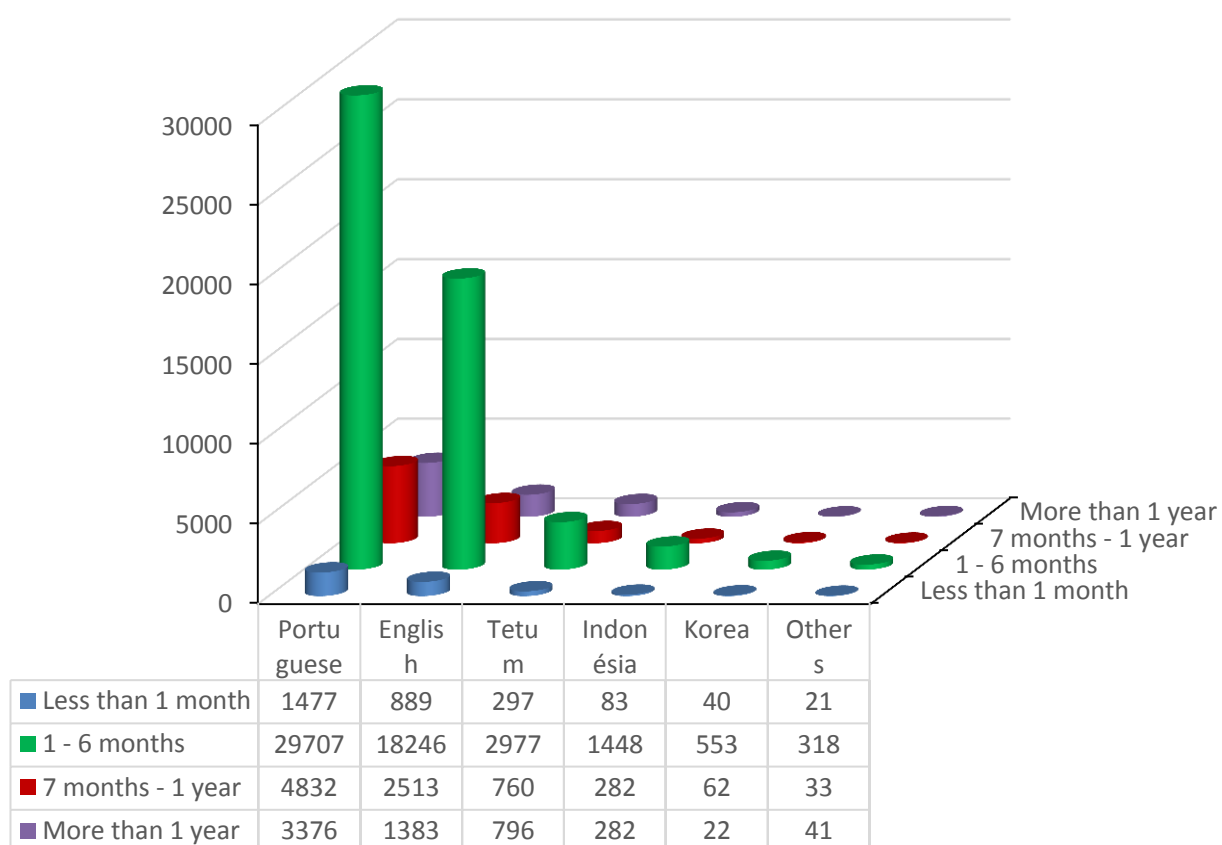
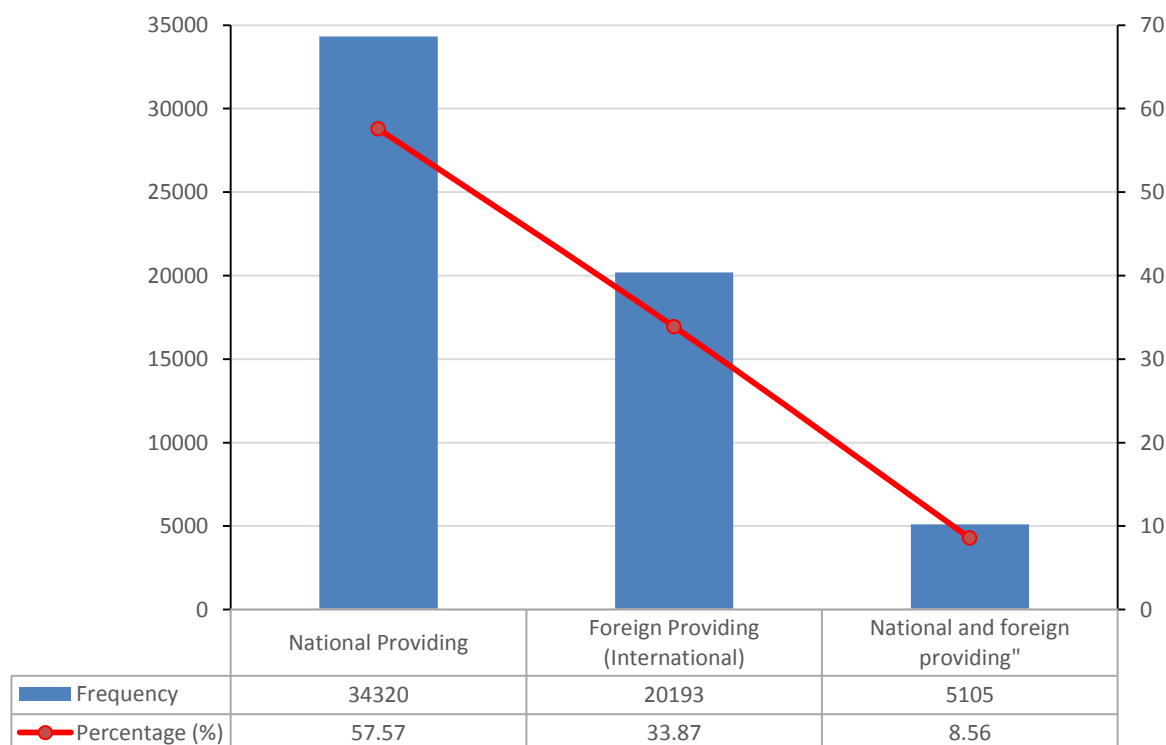


Table 20. Language Training and duration of course

Language Training	Duration				Total	Percentage (%)
	Less than 1 month	1 – 6 months	7 months – 1 year	More than 1 year		
Portuguese	1,477	29,707	4,832	3,376	39,392	55,9
English	889	18,246	2,513	1,383	23,031	32,7
Tetum	297	2,977	760	796	4,830	6,9
Indonesia	83	1448	282	282	2,095	3,0
Korea	40	553	62	22	677	1,0
Others	21	318	33	41	413	0,6
Total	2,807	53,249	8,482	5,900	70,438	100%
Percentage (%)	4%	75,6%	12%	8,4%	100%	

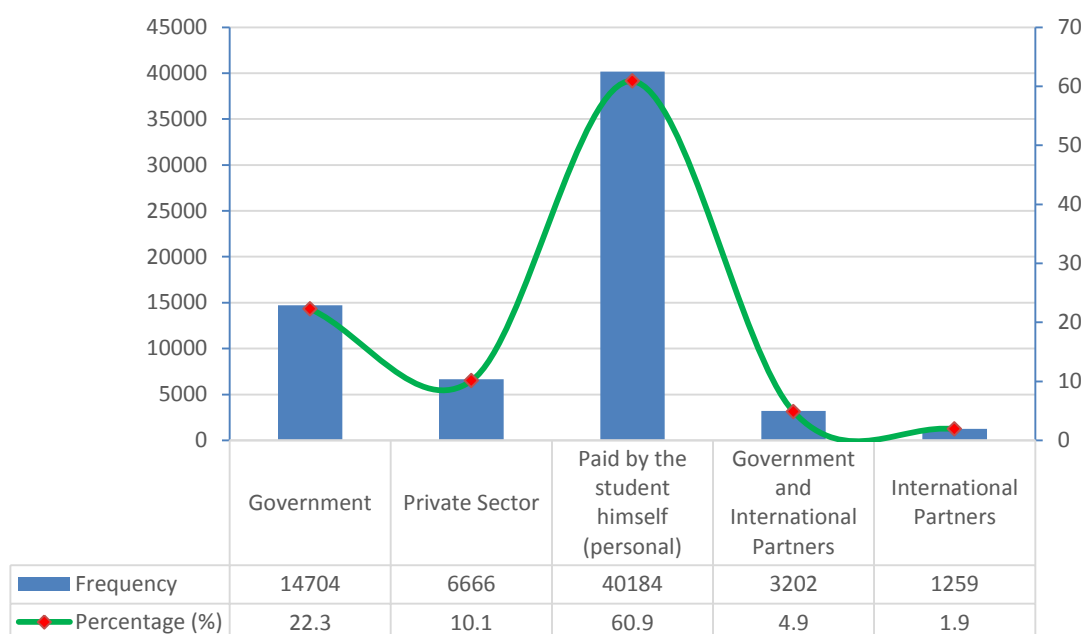
As for institutions provider language training, 57.6% of training provider are national institutions, 33.9% are provided by foreign institutions and only 8.6% are provided by national and foreign institutions (*Figure 21*).

Figure 21. Institution provider language training



Among the total number of respondents who have already done language training, 60.9% is financed by the trainee himself, 22.3% by the government and private sector training is 10.1%. Training supported by government in cooperation with international partners and only by international partners corresponds to 4.9% and 1.9%, respectively (*Figure 22*).

Figure 22. Funders of language training



3.14. Plan of Training Intended for the future

The training plan for the future desired by the respondents was also the subject of an investigation in this work. For training to generate capital gains, it is necessary to respond to the needs of the organization or institution and, consequently, those of the trainees themselves. For this it is important to make a study of the training needs, before starting the investment.

The study of training needs is one of the most common ways to identify the needs of an organization or institution, since it allows, on the one hand, to understand whether training is the answer to problems and, on the other hand, to identify the type of training that serves to fill them. In addition, it allows identifying individual training needs particularly for those who do not yet have and are seeking employment.

The training has individual and Institutional or Organizational advantages. At the individual level, there is a development and satisfaction of the trainee himself by the increase of competences, by the greater opportunities of work, by the obtaining of better remunerations, or by the personal and professional fulfillment and even to make possible the same put his knowledge to the service of his own project which it intends to achieve. With regard to the advantages of training for the organization, there is a reinforcement of the organization's strategic capacity by greater readiness to achieve the objectives, greater effectiveness and efficiency of results, greater capacity to innovate in responding to customer needs and by strengthening capacity competitive. Thus, training is a fundamental condition for achieving national employment objectives and improving the possibilities of entering the labor market.

As part of the desire for training for the future, two questions were asked for those who are not yet employed or looking for a job and those who are already employed in the public or non-public sector. Regarding the first, was asked what kind of training you want to do to increase your personal skills, get greater job opportunity and make it easier for you to look for a job? The data in table 21, shows that the majority of respondents wish to raise their knowledge in the area of Language - Portuguese and English because it is the official language and the working language, respectively. The following areas, such as the Education of Teachers and Professionals in Education, Management, Administration and Leadership, Agriculture, Finance, Budget, Accounting and Planning and Health Professionals, are perhaps of greater interest and possible insertion in the labor market. Other courses of interest but with participation of less than 5% can be seen in table 21.

The training plan for the future desired by the respondents was also the subject of an investigation in this work. For training to generate capital gains, it is necessary to respond to the needs of the organization or institution and, consequently, those of the trainees themselves. For this it is important to make a study of the training needs, before starting the investment.

The study of training needs is one of the most common ways to identify the needs of an organization or institution, since it allows, on the one hand, to understand whether training is the answer to problems and, on the other hand, to identify the type of training that serves to fill them. In addition, it allows identifying individual training needs particularly for those who do not yet have and are seeking employment.

The training has individual and Institutional or Organizational advantages. At the individual level, there is a development and satisfaction of the trainee himself by the increase of competences, by the greater opportunities of work, by the obtaining of better remunerations, or by the personal and professional fulfillment and even to make possible the same put his knowledge to the service of his own project which it intends to achieve. With regard to the advantages of training for the organization, there is a reinforcement of the organization's strategic capacity by greater readiness to achieve the objectives, greater effectiveness and efficiency of results, greater capacity to innovate in responding to customer needs and by strengthening capacity competitive. Thus, training is a fundamental condition for achieving national employment objectives and improving the possibilities of entering the labor market.

As part of the desire for training for the future, two questions were asked for those who are not yet employed or looking for a job and those who are already employed in the public or non-public sector. Regarding the first, was asked what kind of training you want to do to increase your personal skills, get greater job opportunity and make it easier for you to look for a job? The data in table 21, shows that the majority of respondents wish to raise their knowledge in the area of Language - Portuguese and English because it is the official language and the working language, respectively. The following areas, such as the Education of Teachers and Professionals in Education, Management, Administration and Leadership, Agriculture, Finance, Budget, Accounting and Planning and Health Professionals, are perhaps of greater interest and possible insertion in the labor market. Other courses of interest but with participation of less than 5% can be seen in table 21.

Table 21. Training areas of desired by non-employed respondents

No.	Area of Training	Frequency	Percentage (%)
1	Languages (English, Portuguese, etc.)	646	20,76
2	Other / Miscellaneous *)	574	18,44
3	Teachers and Education Professionals	390	12,53
4	Management, Administration and Leadership	244	7,84
5	Agriculture	178	5,72
6	Finance, Budget, Accounting and Planning	177	5,69
7	Medicine and Health Professionals	172	5,53
8	Computer Technology, Database, Web, Software in the Electronic Archiving (registry) - computer	143	4,60
9	Police, Defense, Security (employee training)	136	4,37
10	Information System & Business Management;	113	3,63
11	Human resource Management	97	3,12
12	Law and Justice	32	1,03
13	Mediation Technique, Conflict Analysis, Conciliation and Sensitive Cases	32	1,03
14	Procurement, Logistics and Estate Management	29	0,93
15	Professional, Research, Development Knowledge	29	0,93
16	Marketing, Communication, Journalism and Media	23	0,74
17	Development of General Abilities - induction	19	0,61
18	Livestock	16	0,51
19	Project - Case Management	15	0,48
20	Fisheries	15	0,48
21	Hotel and Tourism	14	0,45
22	Customer Service and Standard Development	8	0,26
23	Audit and Inspection	5	0,16
24	Training of Trainer (ToT)	4	0,13
25	Monitoring and Evaluation (M& E)	1	0,03
Total		3,112	100%

* Areas by their nature could not be classified in a category of their own. This category includes all data that could not be integrated into any of the training categories, as well as very specific training.

As regards the second question - the personal development training and the institutional or organizational strengthening applied to the employed respondents, the data in Table 22 show that the training areas such as Languages (Portuguese

and English), Teachers and Professionals of Education, Management, Management and Leadership continue to be areas of higher preference desired by respondents except Agriculture. The thirst for empowerment in the area of agriculture was less in comparison with the answer to the first question. This, of course due to the lower number of employees in this area. At the generic level it is found that training to broaden general knowledge is more preferred compared to specialized areas. In addition, other training areas with the lowest proportion desired by the respondents were also recorded in Table 22.

Table 22. Training areas of desired by employees' respondents for the institutional reinforcement

No.	Area of Studies	Frequency	Percentage (%)
1	Languages (English, Portuguese, etc.)	1179	22,4
2	Teachers and Education Professionals	994	18,9
3	Other / Miscellaneous *)	598	11,4
4	Management, Administration and Leadership	528	10,0
5	Information Technology, Database, Web, Software and Electronic Archive - computer	382	7,3
6	Finance, Budget, Accounting and Planning	264	5,0
7	Medicine and Health Professionals	261	5,0
8	Police, Defense, Security (employee training)	246	4,7
9	Information and Management of Business Systems;	144	2,7
10	Human resource Management	142	2,7
11	Agriculture	116	2,2
12	Purchasing, Logistics and Real Estate Management	58	1,1
13	Related searches	54	1,0
14	Hospitality in Tourism	40	0,8
15	Technical Mediation, Conflict Analysis, Conciliation and	37	0,7

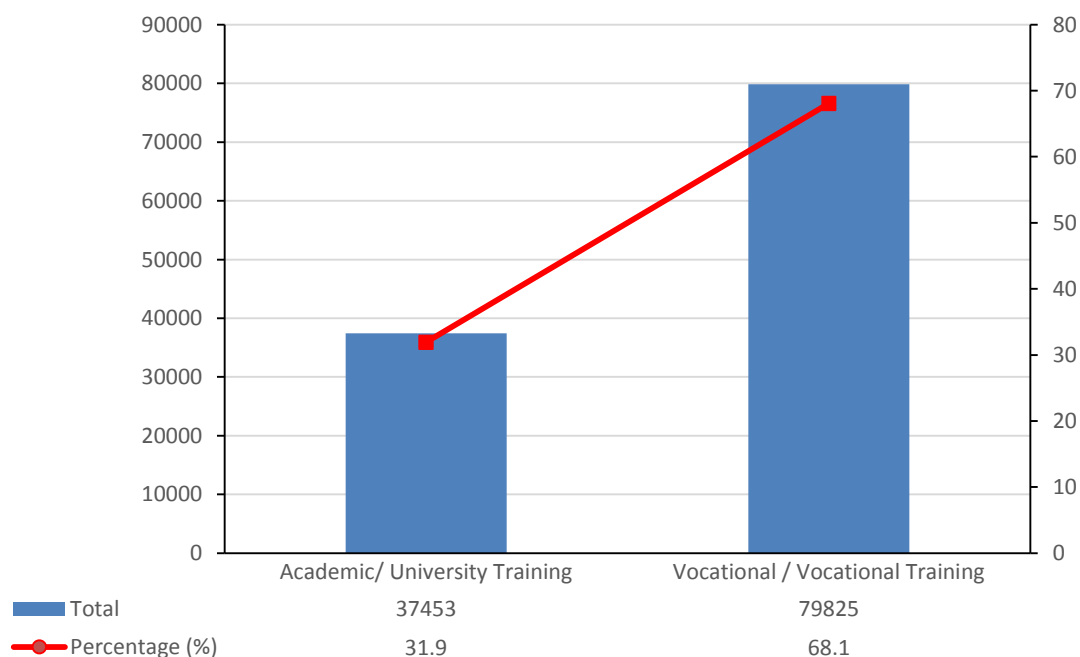
No.	Area of Studies	Frequency	Percentage (%)
	Sensitive Cases		
16	<i>Gestão Imobiliária</i>	34	0,6
17	Professional, Research in Development	34	0,6
18	Fishing	29	0,6
19	Training of Trainers (ToT)	28	0,5
20	General Skills Development - Induction	25	0,5
21	Project - Case Management	21	0,4
22	Marketing, communication, journalism and media	19	0,4
23	Monitoring and evaluation (M&E)	9	0,2
24	Customer Service and Standard Development	8	0,2
25	Audit and Inspection	6	0,1
Total		5,256	100%

*) Areas that by their nature could not be classified in a category of their own. This category includes all data that could not be integrated into any of the training categories, as well as very specific training.

1). Category and Academic Degree of training

When asked about the category of training, of the total of 117,278 respondents (Figure 21), 68.1% of the respondents intend to develop their knowledge through the vocational or professional training course and 31.9% in the academic or higher education course (Figure 23).

Figure 23. Training category - Academic or Professional Training



Among the 31.9% who wish to take the course in higher education, 72% plan to increase their knowledge in Bachelor's Degree (S1) , 25.8% in Master's Degree (S2) and only 2.2% in doctoral studies (S3) (Figure 24). The details of the desired training and academic areas can be seen in table 23.

Figure 24. Academic degrees who wish to pursue

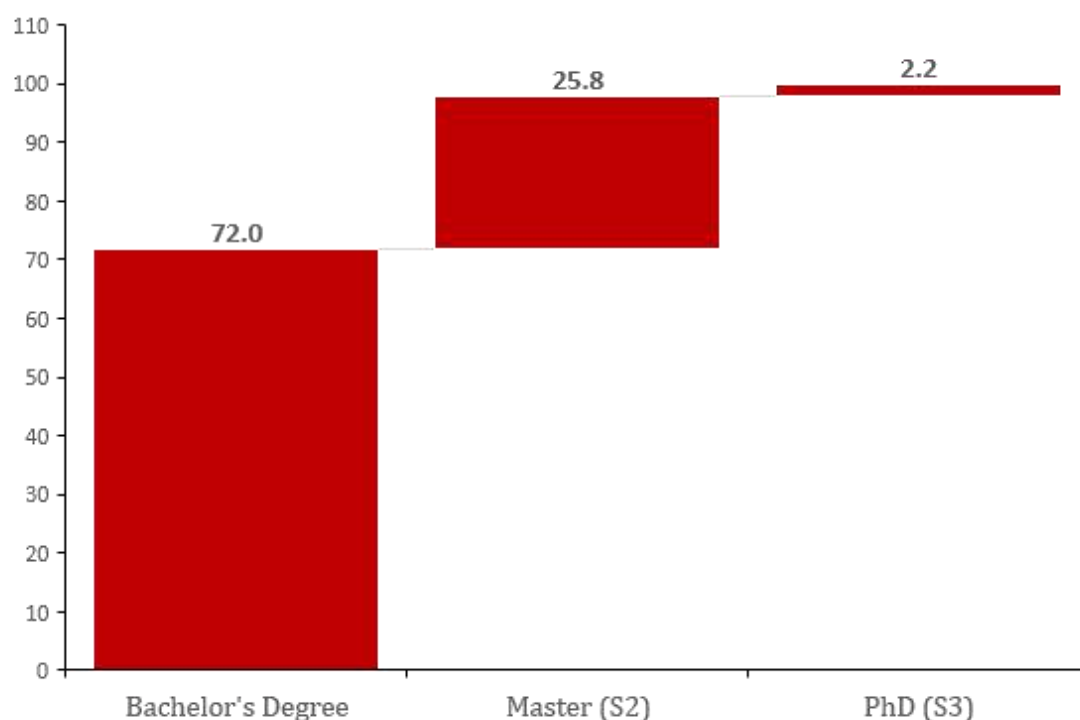


Table 23. Training areas related to academic Degree

Areas of Training	Degree of Academic Year			Total
	Bachelor's Degree (S1)	Master's Degree (S2)	PhD(S3)	
Languages (English, Portuguese, etc.)	314	76	5	395
Medicine and Health Professionals	111	33	1	145
General Skills Development - Induction	6	2	0	8
Information Technology, Data Buzz, Web, Software in the Electronic Archiving (registry) - computer	101	36	2	139
Management, Administration and Leadership	116	69	9	194
Training of Trainer (ToT)	4	4	0	8
Finance, Budget, Accounting and Planning	73	35	6	114
Law in Justice	19	10	2	31
Human Resource Management	25	29	3	57
Audit and Inspection	2	0	1	3
Project - Case Management	5	2	2	9

Areas of Training	Degree of Academic Year			Total
	Bachelor's Degree (S1)	Master's Degree (S2)	PhD(S3)	
Procurement, Logistics and State Assets	8	13	0	21
Marketing, Communication, Journalism and Media	9	0	0	9
Monitoring and Evaluation (M&E)	1	2	0	3
Information System and Business Management;	32	9	1	42
Customer Service and Standard Development	5	0	1	6
Technical Mediation, Conflict Analysis, Conciliation and Sensitive Cases	8	5	0	13
Agriculture	33	2	1	36
<i>Gestão Imobiliária</i>	10	4	0	14
Fisheries	6	0	0	6
Professional, Research in Development	14	7	0	21
Police, Defense, Security (employee training)	32	11	1	44
Other areas	114	52	4	170
Teachers and education professionals	320	89	3	412
Hospitality in Tourism	11	4	1	16
Total	1,379	494	43	1,916
Percentage (%)	72,%	25,8%	2,2%	100%

3.15. Population and Foreign Workers

The role of foreigners in Timor-Leste is an important issue of public debate, and this research provides new information on this issue. In terms of the resident population, the survey concludes that, for people aged 17 or over, a total of 6,856 or 1.3% of the general population were foreigners. Indonesia accounted for the largest share with 74.3% of the respondents, while 11% came from China, followed by 2.4% from Vietnam, 2.3% from the Philippines and 1.7% from Pakistan. A small number of foreigners come from many other countries, including Portugal, Australia and Cuba (*Table 24*). The foreign population has, on average, a higher level of education than the population of Timor-Leste, with 59.3% having

completed secondary school or a post-secondary qualification and 13.5% holding university degrees. It seems likely that a significant proportion of foreign residents in East Timor work in private businesses, and many others work in the NGO sector and little in the Public sector. As discussed in section 3.3 above, staff working in private companies, including foreign workers, have higher education levels than the national average. More than 50% of foreign workers who work in such companies have finished high school or have a post-secondary qualification.

Table 24. Distribution of the educational level of foreign workers respondents

No.	Countries	Not able to read/write	Primary	Pre-secondary	Secondary	Vocational Technical School	Others	Diploma I (DI)	Diploma II (DII)	Diploma III (DIII)	Diploma IV (DIV)	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)	Total	(%)
1	Indonésia	736	657	935	2101	129	24	11	13	112	5	446	25	2	5196	75,98
2	China	51	27	79	517	11	1	0	3	19	1	24	1	0	734	10,73
3	Vietnam	73	14	24	36	5	0	1	0	0	0	10	0	0	163	2,38
4	Philippines	9	3	7	60	0	0	0	4	6	3	51	11	0	154	2,25
5	Pakistan	46	10	17	29	0	0	0	0	1	0	9	1	0	113	1,65
6	Other Asian countries	17	1	9	20	3	0	1	1	4	0	13	3	2	74	1,08
7	Cuba	19	0	0	50	0	0	0	0	0	0	1	1	0	71	1,04
8	Portugal	2	0	1	24	2	1	0	0	1	1	26	9	1	68	0,99
9	Austrália	6	5	2	19	0	0	1	0	3	1	5	2	4	48	0,70
10	Other countries in Europe	0	0	1	17	2	0	0	0	1	0	15	3	3	42	0,61
11	Bangladesh	4	0	4	23	0	0	1	0	2	1	4	2	0	41	0,60
12	Malaysia	2	0	3	12	1	0	0	0	3	0	8	2	1	32	0,47
13	Thailand	0	0	1	14	0	0	0	0	0	0	3	0	0	18	0,26
14	Other Pacific Countries	4	1	1	5	0	0	0	0	0	0	5	2	0	18	0,26
15	Singapore	3	0	1	9	0	0	0	0	0	0	0	0	0	13	0,19
16	Brazil	1	0	0	4	0	0	0	0	1	0	6	1	0	13	0,19
17	Africa	2	1	0	6	0	0	0	0	0	0	3	1	0	13	0,19

FUNDO DE DESENVOLVIMENTO DO CAPITAL HUMANO (FDCH)

No.	Countries	Not able to read/write	Primary	Pre-secondary	Secondary	Vocational Technical School	Others	Diploma I (DI)	Diploma II (DII)	Diploma III (DIII)	Diploma IV (DIV)	Bachelor's Degree (S1)	Master Degree (S2)	PhD (S3)	Total	(%)
	Countries															
18	América	0	0	1	7	0	0	0	0	0	0	1	2	1	12	0,18
19	New Zealand	2	1	1	1	0	0	0	0	0	0	3	0	1	9	0,13
20	Other Countries of America	0	0	0	2	0	0	0	0	1	0	4	0	0	7	0,10
Total		977	720	1087	2956	153	26	15	21	154	12	637	66	15	6839	100,00
Percentage (%)		14,3%	10,5%	15,9%	43,2%	2,2%	0,4%	0,2%	0,3%	2,3%	0,2%	9,3%	1,0%	0,2%	100	

4. Development of Human Resources within Strategic Development Plan

4.1. The four pillars of strategic development plan

As noted earlier, the Timor-Leste Government Strategic Development Plan (PEDN/NSDP) for 2011-2030 provides insight, goals and indicators over the next two decades and is the basis for collecting and analyzing data reported here. The PEDN/NSDP is built around four pillars:

1. **Social capital:** health, education and social protection;
2. **Infrastructure:** transport, telecommunications, energy and water supply and sanitation;
3. **Economic development:** targeting three sectors for development - agriculture, tourism and oil - to generate growth, jobs and new sources of public revenue beyond oil;
4. **Institutional framework:** focus on macroeconomic management and improvement of the capacity and effectiveness of government institutions.

The development of human resources in Timor-Leste must take into account these four pillars and also the current situation of the economy and society as a whole. In addressing key human resource developments, this section builds on the four pillars and begins with a summary of the structure of the economy in Timor-Leste and the recent growth in various sectors.

4.2. The current structure of economic activity

Table 25 is based on the national accounts of Timor-Leste and provides data on the real value added of the industry, both for the oil and non-oil sectors of the East Timor economy. The oil sector is critical for the country, providing crucial revenues for national development, but has little direct contribution to employment and local skills. As a result, we focus here on the non-oil economy. As shown in the table, real GDP in the non-oil economy grew by 5.3% per year compared to the period 2010-15. With the total population growing 2.1% over this period, this implies that real non-oil GDP per capita increased more than 3% per year in the period.

In 2010, agriculture, forestry, fisheries and the food, lodging and food services sectors were the largest non-oil industry, accounting for almost 23% of the non-oil economy and a total of almost 46%. But none of them showed real growth compared to the 2010-15 period, and by 2015 their share of non-oil GDP fell to 35.5%. In fact, the fact that the non-oil economy grew 5.3% over the 2010-15 period, although nearly half of the economy in these two "traditional" sectors stagnated is quite impressive and implies that the rest of the non-oil economy expanded by 8.9%. This implies that human resource development must address the needs of these emerging sectors, while supporting efforts to facilitate growth in the two traditional sectors, both prominent in the developing countries.

Table 25. Real GDP and value added by industry, 2010-15

	2010	2011	2012	2013	2014	2015	Growth rate 2010-15
	(US \$ million at constant prices / US \$ million at constant prices)						(% pa)
Non-Oil Sector							
Agriculture, Forestry and Fisheries	283	241	263	282	280	281	-0.10%
Other mines and quarries (ex-oil)	0	1	2	2	2	2	74.10%
Manufacturing and other industries (*)	13	13	11	11	12	13	-0.50%
Manufacturing	12	12	10	10	12	12	-0.20%
Construction	200	297	267	255	228	286	7.50%
Storage, accommodation and food services	284	307	309	275	284	289	0.30%
Information and Communication	32	43	51	41	43	46	7.70%
Financial and insurance activities	3	9	10	11	12	12	28.50%
Activities of housing	109	119	147	155	178	181	10.70%
Administration and support services	25	36	40	42	49	49	14.50%
Health and social work activities	213	243	273	309	363	382	12.40%
Other service activities	66	61	48	59	56	57	-2.90%
Equal: value added, gross, at the cost of factors	1,227	1,372	1,42	1,442	1,506	1,597	5.40%
More: Taxes minus Product Subsidies	16	30	35	35	36	10	-9.60%
Equal: Gross Domestic Product (GDP)	1,243	1,402	1,455	1,477	1,542	1,606	5.30%
Oil industry							
Value added, gross, at the cost of factors	2	2,326	2,447	1,98	1,008	1,473	-5.90%
Taxes less subsidies to products	49	20	7	9	14	23	-14.50%
Gross domestic product (GDP)	2,05	2,345	2,454	1,989	1,022	1,496	-6.10%

In these other sectors, the value added in construction has been volatile in relation to the previous year, but increased strongly (by 7.5%) over the five years. By 2015, construction accounted for 17.8% of the non-oil economy, a larger share than agriculture. This growth is not surprising, given the lack of infrastructure that remained in place when Timor-Leste restored its independence and is closely related to the PED infrastructure pillar. Related activities housing also expanded strongly, with an increase of 10.7% per year. The value added in health activities and social activities increased sharply, by 12.4% per year, and by 2015

this became the largest sector in terms of value added, representing 23.8% of the national total. This relates directly to the first pillar of the PED, the construction of social capital. In fact, the sum of this sector and the administration and support service, which can be seen as a measure of solidarity economy, grew by 11.3% per year in 2010-15, with 25.3% of non-oil GDP in 2015 in compared with 19.1% in 2010. Value added in other services sectors - such as finance and insurance services and information and communication services - also grew strongly. On the other hand, secondary industry remains small, with less than 1% of non-oil GDP and does not show growth.

These data reveal an economy with little secondary industry, where the two largest sectors in 2010 (agriculture and storage, accommodation and food) did not show growth, but in which construction, real estate activities and a large succession of industries services grew very rapidly. A strong human resources strategy must respect these trends, but it can also, in conjunction with other government strategies, play a key role in shifting them when they are not aligned with long-term goals.

4.3. Agriculture

The development of the agricultural sector is a major focus of the National Strategic Development Plan 2011-30 (PED), with emphasis on the adoption of new techniques and agricultural equipment, on properly targeted research and on the improvement of the skill level of agricultural extension workers. Agriculture continues to be the dominant employer in East Timor (providing around 60% of total employment, although most of it is informal employment), with an increasing role for women, but only a modest proportion of GDP (17.5% %). This indicates that productivity in agriculture is much lower than the average productivity for the economy as a whole. Throughout 2010-15, agricultural employment grew by 2.3% per year, while the real value added in agriculture remained unchanged and therefore productivity declined.

It is now widely argued in the international literature that agriculture has been neglected in modern development models for many countries and that renewed attention needs to be given to the promotion of inclusive rural development. For recent examples, see IFAD (2016) and Spielman (2017). This is a matter of acute

relevance to Timor-Leste, where the majority of the population is involved in subsistence agriculture and where food security is a continuous or ongoing issue.

It is also difficult to highlight the economic and social significance of sustainable agricultural development for Timor-Leste. Increased production will not only boost incomes and rural food supplies, but will also expand to increase activity in villages and downstream industries. For example, if the aggregate agricultural value had grown 5% per year over the period 2010-15, with only 50% being distributed to other sectors (\$ 1 of the increase in production in agriculture generates 0.50 cents income in other industries) the national non-oil GDP growth rate in 2010-15 would have been 6.8% per year instead of the current 5.3%.

This issue is beyond the scope of this report to examine the proper path to effective agricultural and rural development in Timor-Leste. Recent government documents (such as the Medium Term Operational Plan of the Ministry of Agriculture and Fisheries 2014-2018 (DNPP 2014)) emphasize the need for a sustainable development of small-scale agriculture, using greater knowledge, better inputs (such as improved seeds) and technology, and improved management, facilitated in large part by increased training of cooperatives. Among many other initiatives, attention is being given to restoring productive land and reforestation after a sharp decline in forest area between 2003 and 2014.

Timor-Leste is committed to developing a strong cooperative movement, in agriculture and elsewhere. These have already been shown in other countries (such as India) as an effective way of building the human capital of small farmers and also in building their market power. Particular attention should be given to the position of women in the expansion of agricultural production in Timor-Leste. A recent Food and Agriculture Organization, (FAO) report on small family farmers (FAO 2015) is highly relevant. The report notes that these farmers are critical but have been neglected around the world, and the key to realizing their potential is innovation. FAO concludes that:

Innovation can only occur in the presence of well-functioning innovation systems whose various actors and components work together to bring about beneficial change. Essential building blocks for innovation include well managed local

government institutions, efficient agricultural advisory services, productive research and development centers, efficient producer organizations, cooperatives and other community organizations, and - at the most basic level - an educational system that promotes students' ability to create and innovate. (FAO 2015, p.89).

These facts imply the need for a human resource strategy that develops research, business management and operational skills in agriculture and also enhances the skills of individual workers on small farms. This is likely to require:

- Increased availability of technical training and appropriate new technologies for small-scale farmers, perhaps during the "the Seeds of Life" program (ACIAR 2016);
- Education and training of a group of extension workers, to assist in this transfer of knowledge and skills;
- Education and continuing education for members of rural families, especially women, who are moving more and more towards agricultural work;
- Increased investment in tertiary education programs, focusing mainly on the professional technician and directly related to agriculture and the rural economy; and
- Development of agricultural research and development centers to meet the specific needs of agriculture in Timor-Leste.

Given the importance of agriculture for Timor-Leste, it is also necessary to rebuild pride in agriculture as a passable career for the future. It is noteworthy here that this research found that when asked where they would like to work, 53.7% of those who never worked reported preference for agriculture and 73.5% reported preference for the private sector (see section 3.11 above). The recent steps to introduce permaculture or agroecology principles into the Basic Education curriculum, along with the widespread use of school gardens (*Lemos 2016; Hill 2017*), should also be an important step in the dissemination of life skills related to agriculture and understanding of its critical importance to the nation.

4.4. Constructions

Construction activity is clearly central to Timor-Leste development and therefore must play a key role in the development of human resources. But different forms of

construction have very different job requirements, and the available data present a complex picture. In the national accounts, construction accounts for around 17% of **Gross domestic product**, (GDP) in 2015 and only slightly more than 2% of employment. This implies that many forms of construction have high productivity, but this is not likely for all forms. More research is needed to identify the forms of human capital that need to be generated.

4.5. Hospitality and Tourism

The situation in the area of hospitality and tourism is similar in some respects. Similar to construction, the closest item in national accounts is "food storage, housing and services", which accounts for about 17% of non-oil GDP in 2015, but the relevant items in employment data show low levels of employment. Additional research is needed to understand the current use of labor in this industry and the likely future requirements. Although tourism activities are limited in Timor-Leste at present, the government sees this as an important area of future growth. The human resource requirements of this industry will depend on the nature of the tourism proposed and the plan for the development of tourism.

4.6. Health and Social Work Activities

Timor-Leste has a strong commitment to using development to improve people's well-being and strengthen the nation's social and cultural fabric. According to this commitment, national accounts show that the value added in "health activities and social activities" totaled 24% of non-oil GDP in 2015 and grew by 12.4% per year compared to 2010-15. Much of this activity would be provided by the public sector, and although precise employment can not be identified in employment data, it is likely to be distributed by the 10% growth in employment in the service industries in 2010-15. This is again an area where further analysis of future human resource requirements is of considerable importance.

4.7. Quality and relevance to education sector

The World Bank's World Development Report 2018 (*World Bank, 2017*) highlights the learning crisis in many developing countries stemming both from the quality and relevance of what happens in schools and other learning centers and limited entry, and completion rates in, schooling. These issues of quality and relevance are central to Timor-Leste as it seeks to build its own indigenous education and innovation systems on the basis of two colonial administrations.

The task of reformulating its educational system to meet its own needs and not those covered by colonial administrators, while welcoming the growing student cohorts, will remain a central challenge for Timor-Leste in the coming decades. Many steps have been taken, consistent with the National Education Strategy Plan 2011-30, to achieve greater relevance and higher quality, such as the great use of Portuguese and Tétum in education and the redesign of the curriculum for year 9. This is beyond the purpose of this report to investigate what specific investments, both in primary and secondary education as well as in higher education, would contribute more to this challenge. But it remains fundamental to the future of Timor-Leste.

4.8. Accelerating the growth of vocational training

Timor-Leste faces major challenges in all aspects of its education and training system, as much higher population cohorts work through age distribution, although the size of successive cohorts may be starting to stabilize at the primary school end. The National Education Strategic Plan 2011-2030 (*Ministry of Education 2011*) puts great weight on a rapid expansion of vocational education and training, both through a quick build-up of secondary technical or vocational schools and through creation of a network of polytechnics to provide post-secondary education for the students emerging from these schools. While it is beyond the scope of this report to document the extent to which this has been achieved, the survey results confirm that this is indeed a central priority for Timor-Leste. A much increased supply of technically and vocationally trained individuals will be necessary to support the development of priority industries, such as agriculture, construction, and hospitality and tourism, and well as to support the more broadly based development of Timor-Leste's economy and society.

The focus should be on **vocational training geared to areas relevant to business and the labor market** and in accordance with the **Timor-Leste Strategic Development Plan**.

Adapt the curricula according to reality, promote a more comfortable learning environment, stimulate the active participation of students, prioritize the practical component of training and reinforce training in the artistic and cultural areas, in order to promote greater creativity.

The **formal education system has to be strengthened**. Formal education has to be improved by **increasing infrastructures such as laboratories and libraries**.

There is also a need to strengthen vocational-professional courses, **opening the way for young people to be trained for a job and not only for the university**, and so that Timor can have a workforce capable of competing with the technicians in priority areas such as Civil Construction, Agriculture, Tourism and others. Vocational training should be **oriented to the needs of the country, to an attitude of professionalism and quality work, preparing the trainees for the job market**. The promotion of vocational training includes, inter alia, the creation of new centers for quality training, the training of trainers and the strengthening of their practical component.

Also at this point the Universities reinforce their view that **Education is the most important in Timor-Leste**. Academic education should promote the emergence of **intellectuals with a professional attitude**. For such:

- It should be geared towards strengthening knowledge and skills, strengthening analytical skills and professional skills so that those who are trained are able to resolve the issues under their responsibility.
- It should be complemented by an internship that gives practical experience as part of the training itself.

However, education and training must be intensified in the strengthening of in-service, postgraduate (specialization) training, as key elements for the quality of the human resources currently possessing the Secondary and Bachelor's level of education.

4.9. Education and training for older workers

Reflecting the recent development of Timor-Leste's education and training system, and the focus of education and training in the Indonesian period, the level of education and training declines sharply with age. But older workers, say those over 30 years of age, remain pivotal to the expansion of the Timor-Leste economy. As a result there is a great need for expanded adult education programs and for on-the-job and other forms of training for older workers.

4.10. Access for women to the education and training system

The Census data for 2010 and 2015 indicated a rapid expansion of women in employment, especially in rural areas. The quality of that employment is not known, and it may be that much of it is informal employment on the family farm. But it does highlight the potential role of women, perhaps especially in agriculture, and at a higher level of skill because of improved training, can contribute to the growth of family and national income, and to more jobs generally. This role is being increasingly recognised in other countries (see eg FAO 2015; IPAD 2016), and enhancements to the education and training system to facilitate it are likely to return strong dividends.

4.11. Decentralisation

According to the FDCH survey, 23% of the population of Timor-Leste live in Dili, but Dili attracts a high proportion of the nation's intellectual and educational resources. For example, half of all of those with university degrees live in Dili. At the same time, most individuals remain closely attached to their home municipalities, and a substantial proportion of those living away from home intending to return if the opportunity arises. Hence investment both in educational facilities and job opportunities outside the capital will be important, especially in relation to the critical agricultural sector.

PART C: CONCLUSION, RECOMENDATION AND NEXT STEPS

5. Conclusion and Recommendation

The central conclusion of this report is that in developing its human capital resources Timor-Leste needs to give greater attention to the economic and social realities of the country, and to the development opportunities identified in the Strategy Development Plan. (PED/SDP). This is both in respect of an increased focus of human capital development on priority areas and of a general emphasis, throughout the education and training system, on quality outcomes of relevance to life in Timor-Leste. According to the results obtained, it is considered pertinent to conclude and recommend the following:

The bet on education should give priority to a technical and professional training on the academic, focusing more on the opening of vocational training centers (or Polytechnic Institutes) to the detriment of the opening of more universities. Complementary to academic training, the creation of specialization courses can increase the employability and professional capacity of those who complete formal education.

It was verified that the current set of human resources in the area of Social Sciences has a greater number of qualified people compared to those in the area of Exact Sciences.

Based on the data analyzed, we reinforce the need to train other areas where there are notable shortages of qualified human resources, which medical specialists or specialized technicians:

- **Exact and Earth Sciences:** Geosciences, Botany, Astronomy, Meteorology, Geochemistry, Oceanography and Physical Oceanography.
- **Health Sciences:** Pediatric Specialist, Specialist in Orthopedic Surgery, Legal Medicine and Deontology, Specialist in Gastroenterology Surgery, Specialist in Plastic and Restorative Surgery, Obstetrical or Gynecologist Specialist, Dentistry, Specialized Surgery Ophthalmology, Specialist in Pediatric Surgery, Optometry, Psychiatry, Specialist in Cardiovascular Surgery, Specialist in Urological Surgery, Speech Therapy and Gerontology, Palliative Care, Biomedical Engineering and Laboratory Equipment Maintenance.

- **Biological sciences:** Genetics, Microbiology and Parasitology
- **Linguistics, Letters and Arts:** Cultural Studies, Theater, Fashion Design (model and designer), Visual Arts, Photographer, Decoration, Dance and Opera.
- **Engineering:** Sanitary Engineering, Biomedical Engineering, Architecture and Urbanism, Topography Engineering and Nuclear Engineering.
- **Agraria Sciences:** Heavy Resources and Fishery Engineering, Agrometeorology, Rural Constructions and Environment, Marine Fisheries Resources, Veterinary Medicine, Phytosanitary, Phytotechnology, Forestry, Genetics and Improvement of Domestic Animals, Animal Pathology, Animal Products Inspection, Engineering Animal husbandry, Rural extension, Domestic animal ecology and ethology, Evaluation, Production and Conservation of Forages and Pasture management and conservation.
- **Human Sciences:** Gender study, Library, Systematic Theology, Specific curricula for levels and types of education, Cinema, Tetanus Language and Educational Planning and Evaluation.
- **Applied Social Sciences:** Regional and Urban Economics, Business Consulting, Demography, Museology and Home Economics.
- **Specialized Areas:** Military career, Mechatronics Engineering, Hospital Administration, Biomedicine, Biotechnology, Actuarial Sciences, Diplomacy, Cartographic Engineering, Armaments Engineering, Textile Engineering and Industrial Chemistry.

The data show that there are quite a large number of people with disabilities at workable age who are looking for work and with inadequate professional qualifications or very limited practical professional knowledge. The need to develop initial and continuing vocational training actions for people with disabilities and disabilities, such as gestural training for those with visual and hearing disabilities, is recommended so that they can have more opportunities in the labor market.

The average proportion of national workers compared to foreign workers according to educational levels working in a company is 2 (national workers): 1 (foreign worker). The highest proportion is at the level of complete and incomplete secondary education with 3 (national workers): 1 (foreign worker).

Most respondents showed a desire to work in the non-public (private sector) than in the public sector. The desire for the private sector was greater among young people aged 17-36 and the preference for work is mainly in the area of agriculture, household chores, industry and construction.

The graduates with the highest number of job seekers, "unemployment", are in the areas of Management, Law, Engineering Computer Technology (Computer), Accounting, Civil Engineering - Civil Construction, Mine Engineering, Medicine - Medical Clinic General Medicine), Mathematics, Human Resource Management, Animal Production (Livestock) and Economics.

These areas are still areas of greater supply offered by the universities and consequently more students attending the Timorese Higher Institutions, this may increase the number of graduates looking for jobs, "unemployment" in the future. In view of this situation, it is recommended to the Government and especially to the Ministry of Education the need to pay special attention to the higher institutions to carry out an impact assessment process for their graduates.

To the Timorese Higher Education Institutions the need to reinforce the quality and capacities of their graduates and to adjust courses mainly the curricular contents according to the job market.

A large number of respondents want to raise their knowledge through training in the area of Languages - Portuguese and English because they are the official language and the working language. Other areas of training that are also of greater interest for institutional strengthening and possible inclusion in the labor market are the training of teachers and professionals in Education, Management, Administration and Leadership, Agriculture, Finance, Budget, Accounting and Planning and Health professional.

Intensive training, in service and postgraduate (specialization), should be intensified as key elements for the quality of the human resources currently possessing the Secondary and Bachelor's level of education.

To fill out this general conclusion we highlight five key points:

1) Education and training opportunities remain limited in some of key areas highlighted by the Strategy Development Plan, (PED/SDP), such as Agriculture, Construction, Hospitality and Tourism. They should be given greater focus in human capital development:

- **Agriculture** is the heart of the Timor-Leste economy and critical to the welfare of its people. A path of sustainable agricultural development will require greater investment in building innovation and skills in small-scale farms, through many routes : training and technology transfer; a sharp expansion of the number and skills of extension workers; through better education and training for members of rural households, including women; and greater investment in vocational and tertiary education programs, and Research and Development (R&D) centres, closely related to the needs of agriculture in Timor-Leste.
- **Construction.** With limited infrastructure inherited from the period of Indonesian rule and the ongoing needs of development, Timor-Leste is facing a major construction task. The industry already accounts for 18% of Gross Domestic Product, (GDP), but local capacity in construction appears to be limited. There is strong foreign involvement in the industry and an inadequate number of trained domestic construction workers. Substantial investment in the local construction workforce seems to be necessary.
- **Tourism** remains primarily a future opportunity rather than a current reality for Timor-Leste, but seizing that opportunity will require the development of a trained workforce, from entry-level staff to senior managers, as well as investment in Research and Development (R&D), policy development and planning capabilities.

2) **Private Sector** - Survey data show that private sector growth is constrained by skill gaps in the workforce both employers and workers. In this sense, it is crucial to strengthen the private sector by promoting the development and adequacy of the qualification of workers and employers with a view to improving their employability and increasing the productivity and competitiveness of the enterprise.

3) Quality and relevance throughout the school and academic system. The task of reshaping its education system to meet its own needs rather than those perceived by colonial administrators, while also accommodating rapidly rising cohorts of students, will remain a central challenge for Timor-Leste in the decades ahead. Many steps have been taken, consistent with the National Education Strategic plan 2011-30, to achieve both greater relevance and higher quality, such as the great use of tetun in education and the redesign of the curriculum to year 9. It is beyond the scope of this report to investigate what specific investments, either in schooling or in tertiary education, would contribute most to meeting this challenge. But it remains fundamental to Timor-Leste's future.

4). Technical and Vocational Education and Training (TVET/EFTP). The FDCH survey shows a lower level of TVET qualifications than university qualifications in Timor-Leste, and increased investment in the expansion of TVET should be a high priority. This expansion should cover technical secondary schools, the polytechnic system, and the community-based non-formal vocational training system. In doing so, it is important that the boundary between academic and technical education remains fluid, with easy articulation between the two areas.

5). Adult education, especially for women, and on-the-job training. In our view, these three areas are of considerable importance for the future. In particular, the increasing role of women, perhaps especially in agriculture, and a higher skill level due to improved training, can contribute to household and national income growth, and to more jobs in general

6). Decentralization - According to the results of this research, 21% of East Timor's population aged 17 or over live in Dili and the Dili Municipality attracts a large proportion of the nation's intellectual and educational resources. For example, half of all those with university degrees live in Dili. At the same time, most individuals remain closely linked to their hometowns, and a substantial proportion of those living away from home intending to return if the opportunity arises. Therefore, investment in both educational facilities and work opportunities outside the capital city will be important,

especially in relation to the agricultural sector that is critical for the country's development.

It is essential to strengthen the role of the FDCH by focusing on the "filtering" of the training needs proposed by ministerial lines or Institutions in order to articulate the proposed training with the real need within each Ministry or Institution and set demanding requirements; This "filtering", is to avoid the formation of the same people to attend the various types of training courses. The FDCH should create a database in order to supervise and evaluate the training programs including the participants who attend the training.

It is necessary that the public sector (each Ministry or Institution or Municipality), including the private sector, develop training programs for its employees that correlate directly with their own strategic priorities. The proportional allocation of funds may be based on the prioritization of training categories and the definition by Ministries or Institutions, Municipalities or RAEOA-Oecusse and the private sector of priorities within each training category, as presented in

- 1) Result of the data collection of the existing human resources and main key areas of formation of each municipality,
- 2) Analysis and mapping of public sector human resources in Timor-Leste, 2016.

The decision should also take into account the existing skills base and the urgency or importance of acquiring certain competencies, in accordance with the human resource development plan submitted to the FDCH by each ministry.

This report represents the starting point for the development of a list of national and municipal priority competencies including the RAEOA-Oecusse. The report identified the existing human resources and priority training categories. Further research may be developed based on the results and indications offered by this study. This study would be more structured in terms of approach, based on the results presented in this report with regard to the identification of training categories, including the analysis of the potential of municipalities and their related priority programs, and would aim to develop a **Strategic Development Plan of Human Resources for the National level and each Municipality inclusive of RAEOA - Oecusse**

6. Next Steps – The way forward

Although the government in recent years has created a Polytechnic Institute and Technical Vocational Secondary Schools (ESTP/TVET) by converting some general secondary schools, the system still needs a greater speed, with obvious gains that could be achieved. The best commitment to the private sector is definitely one of them. However, evidence suggests that, despite government efforts to promote demand-led ESTPs, the involvement of ESTP/TVET or Polytechnic institutions with the private sector is still limited and fragmented. Commercial engagement with the ESTP can take a variety of forms, from basic operations financing and provision of practice equipment to more sophisticated relationships, including participation in curriculum development and occupational skills standards, and involvement with the Ministry of Education. Education or through a council and the managers of the institutions of ESTP - TVET and Polytechnic.

- Priority recommendations to be considered in relation to program implementation. There will be a need to:
 - To promote and guarantee the continuous professional development of the trainers of ESTP - TVET and Polytechnic.
 - Ensure that trainers (in schools or in training institutes and in the workplace) receive appropriate and appropriate training.
 - Training (pedagogical and technical) according to international standards, before assuming its role.
 - Ensure that trainers are up to date on curriculum changes and maintain their knowledge and understanding to have regular industry experience.
 - Encourage trainers to participate in training sessions, providing logistical assistance and coverage costs.
- Build the capacity of organizations within the system to support the reform of the ESTP - TVET and Polytechnic.
 - Establish adequate ESTP - TVET and Polytechnic infrastructures in the priority areas.

- Encourage industry to support ESTP - TVET and Polytechnic by providing equipment (to be used in training) at discounted prices - and consider a municipal or regional weighting to help address imbalances in provisions between urban and rural areas.
- Ensure that the ESTP - TVET and Polytechnic have the capacity and authority to adapt their programs to meet the needs of the labor market, based on solid market information and advice from employers.
- Ensure that companies understand the need to conduct follow-up sessions with students on the training they have received.
- Ensure that the curriculum reflects the needs of companies, sectors and municipalities or regions.
 - Ensure that curricula are updated at least every five (5) years and can adapt to changing industry needs.
 - To professionalize curricular development through sectoral committees involving government, industry and duly paid instructors.
 - Ensure that the curriculum and associated training are developed and piloted, based on the needs and demands of the industry and the priorities of the region or municipality in which it is provided.
 - Relate curriculum development to national occupational standards and ensure that all training has value in terms of its relevance to the needs and requirements of the industry.
 - Incorporate the concepts of the professional environment and training into the high school curriculum to develop a business culture from a young age.
 - Develop mechanisms to help identify skill needs in companies, sectoral and regional or municipal.
 - Develop diagnostic tools to support analysis of employment needs and skills at sectoral and regional or municipal level.
 - Develop diagnostic tools to help individual companies identify the skills they need to ensure they remain competitive and which can support a broader analysis at sectoral or municipal or regional level.
- Ensure that the support of the development finance and the delivery of programs of the ESTP - TVET and Polytechnic.

- Review the financing system taking into account the results of satisfaction surveys.
- Create a new framework of funding with a co-managed fund (administration, professionals).
- Develop strategies to promote the benefits of ESTP-TVET and the Polytechnic and encourage participation.
- Develop an effective communication strategy that addresses all relevant stakeholders (trainers, polytechnics, schools, employers, government, students or trainees and their parents) in order to raise awareness, improve public awareness of importance and value the ESTP - TVET and the Polytechnic, to promote programs of the ESTP - TVET and the Polytechnic and to encourage the active participation in its development and delivery.
- Develop high-quality career guidance information and guidance for each sector, which can be made available through sector websites, ESTP schools, polytechnic institutes and TVET centers, to include information on:
 - Employment and skills requirements.
 - Relevant qualifications and progression paths.
 - Training centers in each region or municipality.
 - Availability of internships.
 - Case studies and success stories.
 - Create an information center to guide and help practitioners understand the various tools and funding of training.
 - Revise and rationalize the maps of vocational post secondary institutions and ESTPs.
 - Develop incentive measures and increase investor awareness within the country.
- Encourage partnerships and collaboration between key agencies and organizations
 - Create a forum that brings together all key stakeholders in the ESTP - TVET sector, which can promote discussions and facilitate development.

- Encourage and support the active participation of employers in the training process and in the development of professional training programs, working with the Polytechnic Institutes, ESTP and TVET Centers.
 - Ensure that the system is flexible enough to enable the Centers to interact effectively and innovatively with business.
 - Promote the success of existing common mechanisms and social dialogue and use them to provide a basis for expansion in different sectors.
 - Create a directory of sectorial companies incorporated in the collective agreement.
- **Provide information**
 - The government should provide intense information, even if companies wish to engage with the Polytechnic, ESTP and TVET Centers, there are currently no mechanisms for them to find clear, easily accessible and up-to-date information on centers operating in or near in the area of interest, what kind and level of courses they provide, the quality of trainers and the impact of training had on employment and job quality of graduates. In addition, the complexity of the system makes it extremely difficult for businesses to identify the right person at the right level to engage with potential partnerships. There is a need to establish a one-stop shop where companies can access all this relevant information and where stakeholders can be guided through bureaucratic procedures.
 - The Government must implement regulations that guarantee the representation of the employer or industry in the advisory councils of the Polytechnic Institutes, ESTP/TVET Centers and involvement in the development of standards and occupational curriculum.
 - **Provide Incentives**
 - A study by the National Center for Scientific Research (CNIC) of the National University of Timor Lorosae (UNTL) in 2012 in private companies in East Timor found that most companies express the opinions that recent graduates do not have the level of technical skills to match job requirements, or the soft skills the "employability skills" needed to

successfully integrate into your workplace. Consequently, many companies have chosen to establish their own training units, but a common concern among them is the fact that once employees are trained, they often leave or leave to seek better job opportunities. This has led the private sector to be cautious if not reluctant to invest in training.

- It needs legislation for the recruitment of graduates for companies especially when these companies or organizations have invested considerable funding in postgraduate training.

▪ **Increase Capacity**

- The most common complaint between schools, vocational centers and institutions involves the quality of the trainers. A large proportion of technical trainers are not qualified by industry or even vocational or vocational education standards, and a large number of them have not received advanced training to upgrade their knowledge and skills, particularly in the development of modern enterprise or factory production lines. The poor quality of trainers represents a serious constraint on the ability to establish proactive and creative partnerships with the private sector. It is important to have central government regulations that stipulate a practical upgrade in business or industry for teachers in vocational institutions.
- It is necessary to radically rethink the criteria of selection and recruitment of teachers from the Polytechnic Institutes, ESTP or TVET Centers. Currently, the primary criterion requires an ESTP teacher to be qualified for a Bachelor's degree (S1). The lack of this policy is that a graduate of an institution with a baccalaureate degree will rarely have had some form of training in the field of practical skills work and therefore would be at a great disadvantage if they are expected to teach or transfer skills practices in industry.
- Countries that have successful ESTP systems together have a quality in common - Selected teachers or instructors are directed directly from the industry and generally have a minimum requirement of 5 to 10 years of hands-on industry experience.

- Another quality issue is in relation to teachers' remuneration: to establish a "cadre" of experienced, motivated and experienced teachers, the salary level offered to teachers should be fair to what they could expect in industry, and there should be recognition legislated by stipulating that the ESTP-TVET and Polytechnic teachers who obtained the necessary pedagogical training in "how to teach" are then recognized as social equality for primary and secondary school teachers.

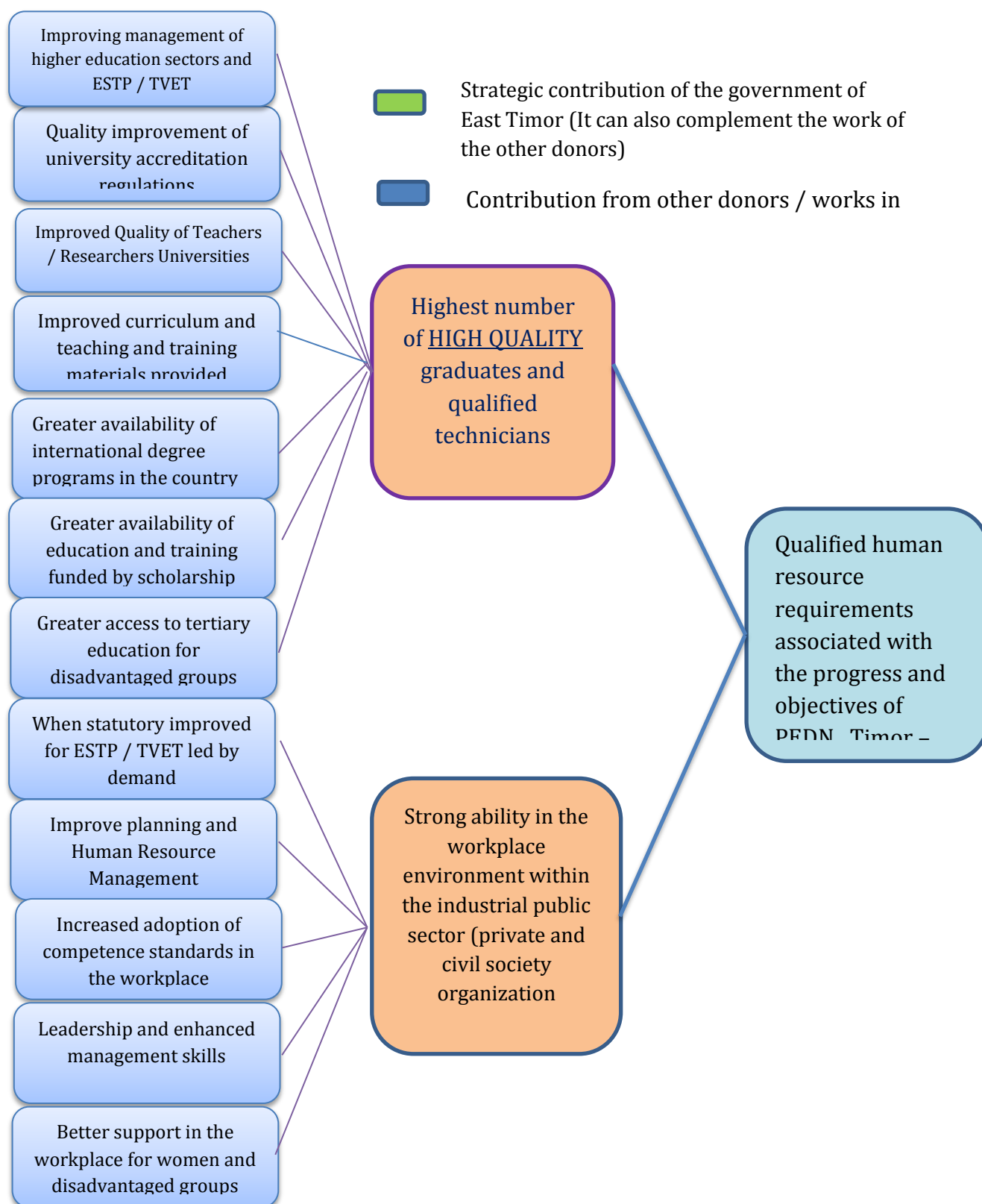
Proposal to be followed

East Timor's Human Resource Development (HRD) objective is to improve the quality of human resources to meet the socio-economic development needs associated with Timor-Leste's progress through the creation of strategic industries, development of existing infrastructures, improve market access and ultimately eradicate poverty, create a strong private sector and achieve a diversified economy that is not dependent on oil and gas as set out in the National Strategic Development Plan 2011-2030.

The strategic management of training is an integrated process that dynamically articulates the identification of training needs to be achieved in the short, medium and long term. Thus, the government must recognize two intermediate outcomes that are necessary to achieve this goal:

- Increased number of **high-quality graduates** and qualified technicians.
- Strong favorable (workplace) environment for the use of skills in the public and industrial sectors (non-public sectors).

The following figure briefly describes the specific areas of Human Resource Development that would contribute to these outcomes. Identify the areas that will receive support from the government.



Aware that Human Resources is the backbone of all development systems in East Timor, the government has invested in human resources training as the first priority and that it is envisaged to reach a large scale through education, training and training to be continued. To ensure the greatest impact of this investment efficiently and effectively, a human resources development scheme for East Timor has been created. This will guide how we choose to invest our resources so that we can achieve the greatest return in line with the national interest of East Timor. In the end, Timorese will have access to and use of high-level technical and professional knowledge, skills and competencies to contribute to the country's economic sustainability and inclusive development.

The outline of the East Timor Human Resources Development Strategy is as follows:

- If Timorese individuals and their workplaces receive targeted support for learning (eg tertiary education, professional development, higher-level leadership, knowledge and technical and managerial skills), they will acquire new skills and, if in one environment, to use it to contribute to improving the quality and productivity of service delivery policies and activities in their workplace and sector; and
- If this process of acquiring and using new knowledge and skills is focused and linked to East Timor's strengths and priority areas supported by the Government, the cumulative effects of continuous improvements at the individual, organizational and sectoral levels will lead to measurable development results to the central work area. In the medium and long term, these effects will contribute to the strengthening of relevant areas of development in East Timor.
- If learning or training is provided abroad, by foreigners in the Country or through East Timor - Foreign Organizational Partnerships, the relationship between the two countries will be strengthened and will foster long - term learning opportunities and sustainable links between individuals and organizations.

To achieve the final results, the following three interrelated intermediate outcomes are proposed:

- 1) Increase in the number of **high-quality** graduates and qualified and technical professionals in selected priority areas;
- 2) Strengthen skills in selected priority areas and improve the workplace environment;
- 3) The Government of Timor-Leste and International Partner Countries have stronger and more sustainable links in selected sectors.

7. Bibliographic References

- ABS 2016, '6227.0 - Education and Work, Australia, May 2016', Australian Bureau of Statistics, Canberra, at <http://www.abs.gov.au/ausstats/abs@.nsf/mf/6227.0>
- ACIAR 2016, 'Seeds of Life 3', Australian Centre for International Agricultural Research and Timor-Leste Ministry of Agriculture and Fisheries, Canberra and Dili, at <http://aciar.gov.au/project/cim/2009/049>
- BPS 2014, 'Labour Force Situation in Indonesia: August 2014', Badan Pusat Statistik, Jakarta, at <https://www.indonesia-investments.com/upload/documenten/statistics-indonesia-unemployment-august-2014-indonesia-investments.pdf>
- Democratic Republic of Timor-Leste 2011, 'Timor-Leste Strategic Development Plan, 2011-2030', Version Submitted to the National Parliament, Dili, at <http://timor-leste.gov.tl/wp-content/uploads/2011/07/Timor-Leste-Strategic-Plan-2011-20301.pdf>
- DNPP 2014, 'Agriculture Sector Development: Medium Term Operation Plan', National Directorate of Policy and Planning, Ministry of Agriculture and Fisheries, Dili, at http://www.gafspfund.org/sites/gafspfund.org/files/Documents/6c.%20Timor-Leste_Ministry%20of%20Agriculture%20and%20Fisheries%20Medium%20Term%20Operation%20Plan%20%28full%29.pdf
- FAO 2015, 'Conclusions: Fostering innovation in family farming', in Food and Agricultural Organization, The State of Food and Agriculture 2014: Innovation in Family Farming, pp. 89-94, at <http://www.fao.org/publications/sofa/2014/en/>
- Hill, H. 2017, 'Skills for All as Timor-Leste's initial response to SDG 4', NORRAG News, Network for International Policies and Cooperation in Education and Training, Geneva, at <https://www.scribd.com/document/353163209/Skills-for-all-as-Timor-Leste-s-initial-response-to-SDGs-4>
- IFAD 2016, Rural Development Report 2016: Fostering Inclusive Rural Transformation, International Fund for Agricultural Development, Rome, at <https://www.ifad.org/pub/rdr>
- Lemos, E. 2016, 'Permaculture/agroecology system in Timor-Leste National School Curriculum for Basic Education', Food and Agriculture Organization, at <http://www.fao.org/family-farming/detail/en/c/425624>

Ministry of Education 2011, 'National Education Strategic Plan 2011-2030', Democratic Republic of Timor-Leste, Dili, at <http://www.moe.gov.tl/pdf/NESP2011-2030.pdf>

Philippine Statistics Authority 2017, 'Annual Labor and Employment Estimates for 2016', Manila, at <https://psa.gov.ph/content/2016-annual-lfs-estimates-tables>

Spielman, D.J., Malik, S.J., Dorosh, P. and Ahmad, N. 2017, 'Agriculture and the Rural Economy in Pakistan: Issues, Outlooks and Policy Priorities – Synopsis', International Food Policy Research Institute, Washington DC, at <http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131044>

Statistics Timor-Leste 2010, 'Timor-Leste Labour Force Survey 2010', General Directorate of Statistics, Democratic Republic of Timor-Leste, Dili, http://www.statistics.gov.tl/wp-content/uploads/2013/12/Timor-Leste_20-Labour_20Force_20Survey_20Report_20-_202010.pdf

Statistics Timor-Leste 2013, 'Timor-Leste Labour Force Survey 2013', General Directorate of Statistics, Democratic Republic of Timor-Leste, Dili, at http://www.statistics.gov.tl/wp-content/uploads/2015/04/LFS_2013_ENGLISH_VERSION.pdf

Statistics Timor-Leste 2016a, 'Business Activity Survey of Timor-Leste 2015', General Directorate of Statistics, Democratic Republic of Timor-Leste, Dili, at <http://www.statistics.gov.tl/wp-content/uploads/2017/02/Bussines-Activity-Survey-2015-.pdf>

Statistics Timor-Leste 2016b, 'Census Population and Housing 2015', General Directorate of Statistics, Democratic Republic of Timor-Leste, Dili, at: <http://www.statistics.gov.tl/>

UNEVOC 2012, 'The New TVET Training System in Timor-Leste', UNESCO and International Center for Technical and Vocational Education and Training, Bonn, at http://www.unevoc.unesco.org/fileadmin/user_upload/docs/TVET_in_Timor-Leste_01052012.pdf

United Nations Population Division 2015, 'World Population Prospects 2015', at <http://esa.un.org/unpd/wpp/Download/Standard/Population>.