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Seizing Opportunities of a Lifetime

The Timor-Leste Human Capital Review

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Contents

Acknowledgments iv
Abbreviations v
List of Boxes vii
List of Tables vii
List of Figures viii
Executive Summary 1
1. Introduction 12
   1.1. What is Human Capital? 12
   1.2. Why is Shifting Focus to Human Capital Important for Timor-Leste? 13
   1.3. Human Capital Review: A Life Course Approach 17
2. Diagnostics 24
   2.1. Overview 25
   2.2. Early Life 26
   2.3. Childhood & Adolescence 37
   2.4. Working Age 44
   2.5 Aging Population 50
3. Enabling Environment 57
   3.1. Overview 58
   3.2. Public Expenditure Resource Allocation 59
   3.3. Building Institutional Capacity and Accountability 61
   3.4. Data and Management Information Systems 62
   3.5. Stakeholder Coordination 64
4. Priorities 67
   4.1. Overview 67
   4.2. Improve the efficiency of public spending & stimulate demand for health, education and social protection services 70
   4.3. Improve health and nutrition outcomes through health care reform 70
   4.4. Improve education outcomes and close critical skills gaps 72
   4.5. Foster evidence-based policy design, monitoring, evaluation, and accountability 73
   4.6. Conclusion 74

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Abbreviations

ASEAN	Association of Southeast Asian Nations
BdM	*Bolsa de Mãe* (Mother's Purse)
BMI	Body Mass Index
CHC	Community Health Center
CNAP-NFS	Consolidated National Action Plan for Nutrition and Food Security
COVID	Coronavirus Disease
CPIA	Country Policy and Institutional Assessment
DALYs	Disability-Adjusted Life Years
DTP	Diphtheria, Tetanus Toxoid and Pertussis
EAP	East Asia and Pacific
EGRA	Early Grade Reading Assessment
EMIS	Education Management Information System
ESP	Education Sector Plan
EYS	Expected Years of School
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GER	Gross Enrollment Rate
GIS	Geographic Information System
GoTL	Government of Timor-Leste
HCI	Human Capital Index
HCR	Human Capital Review
HFS	Health Financing Strategy
HP	Health Post
ID	Identification
ICRC	International Committee of the Red Cross
IHME	Institute for Health Metrics and Evaluation
KONSSANTIL	National Council for Food Security, Sovereignty and Nutrition
LIC	Low-income country
LMIC	Lower-middle-income country
MACLN	Ministry of National Liberation and Combatants Affairs
MEYS	Ministry of Education, Youth, and Sport
MHESC	Ministry of Higher Education, Science, and Culture
MIS	Management and Information System

MMR	Maternal Mortality Ratio
MoF	Ministry of Finance
MoH	Ministry of Health
MSSI	Ministry of Social Solidarity and Inclusion
NCD	Noncommunicable Disease
NEET	Not Engaged in Education, Employment, or Training
NER	Net Enrollment Rate
NESP	National Education Strategic Plan
NGO	Nongovernmental Organization
NHSSP	National Health Sector Strategic Plan
NNS	National Nutrition Strategy
OOP	Out-Of-Pocket
PHC	Primary Health Care
PLMP	Professional Learning and Mentoring Program
SAII	Support of the Elderly and Invalid
SDG	Sustainable Development Goal
SDP	Strategic Development Plan
STEPS	World Health Organization STEPwise Approach to Non-Communicable Disease Risk Factor Surveillance
SUN	Scaling Up Nutrition
TVET	Technical and Vocational Education and Training
UHC	Universal Health Coverage
UID	Unique Identifier
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNFPA	United Nations Population Fund
UNTL	National University of Timor-Leste
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

List of Boxes

Box 1.1: Human Capital Index Methodology 12
Box 1.2: Impacts of COVID-19 on Human Capital 15
Box 2.1: Timor-Leste HCI Components Disaggregated by Gender 26
Box 2.2: Water, Sanitation and Hygiene (WASH) and Nutrition 31
Box 2.3: Early Marriage, Reproductive Health, and Gender Inequities 37
Box 3.1: Climate Change Impacts on Human Capital 58

List of Tables

Table ES1: Eight recommendations across four thematic areas 10
Table 2.1: HCI and HCI Component Scores for LMICs in the EAP region, ordered by descending HCI 25
Table B2.1.1: HCI Components Disaggregated by Gender 26
Table 2.2: Pregnancy, Delivery, and Early Child Health Service Indicators in Timor-Leste, 2009 – 2016 (percent) 33
Table 2.3: Preschool-age Population and Teachers per Municipality 35
Table 2.4: Percent of Students in Grade 1 who scored Zero on the EGRA Tasks, 2009 and 2017 40
Table 2.5: Distribution of Overcrowded Classrooms across Municipalities (Basic Education) 42
Table 4.1: Recommended Interventions across Human Capital Priority Areas 68

List of Figures

Figure ES1: The rising dependency ratio in Timor-Leste 2
Figure ES2: Composition of public spending on health 4
Figure ES3: Composition of public spending on education 4
Figure ES4: Distribution of Grade 1 repetition (percent) in EAP and Non-EAP countries 7
Figure ES5: The unequal supply of highly skilled workers across sectors in Timor-Leste 8
Figure ES6: The HCR causal framework and core thematic areas for intervention 10
Figure 1.1: Population by Age Groups, 2020 14
Figure 1.2: Population Dependency Ratios 14
Figure 1.3: Causal Framework 20
Figure 2.1: Infant Mortality in Timor-Leste, 2019 28
Figure 2.2: Under 5 Mortality Rate per 1,000 live Births in Timor-Leste by Geography and Socioeconomic Status 29
Figure 2.3: Stunting Prevalence in Timor-Leste, 2016 30
Figure 2.4: Stunting Rate among Children under 5 by Household Income Level 30
Figure B2.2.1: Percentage of Schools with Improved Drinking Water and Functional Toilet Facilities 32
Figure 2.5: Net Enrollment Rates by Education Level 34
Figure 2.6: Net Pre-primary Enrollment Rates (percent) in Timor-Leste versus Other Countries 34
Figure 2.7: Repetition Rate, Grade 1 40
Figure 2.8: Secondary School Net Enrollment Rate (NER) and Gross Enrollment Rate (GER) in Timor-Leste (percent) 41
Figure 2.9: Enrollment Rates (percent) by Level, Stratified by Income 41
Figure 2.10: Pupil-Teacher Ratio (Primary and Secondary Levels) 42
Figure 2.11: Burden of Disease by Cause in Timor-Leste (percent), 2002-2019 45
Figure 2.12: Maternal Mortality in Timor-Leste, 2017 45
Figure 2.13: Gross Enrollment Rate in Tertiary Education and Counts of Students over Time 47
Figure 2.14: Pupil-Teacher Ratio, Tertiary (percent) 47
Figure 2.15: Matching of Demand and Supply for Tertiary Skills 49
Figure 2.16: Top 5 Occupations by Foreign Workers 49
Figure 3.1: Relationship between HCI and Government Spending on Human Capital as a Percentage of GDP (percent) 60
Figure 4.1: Recommended Priorities in Relation to the Causal Framework 69

Executive Summary

Timor-Leste is facing a human capital crisis. Children born in Timor-Leste today will be less than half as productive as adults as they could be if they enjoyed complete education and full health. Moreover, the Petroleum Fund, the main driver of the economy since the country's independence in 2002, risks being depleted within a decade, threatening the sustainability of Timor-Leste's economy, as well as health, education, and social protection systems. The COVID-19 pandemic has amplified and accelerated these challenges and deepened socioeconomic and geographic inequalities across the country. To be ready for a future that will be primarily driven by the country's human capital assets, the time available to Timor-Leste is limited and the task at hand an enormous one.

Despite this daunting outlook, there are opportunities of a lifetime that need to be seized now to address this crisis. The country's population is primarily young, and a rapidly closing window of opportunity exists to build high levels of human capital through quality education, health, nutrition, and social protection. By capitalizing on the youth bulge and translating it into a demographic dividend, the people of Timor-Leste can become the drivers of the country's economic growth. This requires spending better, and not necessarily more, across the life course in the public sector, and stimulating a diverse private sector. Improved stakeholder coordination, enhanced accountability, and building integrated, comprehensive data systems for evidence-based policymaking, monitoring, and evaluation will be cornerstones of this development.

Eight key messages can be distilled from the 2023 Timor-Leste Human Capital Review (HCR). These messages serve as a common reference point for the Government of Timor-Leste (GoTL) and other stakeholders active in human development to identify short- and medium-term priorities for investment in health, education, and social protection. Together, these can yield individual-level and macro-level economic benefits and improve development outcomes.

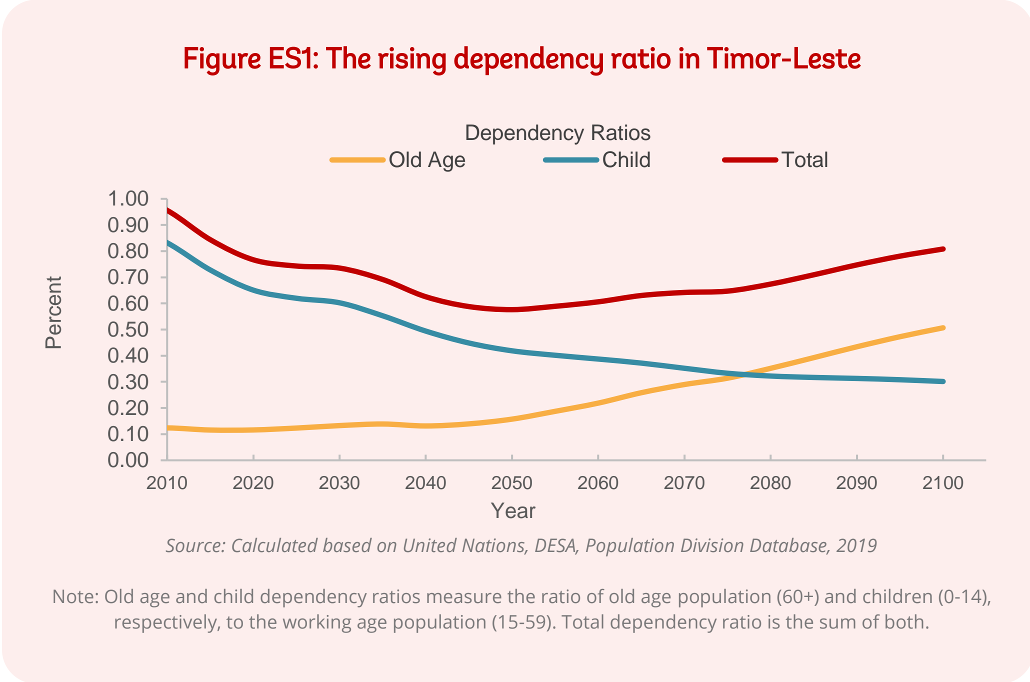
Key Message 1: Timor-Leste is facing a human capital crisis

Human capital refers to the knowledge, skills, and health that people accumulate over their lives, enabling them to fully realize their potential. As such, it is a central driver of sustainable growth and poverty reduction. Human capital success hinges on a country's service delivery systems and the enabling environment of the labor market as well as the health and nutrition, education, and social protection sectors. In Timor-Leste, children born today will only be about 45 percent as productive as an adult as they could be if they enjoyed complete education and full health according to the World Bank's Human Capital Index, lagging economic and regional peers.

Barring urgent action, this poor state of human capital in Timor-Leste could worsen. The likely depletion of the Petroleum Fund over the next decade means that the country needs to empower its people to be the drivers of the country's economic growth. Specific attention should be paid to empowering girls and women as vital contributors to the labor force, as well as to the health, nutrition, and educational outcomes of the next generation.

Timor-Leste's demographic profile offers a window of opportunity, however this window is closing quickly. While the dependency ratio – the ratio of children and the elderly population compared to the working population on which they depend – is currently falling, it will start to rise again by 2050 (Figure ES1). Without a healthy, educated, and productive population, this transition may lead to socially and economically destabilizing conditions.

Figure ES1: The rising dependency ratio in Timor-Leste



Source: Calculated based on United Nations, DESA, Population Division Database, 2019

Note: Old age and child dependency ratios measure the ratio of old age population (60+) and children (0-14), respectively, to the working age population (15-59). Total dependency ratio is the sum of both.

Human capital accumulation is under further pressure from the impact of the COVID-19 pandemic. COVID-19 led to job losses for almost 40 percent of the working population and disrupted public services. This has had long-term negative impacts on health and nutrition, learning, and lifetime income. However, the human capital crisis is not a COVID-19 crisis. Even before the pandemic, the traditionally high level of spending on human capital in Timor-Leste did not result in better human development outcomes, revealing inefficiencies in expenditures.

Global evidence suggests that a dollar of public spending on human capital is more effective than a dollar of public spending on physical capital to achieve income and poverty goals, and disproportionally benefits the poor. A sharper focus on human capital investments is thus essential for Timor-Leste's sustained long-term growth, as pointed out during its bid to join the Association of Southeast Asian Nations (ASEAN).

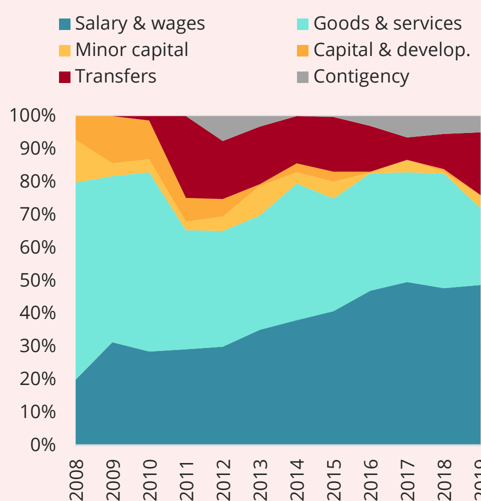
Key Message 2: There is no direct need for higher public expenditure on human capital, but for better public expenditure

Timor-Leste's human capital spending is about average for a country of its level of development, but this spending has not translated to poverty reduction or improved human capital outcomes due to spending inefficiencies and service delivery limitations. With the Petroleum Fund running out, rapid and comprehensive interventions across the health, education, and social protection sectors are urgently needed.

In the health sector, 55.3 percent of spending comes from the government budget. Despite partial improvements in infrastructure and a growing share of this spending going toward salaries, many health facilities still lack basic amenities and the necessary workforce to deliver primary or specialist services (Figure ES2). The distribution of health facilities and workforce remains uneven geographically, and utilization of health services is still relatively low. Innovative solutions to health service delivery, for example, through disruptive technology and telemedicine can help to fill shortcomings in clinical skills and service access.

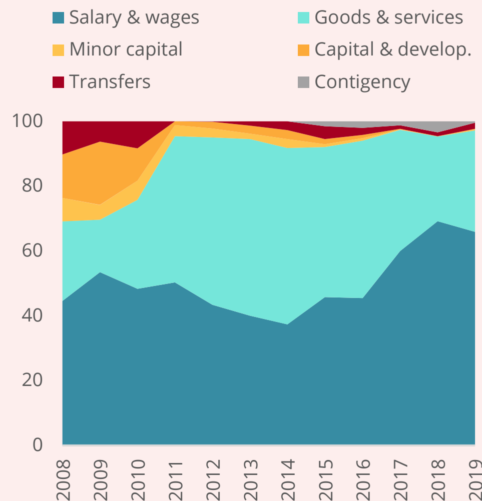
Education spending is relatively high by international standards, at 4.1 percent of GDP. Also here, the salary share of expenditure is on the rise, which may result in sustainability challenges and the crowding out of other essential inputs (Figure ES3). Increased spending is not reflected in significantly improved education outcomes. Investments in education infrastructure have also been limited in recent years despite rising future demand, especially for secondary education: the number of 3 to 5-year-olds is expected to increase by about 17 percent between 2018 and 2030, requiring continued, high-quality education.

Figure ES2: Composition of public spending on health



Source: World Bank World Development Indicators Database 2020

Figure ES3: Composition of public spending on education



Source: World Bank World Development Indicators Database 2020

The high social protection spending allows a wide range of benefits and services, but the welfare impact is highly limited. The delivery system remains fragmented, causing a high administrative burden for policymakers and operators in the absence of systematic monitoring of program effectiveness. The impact of the main social assistance programs has been very small. *Bolsa de Mãe* (Mother's Purse or BdM) has decreased the share of people below the poverty line by 0.9 percentage points. This almost negligible reduction in the national poverty rate is due to the very small benefit level and low coverage of the poor population. Meanwhile, the large veterans' program is not targeted towards those that need it most. It has prevented poverty from increasing by a mere 2.6 percentage points, although it comes at a great cost of 4.5 percent of the country's non-oil GDP and is. It is therefore important to first spend better before considering spending more.

Key Message 3: Integrated data systems are urgently needed for efficient and targeted policymaking, monitoring, evaluation, and accountability

Efficient and integrated data systems underpin evidence-based policymaking for, and spatial and population targeting of, health, education, and social protection expenditure. These data systems are also pivotal to the monitoring and evaluation of program and institutional performance, creating accountability. While there are several operational Management and Information Systems (MIS) in Timor-Leste, these are often

isolated, with access to data being limited and non-transparent. A major gap is the absence of geospatial platforms.

The lack of a trusted and inclusive identification (ID) system also undermines inclusion, digitalization, and the delivery of social protection, financial, health care, and education services. The Government has developed a Unique ID (UID) System Strategic Plan 2021-2025 for a foundational ID system that could be a segue into digital service delivery to all citizens. The Plan considers the need for a strong regulatory regime for data protection, yet this is currently still awaiting adoption and implementation. A UID system could unlock digital service delivery opportunities and launch an expansive digital economy as the internet in Timor-Leste becomes cheaper and more reliable, though coverage gaps remain.

Key Message 4: Human capital losses from early life cause major and irreparable loss of productivity

Despite progress in specific areas, many human capital-related development outcomes among newborns and infants in Timor-Leste remain poor. These human capital losses cannot be made up in later life and need urgent improvement. While antenatal care coverage has improved and the Government is strongly committed to reducing stunting as indicated by the ambitious Consolidated Nation Action Plan for Nutrition and Food Security (CNAP-NFS), a stalemate persists in terms of maternal and child mortality as well as stunting, which can cause irreversible damage to a child's cognitive development. An institutional home for a supra-ministerial nutrition coordination body is urgently needed to scale up high-impact interventions and strengthen sectoral accountability. Concerningly, vaccination rates have declined, and new challenges, such as the steep increase in the noncommunicable disease (NCD) burden and newly emerging infectious diseases, have put further strain on an overwhelmed and underperforming health care system. These trends continue to be associated with persisting geographic and socioeconomic disparities, also in access to care, and have worsened with the COVID-19 pandemic.

Early childhood education interventions fostering children's cognitive and socioemotional development in their early years have a profound impact on their ability to realize their potential later in life. While there is an overall increase in access to education in Timor-Leste, the quality and inefficiencies of the education system remain major challenges. Enrollment rates in early childhood and secondary education are still low, particularly in remote regions. Moreover, students are not learning as expected due to the poor quality of teaching and learning practices and conditions, resulting in high grade repetition and school dropouts.

Timor-Leste's social safety net programs aim to prevent negative coping behavior which often impacts household expenditures on food and health. While BdM, as well as

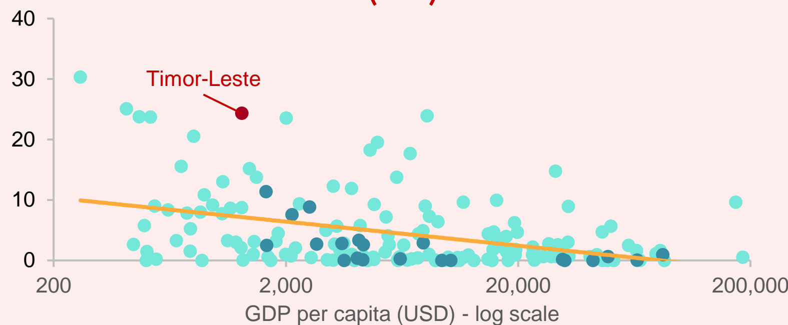
the 'new generation' BdM *Jerasaun Foun*, a universal unconditional cash transfer program for households with young children, expectant mothers, or children with disability, hold significant potential, they have large coverage gaps. The impact of the transfers on household budget is low as well. Moreover, the lack of behavioral change communication or conditionalities means that these programs do not stimulate demand for health, education, or social services.

Key Message 5: Health, education, and labor market prospects of Timorese children and adolescents, especially females, are among the poorest in the world

Twenty percent of Timorese youth aged 15-24 are not in school or working, a rate which has not declined since 2010, caused by subpar education, limitations to health service delivery, and ineffective social protection during childhood and adolescence. The average "quality-adjusted" educational attainment of only 6.3 years is symptomatic of the poor learning outcomes, especially as children spend some 10.6 years in school. Children from poor families and those living in remote parts of the country are worse off. Severe overcrowding in classrooms and high student-teacher ratios with little improvement in teaching competency results in age-grade distortion, early repetition (the third-highest in the world, Figure ES4), dropout rates of 20 percent, and demotivation. Social protection services that aim to stimulate school attendance, including BdM, face considerable coverage gaps and have varying rates of success.

This is compounded by significant access barriers to essential health services. Unmarried girls and women under 20 are sometimes denied access to reproductive health services. Data availability and information systems for these health indicators are scant, preventing a full picture of the exact scale of these health challenges. Nonetheless, the limited available evidence suggests that only 19 percent of sexually active unmarried women meet their needs for contraception.

Figure ES4: Distribution of Grade 1 repetition (percent) in East Asia and Pacific (EAP) and Non-EAP countries



Source: Using EGRA for an Early Evaluation of Two Innovations in Basic Education in Timor-Leste, World Bank, MEYS Australian Government

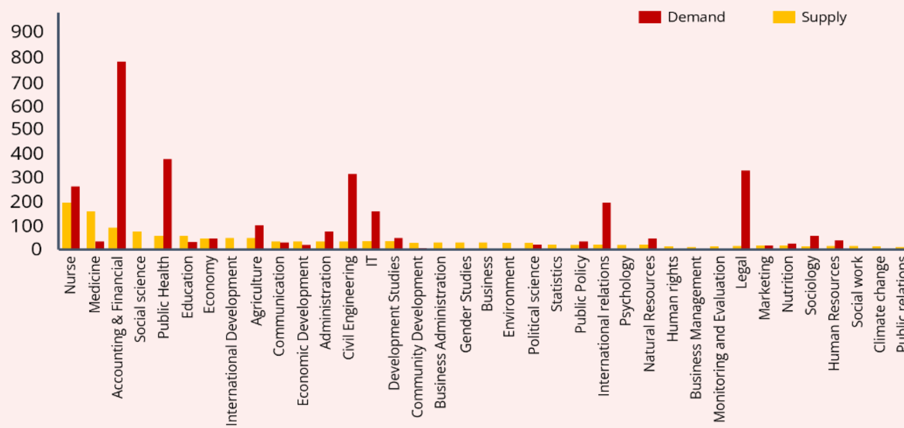
Key Message 6: The social protection and health care system for adults need a radical overhaul

At 14 percent in 2021, the unemployment rate is high, mainly driven by the suboptimal training and vocational systems and exacerbated by low private sector labor demand. The supply of tertiary-educated individuals is double that of the labor market demand yet unequally distributed across sectors (Figure ES5), with foreign labor supply plugging critical gaps. Significant skills gaps persist, including in terms of digital skills and skills needed in priority sectors such as manufacturing and tourism.

Around 72 percent of the employed population work in the informal sector, making most workers in Timor-Leste vulnerable to employment-related shocks. Timor-Leste's contributory pension system covers only 34 percent of the labor force and faces fiscal sustainability challenges. To maintain fiscal sustainability, the contribution rate would need to be increased to 6.7 percent of the payroll in the short term and reach 31 percent of the payroll by 2100 – which is unrealistic. The social protection system also lacks unemployment benefits critical to maintain livelihoods during periods of unemployment. While a non-contributory social pension provides cash transfers of US$50 per month for the disabled, it is difficult to assess whether this scheme reaches those most in need, as only applicants with permanent inability to work are considered eligible. Timor-Leste is thus in need of a diversified economy that allows for jobs creation in a resilient private sector complementing government spending, underpinned by a better targeted social protection system.

Health and well-being improvements of the workforce are also at risk. NCDs, driven primarily by tobacco and alcohol use and poor diet, are on the rise, which, combined with the absence of a strong, equitable, and universally accessible primary and referral health system, comes at a high cost.

Figure ES5: The unequal supply of highly skilled workers across sectors in Timor-Leste



Source: Adapted from SEFOPE's "Labour Market Outlook 2021 Edition 11" report

Key Message 7: Addressing the human capital crisis requires building institutional capacity and accountability and improving stakeholder coordination

Given the urgency with which the human capital crisis needs to be addressed, there is a need for accountability mechanisms at the highest level of Government. While the long process of strengthening institutions in Timor-Leste is underway since its independence, the legacy of systemic frailty in the country's post-conflict context deepens inefficiencies and hampers human capital accumulation. There is thus an urgent need for strengthened public financial management, procurement, and broader institutional capacity building, not only at the national level, but also at the municipal level. Improved institutional capacity is also tied to improved responsiveness and accountability. Accountability is particularly important as sectoral action plans tend to set ambitious, and at times perhaps too ambitious, targets, yet miss annual detailed activity plans and targets.

A large group of stakeholders in Timor-Leste is active in the field of human capital, yet significant silos remain within and across sectors, calling for greater coherence and coordination. Public stakeholders show an uneven interest in the human capital agenda, with Government initiatives seemingly fragmented. Intra- and inter-sectoral task forces could help ministries and public agencies to effectively address the joint challenges of delivering health, education, and social services, particularly tailored to Timor-Leste's most vulnerable citizens. Greater coherence and coordination are especially important given the financing transition underway in the country, during which human capital needs to increase in line with an increase in national income, while development assistance as a share of national income declines. Nevertheless, international stakeholders remain important, in

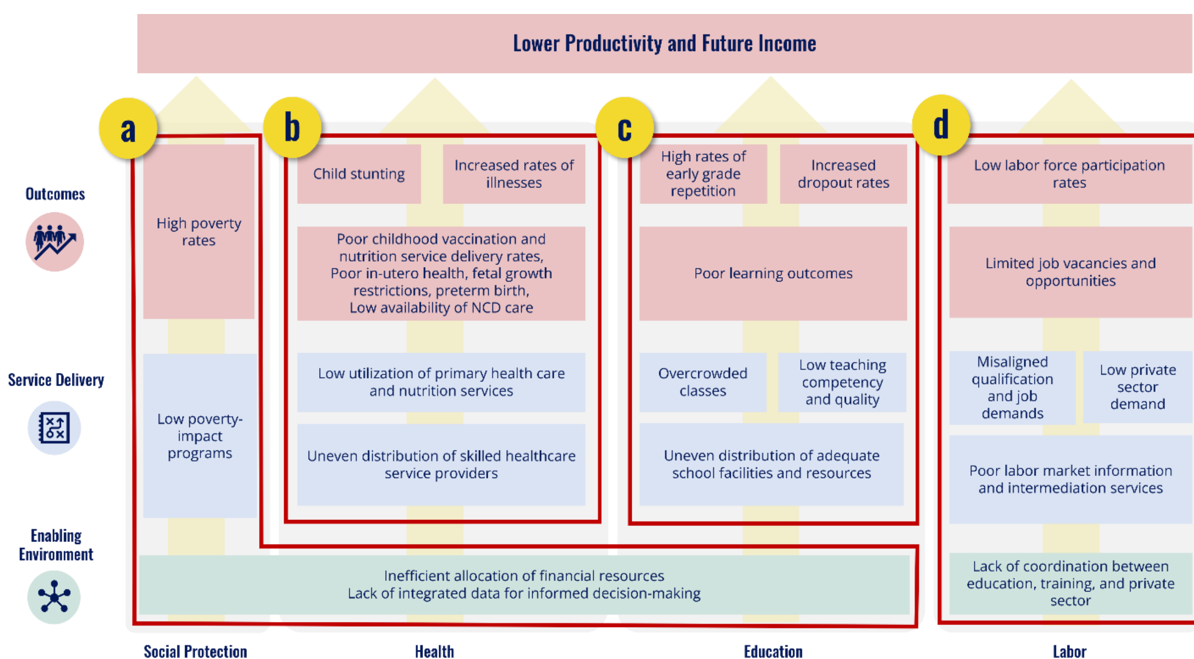
particular for human capital accumulation. Again, better intra- and inter-sectoral coordination is needed. This could for instance be fostered through a human capital steering committee aiming to converge sectoral investments and drive synergies toward better development outcomes.

Key Message 8: Eight core interventions can, together, be crucial building blocks to address the human capital crisis

The analysis of this Human Capital Review identifies eight priority interventions across four thematic areas to tackle the human capital crisis (Table ES1): (a) Improve the efficiency of public spending and stimulate demand for services (b) Improve health and nutrition outcomes through health care reform; (c) Improve education outcomes and close critical skills gaps; and (d) Foster evidence-based policy design, monitoring, evaluation, and accountability. Bringing together a sector and life course approach, the causal framework for the HCR's recommendations (Figure ES6) shows how low human capital accumulation in Timor-Leste leads to lower productivity and income.

This HCR is launched as the country enters the 2023 Parliamentary election period. Given the urgency of the issues outlined in the HCR, the establishment of a Human Capital Taskforce comprised of key line Ministries and stakeholders answerable to the Prime Minister of the forthcoming 9th Constitutional Government is key. The objectives of the Taskforce will be to review progress toward the existing sectoral plans in the health, education, and social protection sectors, as well as toward the recommendations outlined in the HCR against a set of clear and measurable intersectoral targets at regular intervals. Furthermore, this Taskforce should work across Government to address institutional bottlenecks and create the necessary enabling environment to tackle the human capital crisis in Timor-Leste.

Figure ES6: The HCR causal framework and core thematic areas for intervention



Source: Authors 2022

Table ES1: Eight recommendations across four thematic areas

Priority Areas	Recommendations	Timeline
a. Improve the efficiency of public spending and stimulate demand for health, education, and social services	1. To stimulate demand for health, education, and social services, revamp the BdM and BdM *Jerasaun Foun* social protection programs, with specific attention to nutrition interventions and primary care demand for maternal and child health such as through the introduction of behavioral change communication targeted at beneficiaries, community development sessions or enforced conditionalities.	Short-term
	2. To improve the efficiency of public spending, rebalance the social protection system toward those most in need by closing coverage gaps in the social safety net and the gradual rebalancing of limited resources toward programs that are targeted to the most vulnerable.	Medium-term
b. Improve health and nutrition outcomes through health care reform	3. To close critical supply-side gaps in health care, invest in physical infrastructure and equipment as well as in-service clinical training for current health workers, in parallel with developing a medium-term strategic plan for improving human resources in health.	Short-term
	4. To address the glaringly high stunting rate, institutionalize the multisectoral nutrition framework within CNAP-NFS with a clear focus on high-impact interventions and decisive target-setting, and strengthen comprehensive, co-located nutrition interventions for	Short- to medium-term

	the most vulnerable, including micronutrient supplementation, breastfeeding support, age-appropriate complementary feeding, anemia treatment, family planning, antenatal care services, and maternal mental health support	
c. Improve education outcomes and close critical skills gaps	5. To improve education outcomes, launch an effective learning acceleration program that emphasizes quick wins such as tailored teacher training activities, the utilization of a compressed curriculum and the provision of close technical support to teachers and school teams.	Short-term
	6. To reduce the high number of school dropouts, implement an early warning system able to identify students who are at risk of dropping out of school coupled with awareness-raising campaigns on the returns to education and financial incentives linked to school enrollment or attendance.	Medium-term
	7. To close critical skills gaps inhibiting private sector growth, conceptualize and implement a workforce development and deployment strategy, with an emphasis on closing the digital skills gap and ensuring workforce readiness for priority sectors such as manufacturing and tourism.	Medium-term
d. Foster evidence-based policy design, monitoring, evaluation, and accountability	8. To foster evidence-based policy design, monitoring, evaluation, and accountability, build stronger and more integrated, interoperable data systems for the health, education, social protection, and labor sectors and introduce an inclusive UID system.	Medium-term

1. Introduction

1.1. What is Human Capital?

Human capital is the knowledge, skills, and health that people accumulate over their lives. By enabling individuals to fully realize their potential, human capital is a central driver of sustainable growth and poverty reduction.[2] This is especially true in the context of a global economy in which between 10 and 30 percent of per capita gross domestic product (GDP) differences are attributable to cross-country differences in human capital (Hsieh and Klenow 2010). A key metric for the World Bank Group's analysis of human capital formation is the Human Capital Index (HCI, Box 1.1)—which measures, across 174 countries, the constraints to productivity of the next generation of workers given the prevailing rates of mortality, schooling, and health.

Box 1.1: Human Capital Index Methodology

The Human Capital Index (HCI) is an international metric introduced by the World Bank Group in 2018 that benchmarks the key components of human capital across economies. The HCI measures the human capital that a child born today can expect to attain by their 18th birthday. The HCI uses global estimates of the economic returns to education and health to create an integrated index that captures the expected productivity of a child born today as a future worker. The Index incorporates measures of different dimensions of human capital: health (child survival, stunting[a], and adult survival rates) and the quantity and quality of schooling (expected years of schooling and internationally comparable test scores).

The components of the HCI are combined into a single index by, first, converting them into contributions to productivity relative to a benchmark of complete education and full health. Multiplying these contributions to productivity together gives the overall HCI (HCI = Survival x School x Health).

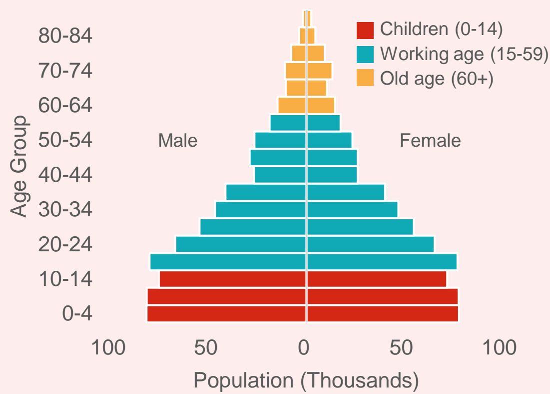
[a] Stunting is the impaired growth and development that children experience from poor nutrition, repeated infection, and inadequate psychosocial stimulation, leading to poor cognition and educational performance, low adult wages, lost productivity and, when accompanied by excessive weight gain later in childhood, an increased risk of nutrition-related chronic diseases in adult life (available at: https://www.who.int/news/item/19-11-2015-stunting-in-a-nutshell).

1.2. Why is Shifting Focus to Human Capital Important for Timor-Leste?

Timor-Leste is facing a human capital crisis, exacerbated by a looming macro-fiscal cliff in the next decade. Despite some notable progress over the last decade, measured by the HCI, a child born in Timor-Leste today will only be 45 percent as productive as an adult as they could be if they enjoyed complete education and full health (World Bank 2020). This worrying predicament is in part the consequence of the lasting legacy of 25 years of conflict under Indonesian occupation at the end of the 20th century. Estimates suggest that between 100,000 and 200,000 excess deaths occurred due to violence and starvation during the 1975-1999 period (Staveteig 2007). Following independence in 2002, public infrastructure was largely non-existent, destroyed or severely inadequate, with weak institutional frameworks, poor health and education indicators, extreme poverty, hunger, and violence leaving lasting imprints until today. Unfortunately, barring urgent transformative and timely action, this poor state of human capital in Timor-Leste could worsen further. The possible depletion over the next decade of the country's Petroleum Fund (World Bank 2022)—which has underpinned its oil-driven economy—means that the people of Timor-Leste will now need to be, more than ever, the drivers of the country's economic growth. Hence the importance of designing efficient interventions to accumulate and protect human capital.

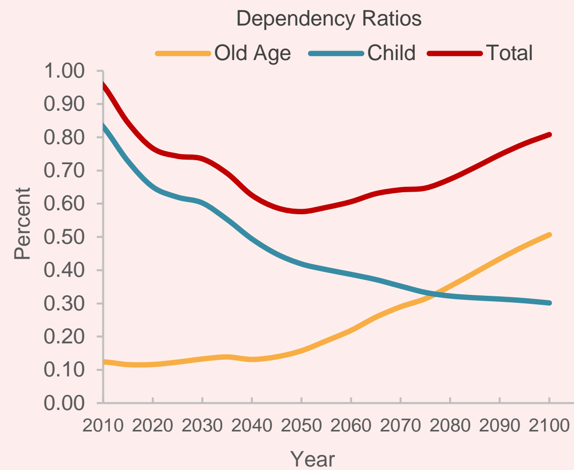
Timor-Leste's demographic profile offers an opportunity that must be seized now, by building the human capital of its current large cohort of children. The country's population is primarily young, with a median age of 21.0 and 35 percent of the population under the age of 15 (see Figure 1.1).[2] While Timor-Leste's dependency ratio - the ratio of children and the elderly population to the working population - is projected to decline in the near future, the continued growth of the country's older population, paired with a declining fertility rate, is projected to eventually give rise to an increasing dependency ratio. This will eventually result in almost one non-working age Timorese for every Timorese of working age by 2100 (see Figure 1.2). Without an adequately healthy, educated, and productive population, this transition may give rise to socially and economically destabilizing conditions. It is therefore crucial to take advantage of the window of opportunity now to ensure high levels of human capital and ample labor market opportunities for young children and students through high-quality education and health – not only to maximize the use of the remaining Petroleum Fund, but also to capitalize on the 'youth bulge' and translate it into a demographic dividend.

Figure 1.1: Population by Age Groups, 2022



Source: Timor-Leste Population and Housing Census 2022

Figure 1.2: Population Dependency Ratios



Source: Calculated based on United Nations, DESA, Population Division Database, 2019

Note: Old age and child dependency ratios measure the ratio of old age population (60+) and children (0-14), respectively, to the working age population (15-59). Total dependency ratio is the sum of both.

The country's lagging human capital accumulation has been exacerbated by the COVID-19 pandemic (Box 1.2). While Timor-Leste's HCI rose from 0.41 in 2010 to 0.45 in 2020, it lags that of countries with similar development levels: the average for lower-middle-income countries (LMICs) rose from 0.45 to 0.48 during the same period (World Bank 2020). The COVID-19 pandemic has exacerbated the human capital crisis. It has resulted in significant job losses for almost 40 percent of the working population and notable disruptions of human capital service delivery. This has resulted in missed vaccinations for children, lack of access to reproductive health care for over 50 percent of women seeking these services, while school closures have led to learning losses affecting a large proportion of Timorese students. A recent study shows that around 45 percent of school children from surveyed households had their lessons discontinued during the closure of schools in the country (UNDP 2021). These disturbances risk causing significant adverse long-term impacts on health, learning, and lifetime income, further hampering the country's efforts in making up for lost ground. They further ring the alarm that "business as usual" approaches to human capital accumulation and protection will not suffice.

Box 1.2: Impacts of COVID-19 on Human Capital

Employment and food security in Timor-Leste have been drastically affected by the COVID-19 pandemic, with potential long-term impacts. At the height of the pandemic, the various state of emergency-related restrictions (including domestic and international travel restrictions and (partial) closure of schools, public transport, businesses, and temporary closure of development organizations and government ministries) severely affected the most vulnerable, who rely on daily subsistence income. A 2021 study by the Ministry of Finance and the United Nations Development Programme (UNDP)[a] identified that 39.9 percent of those surveyed indicated that they had lost their jobs (42 percent men and 36 percent women), with adults between ages 25 and 39 the most affected (43.3 percent). More than two-thirds (68 percent) of businesses reported strong or moderate adverse impacts on their enterprise. Declining incomes and rising food prices also created near-term pressure on food security. Nationally, 41.1 percent of respondents were affected by moderate or severe food insecurity during the pandemic, which may have lasting impacts on nutrition and human development.

There have been interruptions in the delivery of essential health services due to COVID-19, with long-term impacts on health and well-being. Forty percent of respondents of the survey by the Ministry of Finance and UNDP indicated that they could not access health services because of COVID-19 restrictions, fear of infection, or travel bans. 14.1 percent of households indicated that barriers included the lack of public transport to access health services because of travel restrictions, and 17.2 percent mentioned fear of contracting COVID-19 while receiving health services. Some 37 percent of households with children under the age of 10 years indicated that one or more children missed vaccinations, with children in the lowest income quintile more likely to have been affected than those in the highest quintile. Of women reporting the need for reproductive health services during the state of emergency, 51.8 percent reported an inability to access them. According to the survey, child marriages and teenage pregnancies also increased during this time, as did rape and child physical and sexual abuse. These health impacts will have lasting consequences, in particular for the generation of children and young people currently growing up in Timor-Leste.

School closures are likely to have translated into significant learning losses. All schools were closed in late March 2020 for several months. Around 45 percent of students from households that were surveyed in 2020 had their lessons fully discontinued. The loss of learning is unlikely to be uniformly distributed across socioeconomic groups, particularly when factoring in the lack of access to remote learning modalities. Instead, the pandemic-related combination of being out of school and the loss of family livelihoods is likely to have exacerbated existing inequalities leaving girls, students with disabilities, and other marginalized students especially vulnerable. The pandemic will likely also exacerbate the poor readiness of preschool-age children for basic education.

In turn, learning losses are likely to translate into income losses. A learning loss simulation for EAP countries estimates a drop in lifetime projected earnings of US$28,000 per individual and a total GDP cost of US$5.9 trillion. It also estimates an increase in learning poverty (inability to read and understand a simple text by age 10) in the region from 35 percent before COVID-19 to 42 percent. Dropout projections also estimate a 9.5 percent increase because of COVID-19, or an additional 2.6 million primary and lower secondary age out-of-school children.

In response to the severe impacts of the COVID-19 pandemic, the Government heightened its commitment to protect the Timorese population through social protection measures. This included a package of measures to respond to economic, social, and financial risks, including the delivery of a near-universal COVID-19 cash transfer of US$100 per month per household for two months, wage subsidies (60 percent of the wage cost) for formal sector employees, as well as the purchase of three months emergency supply of rice. The pandemic has provided the Government with experience in making use of technology and harnessing stronger interagency coordination. This experience could prove highly beneficial in the post-COVID-19 era. For instance, for the delivery of COVID-19 cash transfers the Ministry of Social Solidarity and Inclusion (MSSI) utilized digital solutions to verify household information in the field and to track implementation and payment progress. This experience has demonstrated the advantages of transforming payments and other delivery mechanisms from manual systems to fully digital solutions that offer choice and convenience to beneficiaries. More broadly, the experience during COVID-19 has also reinforced the need to establish an Adaptive Social Protection strategy to be better able to prepare and respond to future crises, including natural disasters.

[a] UNDP 2021. *Socio-Economic Impact Assessment of Covid-19 in Timor-Leste, Round 2, 2021.* https://www.undp.org/timor-leste/publications/socio-economic-impact-assessment-covid-19-timor-leste-round-2-2021.

Even before the pandemic, however, despite a high overall level of spending on human capital, spending did not effectively translate into expected levels of performance nor improved development outcomes. This is especially the case when compared to other countries that spend a smaller percentage of their GDP and achieve higher HCI levels. Persistent challenges include implementation inefficiencies, lack of program coordination, fluctuating budgeting, misalignment between stakeholders, and anomalous targeting of Timor-Leste's social protection component of human capital investment.

A sharper focus on human capital investment is essential for Timor-Leste's sustained long-term growth.[3] Better human capital is not only a development outcome in itself, it also contributes to economic growth and poverty reduction. Increased human capital investments typically disproportionately benefit the poor by addressing initial service deficiencies and gaps, thereby reducing inequalities. There are also spillover effects. For example, better education may lead to lower fertility rates coupled with lower child mortality rates and lower child stunting rates. The spillover goes in the other direction as well – children who escape stunting achieve better educational outcomes (Shekar et al. 2017). On average they gain an additional year of schooling compared to their stunted counterparts.[4]

Cross-country analysis also suggests that a dollar of public spending on human capital may be more effective than a dollar of public spending on physical capital to achieve a given set of income and poverty goals (Collin and Weil 2020).

Investing in human capital also enhances social cohesion and equity, while strengthening people's trust in institutions (World Bank 2021)—an important factor in mitigating fragility as Timor-Leste contends with the legacies of past conflict. Trust in institutions is particularly important for Timor-Leste, as the relatively new country initially relied on external organizations to support human development and the provision of social services, and where today there is fragmentation and lack of coordination among relevant stakeholders, policies, and regulatory frameworks.

Increased human capital accumulation would strengthen Timor-Leste's bid to join ASEAN, which has been reiterated following the 2022 election, aiming for a 2023 admission. Prospective members of ASEAN are evaluated on their legal, technical, financial, and human resources to fulfill ASEAN commitments through an institutionalized assessment process. A senior-official level working group assesses the national capacity of the applicant country and evaluates its political, economic, and sociocultural implications. Timor-Leste officially applied for membership to ASEAN in 2011, and at the 2022 40th and 41st ASEAN Summits and Related Summits was admitted in principle and granted observer status.[5] A lack of adequately qualified human resources has been a long-standing concern regarding Timor-Leste's bid. To place Timor-Leste in the best position possible to benefit from such a regional partnership (that is, improved market opportunities for the private sector), it must focus on developing its human capital accumulation to ensure its population's bright future and demonstrate its budding potential to its peers.

1.3. Human Capital Review: A Life Course Approach

Human capital accumulates across the life course, from early life to old age, and is facilitated or hindered by a country's delivery systems for health, education, and social protection services. A robust labor market also allows for the optimal utilization of human capital outcomes in a way that bolsters the economy. These systems are heavily influenced by the enabling environment in which they exist, defined by the relevant institutions, stakeholders, policies, regulatory frameworks, financing, data systems, infrastructure, and social norms. From an early age, the dimensions of human capital

complement each other. Proper nutrition *in utero* and in early childhood improves children's physical and mental well-being, enabling them to attend and perform well in school (Correa-Burrows et al. 2016; Shekar et al. 2017).[6] Consequently, children with higher quality education are more prepared to grasp labor market opportunities to fuel their country's economic development, enabling them to grow old healthy and financially protected.

A gender lens is particularly important when considering human capital accumulation. Well-educated and empowered women and girls not only strengthen a country's labor force, but also directly contribute to the health, nutrition, and educational outcomes of the next generation of children. Conversely, gender inequality impacts women throughout their life, but its effects are especially detrimental in childhood adolescence. Gaps between girls and boys in health and education outcomes, which persist mainly in low-income countries, lead to poor health and learning outcomes for girls and reduced labor market opportunities for women. These impacts of gender inequality are visible throughout women's lives, from early childhood to old age. In addition, challenges persist in the utilization of women's human capital: female labor force participation worldwide is 27 percentage points lower than men,[7] and the global gender wage gaps is around 16 percent (ILO 2018). These disparities are largely driven by non-educational factors, including occupational sex-segregation, disadvantageous social norms, lack of childcare and leave policies, sexual harassment, differential constraints in access to finance, and regulatory barriers to start and grow firms.[8] Striving for gender equality should be a top priority for any country striving to accrue human capital. Global GDP could increase up to 26 percent by closing the gaps between women and men in the workforce.[9] There are also strong intergenerational impacts. For instance, for a sample of developing countries, attaining gender equality could entail a 2.1 percent reduction in the rate of stunting (Wodon et al. 2020).

Early Life

High-quality health service delivery during pregnancy, delivery, and childhood is imperative to ensure good birth outcomes and nutrition, and prevention and treatment of infectious diseases such as diarrhea and pneumonia, which are leading causes of death in early life in Timor-Leste (WHO 2020). Moreover, the 1,000-day period from conception to age 2 is critical for brain development and impacts human capital outcomes in adulthood (Lo et al. 2016; Shonkoff et al. 2016). Malnutrition in all its forms has an estimated global economic impact of US$3.5 trillion annually (Global Panel 2016) and returns on investment in stunting could approach 3:1 (Gunther et al. 2016). Investing in preventing and reducing malnutrition can both reduce health care costs throughout the life course and improve productivity in

adulthood. Such interventions can include social protection programs that encourage health-seeking behaviors including maternal and post-natal treatments, raising the demand for essential services. Designed properly, cash transfer programs have been proven to decrease stunting and increase vaccinations coverage among the most vulnerable population, ensuring an equal start for all children (Cahyadi et al. 2020). Early childhood education is also crucial for children's development, learning, and lifetime opportunities.

Childhood/Adolescence

In childhood and adolescence, the period between early life and adulthood defined here as the period between 2 and 18 years of age, health services continue to be crucial to ensure good reproductive health, prevent and treat NCDs and their risk factors, and promote healthy longevity into adulthood (Patton et al. 2016). High-quality education services at this stage must ensure that children acquire the foundational cognitive and socioemotional skills to succeed in life and in the labor market. Social assistance programs such as conditional cash transfer can play a key role in incentivizing school attendance and retention among the poor and vulnerable.

Working Age

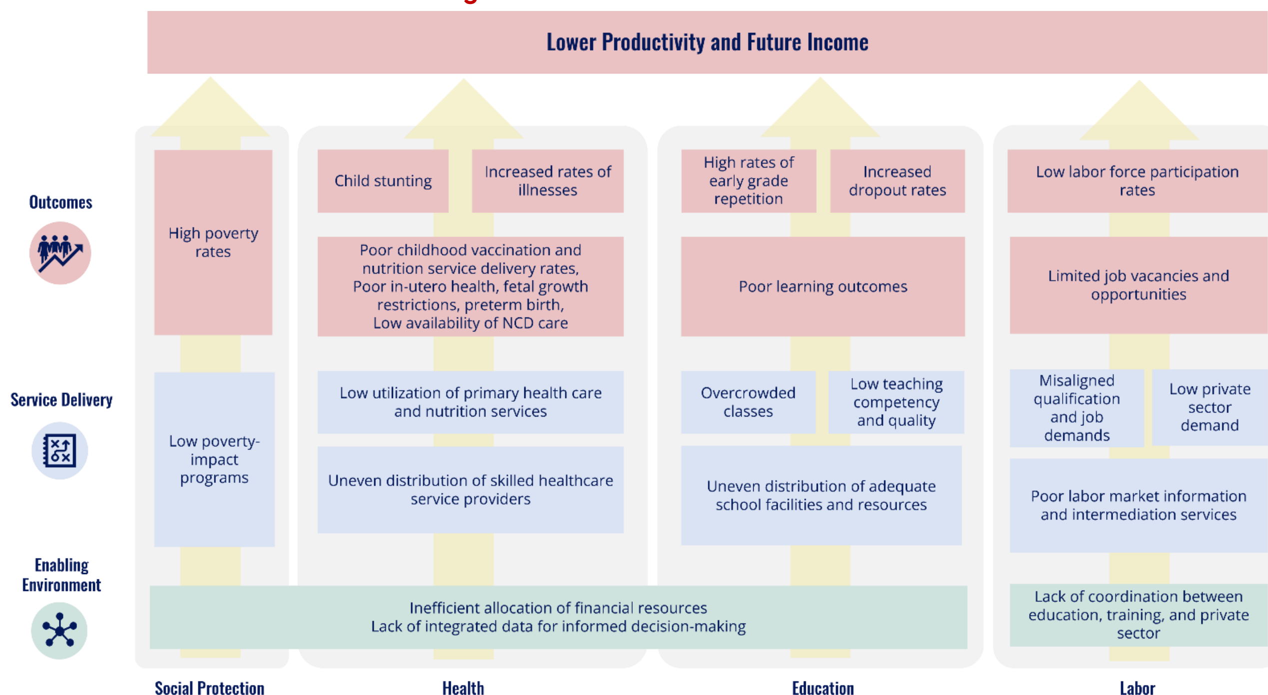
In working age, health services continue to be important as they relate to well-being and continued productivity of the population. Education services and opportunities for lifelong learning are paramount to prepare young people to enter the labor market and to equip the working age population with the needed skills to perform their jobs. To reap the benefits of the human capital accumulated up to this point, it is also crucial to ensure there are labor market opportunities in addition to a strong and well-functioning social insurance system that keeps individuals and families out of poverty in case of shocks.

Aging Population

In aging populations, service delivery includes appropriate geriatric health care, continued opportunities for learning and gainful employment, pension services, and financial protection for end-of-life care (The Lancet 2021). Social protection and labor services are particularly important because they provide not only income protection for aging members of the population but also allows them to stay meaningfully productive. Policies to promote productive ageing include trainings for older workers, full or part-time reemployment programs, as well as subsidies for employers to retain older workers (World Bank 2016).

This HCR assesses the enabling environment in Timor-Leste to deliver key services in the social protection, education, and health sectors, as well as the labor market, to identify important bottlenecks for interventions to improve development outcomes. Figure 1.3 summarizes how the current combination of inefficient social protection programs, low-quality and underutilized health services, unequally distributed and poor learning environments, and labor market inefficiencies result in low human capital and population productivity in Timor-Leste. Chapter 2 of the HCR provides an in-depth diagnostic of this low human capital accumulation, and dissects the status quo, trends, and shifting patterns in the health, education, social protection, and labor sectors. These patterns need to be reversed, and the HCR aims to be a significant contribution in guiding this reversal, with Chapter 3 outlining key intersectoral pillars of the enabling environment. With strategic investments in human capital, Timor-Leste's population can become the country's greatest asset. To that effect, the final chapter – Chapter 4 – identifies eight core interventions that could provide the blueprint for a Timorese population that reaches its full potential.

Figure 1.3: Causal Framework



Source: Authors 2022

Notes

1. Wantchekon et al. (2015), among others, provide evidence of the critical role that human capital plays in preventing the intergenerational transmission of poverty.

2. Data drawn from the *Timor-Leste Population and Housing Census 2022*, which was published online in 2023 by the National Institute of Statistics Timor-Leste (INETL). See https://inetl-ip.gov.tl/category/documents-publication/census-document-documents/document-census-population-documents/

3. The World Bank's Long-Term-Growth Model demonstrates that the impact on growth of public capital investments declines over time.

4. This correlation is observed in the World Health Organization's Nutrition Landscape Information System, accessible at: https://www.who.int/data/nutrition/nlis/info/female-education-levels

5. See ASEAN leaders' statement on the application of Timor-Leste for ASEAN membership, available at: https://asean.org/asean-leaders-statement-on-the-application-of-timor-leste-for-asean-membership/.

6. Global evidence has shown that children with healthier diets perform better in the English language and the sciences, while malnourished children have lower scores on IQ tests. Additionally, children who are stunted in early life (first 1,000 days from pregnancy to 24 months) have lower incomes in adult life compared to their peers who were well-nourished, perpetuating the poverty–stunting vicious cycle.

7. This data is extracted from the article "Human capital for all: are we there yet? 5 things to know about gender equality and human capital," published on the World Bank's Data Blog, available at: https://blogs.worldbank.org/opendata/human-capital-all-are-we-there-yet-5-things-know-about-gender-equality-and-human-capital

8. Ibid.

9. Data is drawn from summarized data presented on the Council on Foreign Relations' *Growing Economies through Gender Parity* page, available at: https://www.cfr.org/womens-participation-in-global-economy/

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2. Diagnostics

An Assessment of Timor-Leste's Human Capital Outcomes and Service Delivery Systems

Key Points

- Timor-Leste has lower overall human capital accumulation compared to other countries in the region at similar income levels.
- Early life and maternal morbidity and mortality remain high, and highly inequitable by geography and income level. Suboptimal breastfeeding and diet contribute to high rates of malnutrition, which in turn translates into increased risk of NCDs in adulthood.
- Early marriage among women contributes to gender inequities that have long-term impacts on female human capital utilization. The pathway involves early pregnancies leading to elevated risks of maternal and infant mortality and stunting.
- There has been variable progress in the coverage of early life essential health services over the past decade, with large improvements in antenatal care coverage, but a decrease in vaccination rates.
- While there is an overall increase in access to education, quality of education is a major challenge to be immediately addressed, as are the internal inefficiencies of the education system. Despite the recent expansion of access to preschool education, enrollment rates remain low particularly in remote regions.
- Students are not learning as expected for a variety of reasons, including bad teaching and learning practices and conditions. The twin issues of grade repetition and school dropouts also hinder the education system's internal efficiency, as public resources are being spent on students who are not flowing in the system as expected.
- While the private sector complains of skills shortages, an increasing fraction of the employed population that has completed education appears over-qualified for their job according to their formal qualifications. This underscores the importance of a workforce development and deployment strategy that matches skills supply and demand.
- The *Bolsa da Mãe* program aims to reduce poverty, promote attendance of nine years of compulsory basic education, and increase use of primary health care services. While the number of beneficiaries has increased, there are still important coverage gaps, impact on household budgets is low, and there is a lack of demand generation for essential service utilization.

2.1. Overview

Timor-Leste's HCI score of 0.45 is lower than that of the majority of other LMICs in the EAP region (see Table 2.1).[1] Five percent of children do not survive to age 5 (two times the regional average, and higher than the LMIC in EAP average), 47 percent of children are stunted (one of the highest rates in the world)[2], and learning outcomes measured by learning-adjusted years[3] of school is at 6.3 years, which is lower than the LMIC in EAP average, with significant gender differences (see Box 2.1). Timor-Leste is also in the second-to-lowest quartile for the learning-adjusted years of schooling and expected years of schooling metrics globally.

Table 2.1: HCI and HCI Component Scores for LMICs in the EAP Region, Ordered by Descending HCI

Country Name	HCI 2020	Probability of Survival to Age 5	Fraction of Children Under 5 Not Stunted	Expected Years of Schooling	Learning-Adjusted Years of Schooling	Adult Survival Rate
Vietnam	**0.69**	0.98	0.76	12.9	10.7	0.87
Mongolia	**0.61**	0.98	0.91	13.2	9.2	0.80
EAP Average	**0.59**	0.98	0.76	11.91	8.35	0.86
Global Average	**0.56**	0.97	0.77	11.31	7.81	0.85
Philippines	**0.52**	0.97	0.70	12.9	7.5	0.82
Micronesia, Fed. Sts.	**0.51**	0.97	-	11.8	7.2	0.84
LMIC in EAP Average	**0.50**	0.97	0.69	10.95	7.03	0.83
Kiribati	**0.49**	0.95	-	11.2	7.4	0.81
Cambodia	**0.49**	0.97	0.68	9.5	6.8	0.84
Myanmar	**0.48**	0.95	0.71	10.0	6.8	0.80
Lao PDR	**0.46**	0.95	0.67	10.6	6.3	0.82
Vanuatu	**0.45**	0.97	0.71	10.1	5.6	0.87
Timor-Leste	**0.45**	0.95	0.54	10.6	6.3	0.86
Papua New Guinea	**0.43**	0.95	0.51	10.3	6.0	0.78
Solomon Islands	**0.42**	0.98	0.68	8.3	4.7	0.86
Global LMIC Average	**0.42**	0.94	0.70	9.24	5.45	0.76

Source: World Bank HCI Database

Box 2.1: Timor-Leste HCI Components Disaggregated by Gender

Table B2.1.1: HCI Components Disaggregated by Gender

Component	Boys	Girls	Overall
HCI	**0.44**	**0.47**	**0.45**
Probability of survival to age 5	0.95	0.96	0.95
Fraction of children under 5 not stunted	0.52	0.57	0.54
Expected years of school	10.3	10.9	10.6
Learning-adjusted years of school	6.0	6.6	6.3
Adult survival rate	0.83	0.88	0.86

Source: World Bank HCI Database

Females outperform males on all components of the HCI, though the reverse is the case in terms of human capital utilization. The HCI is 0.44 for boys as compared to 0.47 for girls. This difference is mostly driven by girls outperforming boys in terms of education outcomes, and by the higher adult survival rate of women as compared to men. However, when the HCI is adjusted for 'basic utilization', i.e., the fraction of the working age population that is employed, the value is 0.31 for males and 0.27 for females. The fact that female non-employment is higher than male non-employment in Timor-Leste underscores the importance of considering all aspects of human capital – not only accumulation but also utilization.

2.2. Early Life

2.2.1. Overview

The first five years of life are the most important for human capital accumulation, with impacts that extend throughout life. Under-accumulation of human capital at this juncture of life is irreparable. This makes investments in healthy pregnancy, safe birth, breastfeeding, healthy nutrition and appropriate feeding practices, cognitive stimulation, and immunization coverage especially crucial.[4] There has been variable progress in the coverage of early life essential health services in the country over the past decade. While there have been large improvements in antenatal care coverage, vaccination rates have

declined and geographic and socioeconomic disparities persist, including in access to care. Specialist care for mothers and children should therefore be more equitably provided across the country in better-equipped and more resilient facilities that leverage the potential for digitalization of certain antenatal care services.

Early childhood education is fundamental for children's development, learning, health, and lifetime opportunities. Three in every four Timorese children at preschool education age do not benefit from early learning programs, which is extremely low compared to countries with similar development level. Interventions to foster cognitive and socioemotional development of children in their early years have a profound impact on their ability to benefit from primary education and realize their potential as adults later in life. It is paramount that children start primary education with the physical and mental strength to learn, read, and understand what they read. School readiness enables children to become independent learners over time, reduces the cost of schooling, and increases the efficiency of public spending.

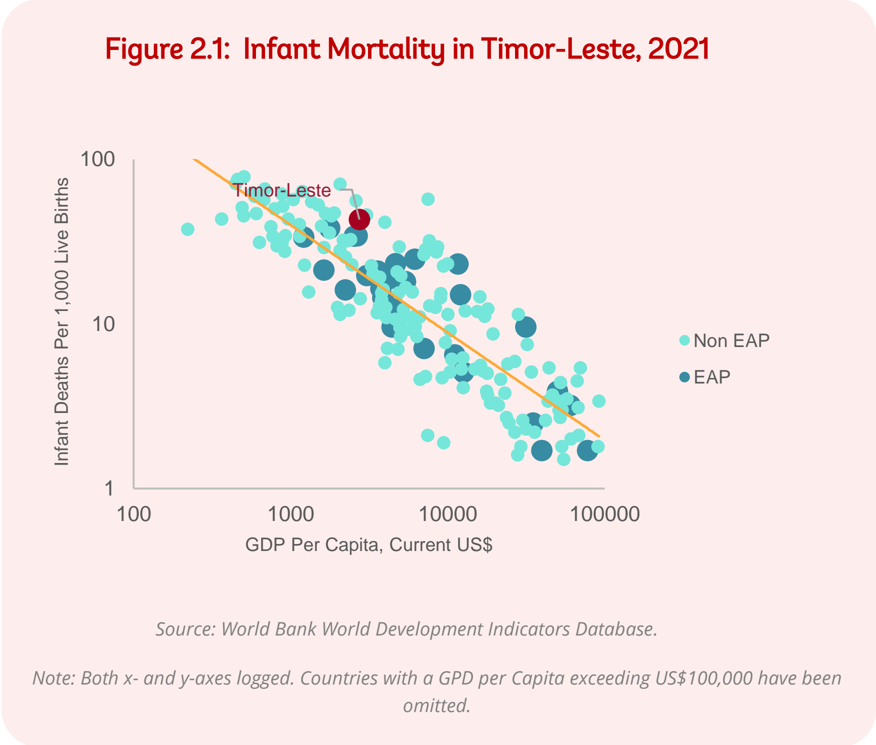
2.2.2. Health

Neonatal disorders remain the leading cause of morbidity and premature mortality in Timor-Leste. The neonatal mortality rate is 22.2 per 1,000 live births. Although this a notable advance from 2000 (39.1), it is still almost three times higher than the regional average.[5] While the share of disability-adjusted life years (DALYs) that are lost due to neonatal conditions has declined since 1990, these conditions remain the leading cause of morbidity and premature mortality. Neonatal disorders include preterm birth complications, sepsis, asphyxia, and other trauma.[6] Part of the burden of preterm birth reflects high rates of nutrition deficiencies, including an anemia prevalence of 29.9 percent among women of reproductive age (World Bank 2019), and high rates of childbirth among girls under age 18.[7]

Though the infant mortality rate in the country has halved since 2002, it remains high and inequitably distributed. Infant mortality declined to 43.1 per 1,000 live births in 2021 (see Figure 2.1) but is still higher than the LMIC in EAP average (and three-times higher than the regional average). The under-5 mortality rate has shown a similar decline, from 101.1 to 50.5 per 1,000 live births in the 2002-2021 period, compared to a regional decline of the already lower rate of 37.2 per 1,000 live births in 2002 to 15.5 per 1,000 in 2021.[8] Moreover, these rates are very unequally distributed across Timor-Leste's geography and socioeconomic spectrum. Under-5 mortality is two to three times higher in the Special

Administrative Region of Oecusse, which is remote and hard-to-reach, as compared to other municipalities (see Figure 2.2) and is twice as high among households in the poorest quintile as compared to those in the richest quintile.[9] Remote and rural communities therefore need better specialist care in better-equipped facilities. There is also potential to explore innovations such as telemedicine services for virtual antenatal care visits and drone delivery of emergency medical supplies.

Figure 2.1: Infant Mortality in Timor-Leste, 2021

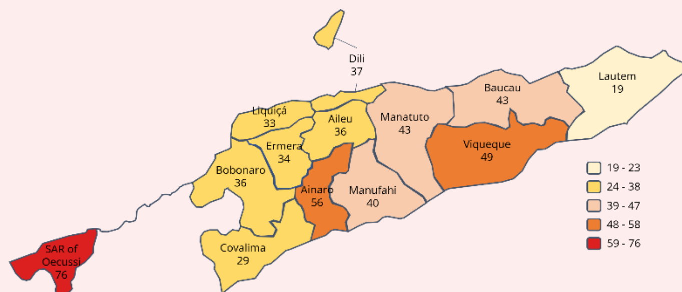


Source: World Bank World Development Indicators Database.

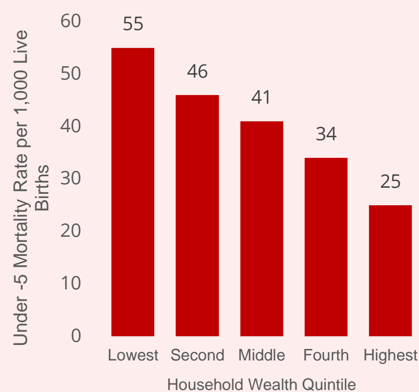
Note: Both x- and y-axes logged. Countries with a GPD per Capita exceeding US$100,000 have been omitted.

Figure 2.2: Under-5 Mortality Rate per 1,000 Live Births in Timor-Leste by Geography and Socioeconomic Status

By municipality



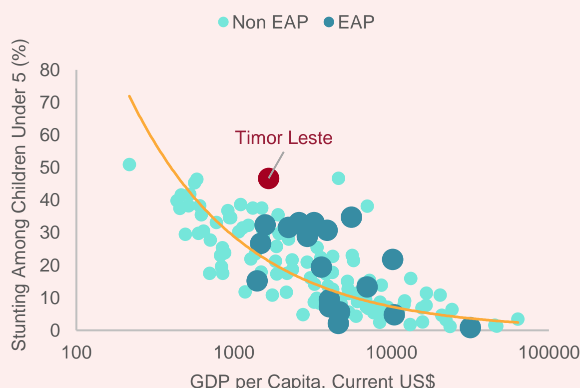
By household income level



Source: Timor-Leste Demographic and Health Survey (DHS) 2016

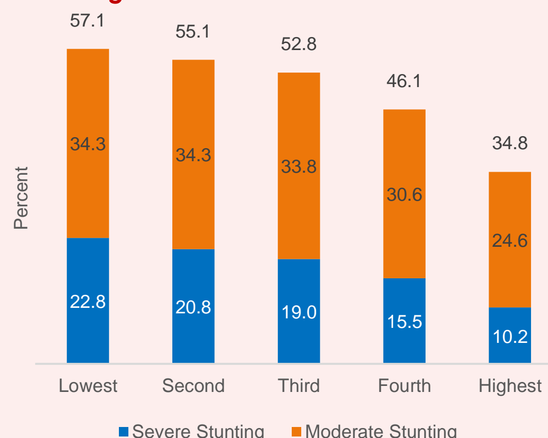
Inadequate childhood nutrition is a severe problem in Timor-Leste, with long-term consequences. Almost half (47.1 percent) of all Timorese children under 5 are stunted — a startlingly high statistic compared to other countries at similar income levels (see Figure 2.3). The overall stunting rate is around 40 percent or higher across all income quintiles (see Figure 2.4). There are significant differences across municipalities (the stunting rate is 63 percent in Ermera but 'only' 32 percent in Dili). Stunting affects cognitive and physical development, which in turn adversely impacts educational attainment, future income, and adult health. Recent survey results also indicate that poor nutrition manifests in both long-term nutrition metrics (such as stunting) and in acute ones: 8.6 percent of children under 5 in the country are wasted (more than 2 standard deviations below the global median for weight-for-height), with 1.5 percent suffering from severe wasting (more than 3 standard deviations below the global median). Meanwhile, 32.4 percent of children are underweight (more than two standard deviations below the global median for weight-for-age).[10]

Figure 2.3: Stunting Prevalence in Timor-Leste, 2020



Source: World Bank World Development Indicators Database
Note: s-axis logged. Stunting figure from the latest data available between 2012-2020.

Figure 2.4: Stunting Rate among Children under 5 by Household Income Level, 2020



Source: Timor-Leste Food and Nutrition Survey 2020

Poor nutritional outcomes among Timorese children are the result of a variety of factors, many of which are transgenerational. Approximately 30 percent of stunting prevalence among children under 2 in Timor-Leste may be attributable to fetal growth restriction and preterm birth (which are driven by *in utero* and maternal risk factors before a child is born) (Danaei et al. 2016). These prebirth factors are in turn often driven by key risk factors such as maternal short stature, maternal underweight, and maternal anemia, which themselves are the result of suboptimal nutrition. In addition, childhood stunting is closely associated with teenage motherhood and short birth intervals. This underscores the importance of interventions across the life course to improve early life outcomes. Widespread stunting among children also reflects relatively low access to health (particularly reproductive health) and nutrition-related information and services for women and girls.

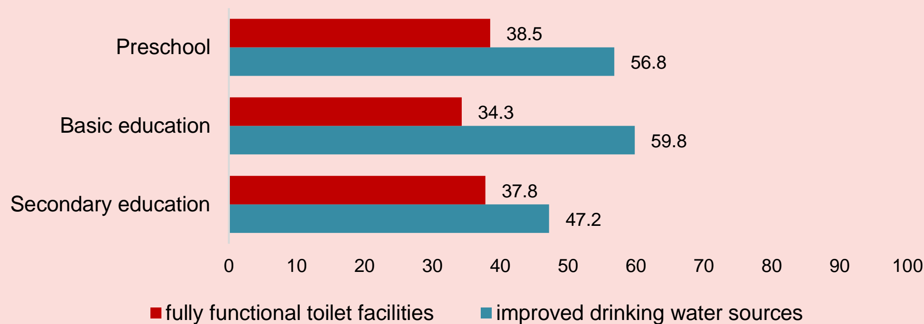
Infant and young child feeding practices are very poor, causing long-term negative nutrition and health impacts. The 2020 Global Hunger Index ranks Timor-Leste 110th out of 121 countries for 'hunger', which captures three dimensions: insufficient availability of food, shortfalls in the nutritional status of children, and child mortality (which is largely attributable to undernutrition).[11] The 2020 Timor-Leste Food and Nutrition Survey indicates that a mere 46.8 percent of children in Timor-Leste were breastfed within an hour of birth, and only 64.2 percent of children below six months were exclusively breastfed. Rates of continued breastfeeding at 12-15 and 20-23 months of age were 68.4 percent and 29.2 percent, respectively. While this is relatively high compared to other LMICs, appropriate complementary feeding remains a key challenge. Specifically, only 52.3 percent of children

aged 6-23 months achieved a minimum meal frequency,[12] 35.3 percent achieved a minimum dietary diversity, and only 14.3 percent achieved a minimum acceptable diet.[13] The lasting impact of the COVID-19 pandemic will continue to add to the challenge of low purchasing power, leading to a further reduction in the diversity of diet and lower food intake.[14] Micronutrient deficiencies are also widespread. Specifically, Vitamin A and iron intakes in daily diet is insufficient (GDS, MoF, and ICF 2018). Thus, food-based interventions, including food fortification, deserve increased attention. Finally, as Timor-Leste is undergoing a nutrition transition, there is an increased double burden of undernutrition as well increasing overweight and obesity rates and related NCD risk.

Box 2.2: Water, Sanitation and Hygiene (WASH) and Nutrition

Suboptimal WASH also contributes to high rates of child undernutrition in Timor-Leste. Poor WASH contributes to childhood diarrhea (the eighth-leading cause of death in Timor-Leste),[a] which can lock young children into a cycle of sickness and undernutrition and can develop into a chronic condition: tropical enteropathy. While 85 percent of the population in Timor-Leste has access to safe drinking water, the disparity between urban and rural areas is striking: 97 percent in urban areas compared to 81 percent in rural areas. Moreover, only 58 percent of the population has access to basic sanitation, and 18 percent still practice open defecation. Again, notable disparities exist between urban and rural areas: 74 percent of urban residents have access to basic sanitation,[b] compared to only 49 percent in rural areas. Similarly, at the national level, 28 percent have access to basic hygiene facilities (22 percent in rural areas and 43 percent in urban areas).[c] Even children attending school are not guaranteed safe water and sanitation. The percentage of schools with improved drinking water and functional toilet facilities is below 40 percent and 60 percent, respectively (see Figure B2.2.1). Therefore, improvements in WASH infrastructure will be necessary to improve childhood health and nutrition outcomes. These improvements can build on the water and sanitation development plans recently initiated by the Ministry of Public Works. These impressive plans aim to achieve 100 percent access to water and hygienic toilets by 2030, and include institutional reform aimed at clearly separating service provision, regulation, and policy-making functions.

Figure B2.2.1: Percentage of Schools with Improved Drinking Water and Functional Toilet Facilities



Source: UNICEF Timor-Leste SDGs Child Data Book 2018.[d]

[a] See the Institute for Health Metrics and Evaluation (IHME) webpage on Timor-Leste, available at https://www.healthdata.org/timor-leste

[b] Defined as households using improved sanitation facilities which are not shared with other households. See https://washdata.org/monitoring/sanitation

[c] See the WHO-UNICEF Joint Monitoring Program data on WASH, available at https://washdata.org/data/household#!/table?geo0=country&geo1=TLS

[d] Available at https://www.unicef.org/timorleste/media/2631/file/SDG_English_Final%20Artwork_0423_web.pdf

There has been variable progress in the coverage of early life essential health services in Timor-Leste. Between 2009 and 2016, there was significant improvement in selected maternal and child health services, such as antenatal care coverage rates (4+ visits), institutional deliveries, and the use of skilled birth attendants (see Table 2.2). There has also been a substantial increase in the share of women receiving nutrition supplements during pregnancy, for instance, for iron, from 63 percent in 2009, to 85 percent in 2016, which impacts both maternal and early child health.[15] However, the probability that an infant is delivered in a health facility is still less than 50 percent, which contributes to the high neonatal mortality rates in the country. Telemedicine solutions for antenatal care hold great potential to overcome physical and financial barriers to care in the rugged environment of Timor-Leste.

Table 2.2: Pregnancy, Delivery, and Early Child Health Service Indicators in Timor-Leste, 2009-2016 (percent)

Indicator	Year		Percent change
	2009	2016	
Antenatal visits for pregnancy: 4+ visits	55.1	76.7	39.2
Assistance during delivery from a skilled provider	29.9	56.7	89.6
Place of delivery: Health facility	22.1	48.5	119.5
Delivery by caesarean section	1.7	3.5	105.9
DPT3 vaccination received	66.4	61.7	-7.1
Measles vaccination received	67.8	69.3	2.2
Children aged 12-23 months fully vaccinated	52.6	48.7	-7.4

Source: Timor-Leste Demographic Health Survey 2009/10 & 2016

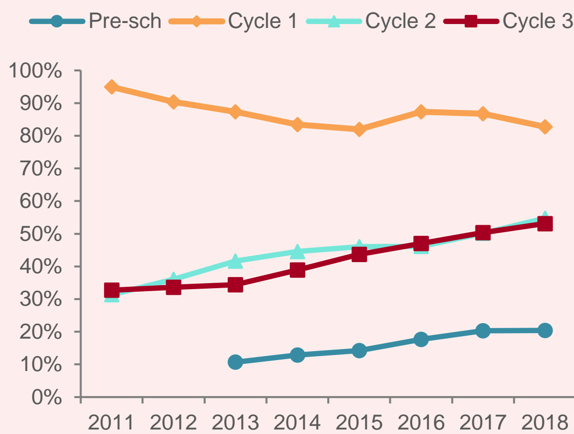
Poor availability and utilization of primary health care (PHC) services and facilities for childhood vaccination and nutrition put children further at risk. PHC services and facilities often lack the necessary infrastructure, equipment, essential goods, and skilled staff. Despite notable improvements in overall utilization of services from 2009 to 2016 (see percent changes in Table 2.2), utilization remains low. Vaccination rates among children aged 12 to 23 months even slightly declined between 2009/2010 and 2016 (from 53 percent fully vaccinated to 49 percent). Coverage of three doses of diphtheria, tetanus toxoid and pertussis (DPT3) vaccine in particular declined by over 7 percent. In addition, a recent survey found that only 77.7 percent of eligible children (aged 6 to 23 months) had received a dose of Vitamin A supplementation in the last six months, and among children aged 12 to 59 months, the coverage of deworming was only 71.4 percent.[16] Moreover, geographic and socioeconomic disparities persist: children in Ermera are half as likely to be fully vaccinated as compared to those in Baucau (30.6 percent versus 67.4 percent), and children of less-educated mothers are less likely to be vaccinated than those of more educated women.[17]

2.2.3 Education

Despite notable increases in access to preschool education over the last decade (from 8 to over 20 percent, see Figure 2.5), Timor-Leste is still far from its 2023 target of a 50 percent enrollment rate set in the Five-Year Plan (2018-2023)[18]. The expansion in the number of public preschools has been impressive: from 90 to 239 institutions between 2010 and 2018. These 239 public preschools are complemented by 135 private ones, mostly

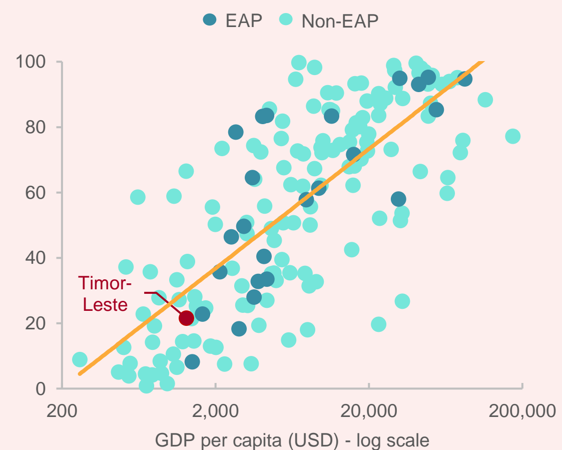
clustered in the capital, Dili.[19] However, overall preschool enrollment rate is still lower than expected for the country's level of development (see Figure 2.6). This low access to quality preschool education hinders the readiness for basic education.

Figure 2.5: Net Enrollment Rates by Education Level



Source: Timor-Leste Education Management Information System (EMIS)
Note: Cycles 1-3 represent basic education, with cycle 1: grades 1-4; cycle 2: grades 5-6; cycle 3: grades 7-9

Figure 2.6: Net Pre-primary Enrollment Rates (percent) in Timor-Leste versus Other Countries



Source: World Development Indicators database

There are large disparities in the distribution of infrastructure and human resources for preschool education across municipalities. The preschool-age population to preschool teacher ratio, and preschool-age population to preschool ratio are very high across all municipalities (see Table 2.3). As a consequence, teaching and learning conditions at preschools are suboptimal for proper cognitive and socioemotional development of the young Timorese children. Moreover, there are large disparities across municipalities: While in Manufahi there is one preschool teacher for every 47 children of preschool age, in Baucau there are 405 preschool-age children for every teacher. Similarly, while Manufahi has one preschool for every 114 preschool-aged children, in Baucau there is one school for every 648 children.

Table 2.3: Preschool-age Population and Teachers per Municipality

Municipality	Preschool-age (3-5 years) population	Number of students	Number of preschools	Number of teachers	Preschool-age population/ teachers	Preschool-age population/ preschools
Aileu	4,137	1,101	26	31	133.5	159.1
Ainaro	5,742	873	18	39	147.2	319.0
Baucau	9,725	957	15	24	405.2	648.4
Bobonaro	8,139	2,427	51	66	123.3	159.6
Covalima	5,187	1,003	24	42	123.5	216.1
Dili	22,908	5,368	55	163	140.5	416.5
Ermera	11,731	1,472	27	33	355.5	434.5
Lautem	5,494	1,627	23	44	124.9	238.9
Liquica	6,539	1,503	34	48	136.2	192.3
Manatuto	3,816	786	13	19	200.9	293.6
Manufahi	4,316	1,436	38	91	47.4	113.6
Oecussi	5,464	995	15	23	237.6	364.3
Viqueque	5,949	1,851	35	50	119.0	170.0
National	**99,149**	**21,399**	**374**	**673**	**147.3**	**265.1**

Source: EMIS 2018

Note: Estimated using enrollment data from EMIS 2018

2.2.4 Social Protection

Social protection can play an important role in fostering human capital accumulation during the early years. Evidence from around the world shows that conditional cash transfer programs centered around health and education can reduce stunting, increase the rate of childbirth in the presence of trained attendants, and increase school enrollment (Cahyadi et al. 2020). Social safety net programs can prevent negative coping behavior in the face of shocks, which in the absence of support often negatively impact household expenditures on food and health.

BdM supports the accumulation of human capital through its education and health-centric conditionalities. Introduced in 2008, the BdM conditional cash transfer program is Timor-Leste's only social protection program that targets poor and vulnerable households with children with the aim of reducing poverty, increasing use of primary health services, and promoting attendance of compulsory nine years of basic education. It offers a US$5 cash transfer per child per month for up to three children such that US$15 is the maximum

amount a household may receive per month. The program is implemented by the National Directorate of Social Development of MSSI. To be eligible for the transfers, children aged 0-1 years should receive all mandatory vaccines and those aged 0-5 should visit the nearest health center to receive regular health check-ups every six months. The extent to which these conditionalities can be expected to result in improvement in health and education among young children is difficult to ascertain, partly because the conditionalities are considered soft conditionalities that are not rigorously monitored with no consequences in terms of payment if beneficiaries do not comply (World Bank 2015). During the design phase of BdM, there was also a plan to develop community development sessions aimed to improve beneficiaries' behaviors and attitudes towards child health, nutrition, parenting, education, and family planning, but these sessions have not yet been implemented.

In July 2022, the Government introduced the *Bolsa de Mãe Jerasaun Foun* (New Generation BdM), a universal unconditional cash transfer program for households with children under 6 years old, expectant mothers, or children with a disability. The program is piloted in three municipalities with the highest stunting and poverty, namely, Ainaro, Bobonaro, and Oecussi. The benefit level is US$15 per month for expectant mothers and US$20 per month per child.[20] An additional US$10 is provided if a child has a disability. The registration takes place at health clinics, encouraging beneficiaries to seek maternal and childcare. The initial assessment of the program shows significant potential to improve the human capital impact of the program, among others, by making the design nutrition-sensitive. This can be done, for instance, through a behavioral change approach that promotes consumption of nutritious food items among expectant mothers and children or by introducing restrictions such that most of the transfers are spent on food items that improve the household's diet.[21] The extent to which the health service-seeking behavior has improved should also be monitored closely once the program is fully up and running. The New Generation BdM is also supposed to address BdM's adequacy and coverage issues. However, it is important to note that the costs for an unconditional and universal cash transfer will be high.[22] Thus, it will be important to regularly revisit the availability of funding as well as the program design to reconfirm that it provides good value for money and enhances human capital outcomes.

2.3. Childhood & Adolescence

2.3.1. Overview

Children's and adolescent's health, education, and skills are imperative for human capital accumulation. Survival rates are high among children and adolescents in Timor-Leste.[23] This means that improving access to quality education and skills training presents the greatest opportunities to increase human capital among members of this age group, including for those who want to enter the labor market early. In other words, ensuring young people receive quality education and training is key in translating the youth bulge into a demographic dividend. A focus on girls and women who may be at risk of violence or child marriage, and ensuring their access to reproductive health services, is particularly important (see Box 2.3).

Box 2.3: Early Marriage, Reproductive Health, and Gender Inequities

Early marriage among women contributes to gender inequities. In Timor-Leste, the median age at first marriage among 25–49-year-old women is 21.7 years, compared to 26.8 years for men aged 30-59. Twenty-four percent of married women were married between the ages of 15 to 19, compared to only 5 percent of men (based on the 2015 Census figures). Girls are often expected to leave school to work or to assist with household chores upon marriage, increasing the barriers to achieving their full potential.

Though fertility rates are declining, reproductive health services are still lacking, which may limit gains for women's empowerment. Only 23 percent of young women and 20 percent of young men have received information on reproductive health and just 24 percent of married women aged 15-49 use modern contraceptives for family planning.[a] Overall, less than half of women in Timor-Leste reported that their family planning needs were met by modern methods.[b] This low level of contraceptive use contributes to the high birth rate and increases the risk of sexually transmitted infections for both men and women. Given that women with fewer children are more likely to have increased access to education and labor market opportunities, improving reproductive health service delivery and empowerment to utilize modern contraception are key to improving human capital outcomes. Moreover, there are reports that government clinics lack the capacity and understanding to dispense some contraceptives properly, and that contraceptive stocks may be unavailable.[c] Economic, cultural, and religious considerations, as well as distance (in rural areas) to health clinics limit access to reproductive services, which requires a push for their more equitable availability across the country. Furthermore, health care services

are not readily available for complications associated with abortion due to the criminalization of abortion, aside from cases to protect the life of the mother.

Despite the Government's commitment to gender equality, data from 2010 suggests that the prevalence of domestic violence, which is the most common form of gender-based violence (GBV), is still high. In 2010, 38 percent of women aged 15 to 49 in Timor-Leste reported that they had experienced physical violence, and 75 percent of married women reported that violence had come from a partner. These cases are often mediated based on customary norms that may harm the victim and are not aligned with national and international laws which have been adopted in national declarations.[e]

While the Government has put in place several national policies, strategies, and action plans to promote gender equality and remove barriers to the advancement of women, challenges remain in the implementation of these plans. Existing regulations provide for men and women's equal participation in economic, social, and cultural life, and prohibit all forms of discrimination. However, weak institutional capacity and existing social norms that reinforce rigid distinctions in gender roles and responsibilities pose challenges to implementation. Although there is some evidence of behavior change, Timorese society remains highly patriarchal and in rural areas, customary law and local leaders enjoy the privilege of male property rights, inheritance practices, and succession in traditional offices and local government positions.[f]

[a] Data drawn from the *Timor-Leste Demographic and Health Survey 2016*, which was published online in 2016 by the General Directorate of Statistics, Ministry of Finance of Timor-Leste and IFC. See https://www.dhsprogram.com/publications/publication-fr329-dhs-final-reports.cfm

[b] See Government of Timor-Leste's 2019 *Report on the Implementation of the Sustainable Development Goals: From Ashes to Reconciliation, Reconstruction and Sustainable Development*, available at https://sustainabledevelopment.un.org/content/documents/23417TimorLeste_VNR_2019_FINAL.pdf

[c] US Department of State. *2016. Country Reports on Human Rights Practices: Timor-Leste*. https://www.state.gov/reports/2016-country-reports-on-human-rights-practices/timor-leste/

[d] See United Nations Reproductive Health Agency (UNFPA)'s "Gender-based violence" webpage, available at https://timor-leste.unfpa.org/en/topics/gender-based-violence-15

[e] See Asian Development Bank's "Timor-Leste: Country Gender Assessment" from 2014, available at https://www.adb.org/documents/timor-leste-country-gender-assessment

[f] See Centre of Studies for Peace and Development (CEPAD)'s *Women's Access to Land and Property Rights in the Plural Justice System of Timor-Leste,* 2014, available at https://asiapacific.unwomen.org/en/digital-library/publications/2015/1/tl-women-s-access-to-land-and-property. Also see Niner and Loney (2019) *The Women's Movement in Timor-Leste and Potential for Social Change* Politics & Gender, available at https://doi.org/10.1017/S1743923X19000230

2.3.2. Health

Reproductive health services for youths and adolescents are weak in Timor-Leste. Unmarried girls and women under 20 are sometimes denied reproductive health services and service providers may require a husband's permission before providing reproductive counselling and contraceptives (US Department of State 2016). Information on reproductive health services is also limited in Timor-Leste. The limited available evidence suggests that only 19 percent of sexually active unmarried women meet their needs for contraception, and that adolescent contraceptive use is "virtually nonexistent" (Ombudsman, or Office of the Provedor for Human Rights and Justice 2017).

2.3.3. Education

Learning outcomes in Timor-Leste remain poor. In 2017, more than 70 percent of grade 1 students scored a *zero* on the Early Grade Reading Assessment (EGRA). While EGRA results show improvements between 2009 and 2017, the continued very low performance of students in text reading, fluency, and comprehension is worrisome (see Table 2.4). Poor school infrastructure, and teaching and learning conditions contribute to these low student learning outcomes, which set children on a suboptimal path toward human capital accumulation. Moreover, aggregated test results in 2018 indicated that less than half of students had learned 50 percent of the required material covered in the nine basic education grades. Poor learning outcomes mean that the "quality-adjusted" educational attainment is only 6.3 years, despite an average of 10.6 years of schooling (World Bank 2020a).

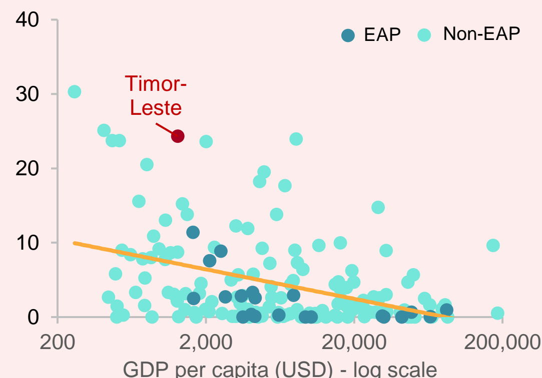
Early grade repetition is high in Timor-Leste, raising concerns about the overall efficiency of the country's education system. Grade repetition is both a cause and consequence of low-quality education and across the world is mostly found among students from disadvantaged backgrounds. In Timor-Leste, the repetition rate in grade 1 dropped from 33 percent in 2010 to 24 percent in 2017. Despite this decrease, the country's repetition rates are exceptionally high given the country's level of development, and not surprisingly track social inequalities. In fact, this is the third-highest rate observed among 151 countries with available data (see Figure 2.7). Grade repetition results in a wide student age range in any given class. Thus, it entails major constraints to the education system's efficiency, imposes high financial costs to the Government, and reduces the efficacy of teaching. In effect, the Government spends scarce public resources on students who are not progressing within the system as planned.

Table 2.4: Percent of Students in Grade 1 who scored Zero on the EGRA Tasks, 2009 and 2017

Skill being assessed	Percentage of zero scores on each task in the EGRA Assessment	
	EGRA 2009	EGRA 2017
Letters	23.23	15.48
Words	67.10	54.70
Non-words	70.97	67.90
Text reading	72.26	72.37
Fluency	72.26	71.11
Comprehension	83.87	74.20

Source: WB World Development Indicators database

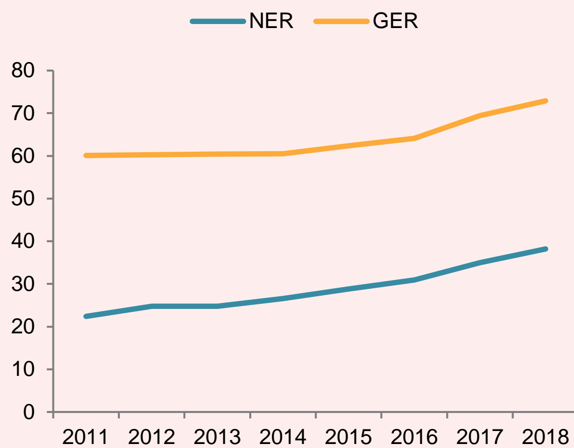
Figure 2.7: Repetition Rate, Grade 1 (percent)



Source: Using EGRA for an Early Evaluation of Two Innovations in Basic Education in Timor-Leste, World Bank, MEYS Australian Government

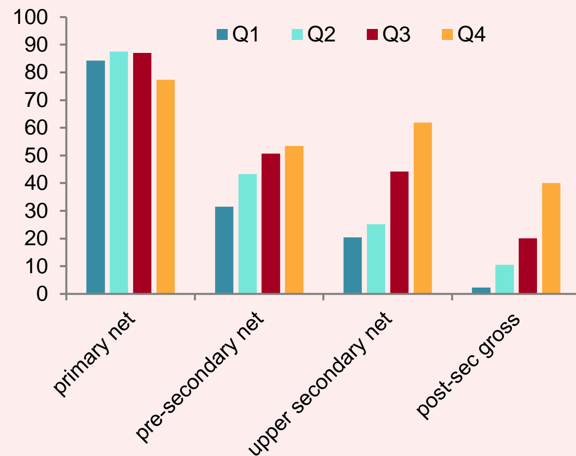
Suboptimal enrollment contributed to poor learning outcomes. In 2018, at 38 percent as compared to 73 percent, the net enrollment rate (NER, which measures the enrollment of the official age group for a given level of education expressed as a percentage of the corresponding population) in secondary education was substantially lower than the gross enrollment rate (GER, which measures enrollment regardless of age). This highlights a significant student over-age issue (a consequence of grade repetition). This issue remains even though the net enrollment rate has been on the rise over the past decade (see Figure 2.8). Additionally, although overall enrollment in secondary and tertiary education has risen considerably, it is uneven across economic groups and localities. Specifically, enrollment rates among students from households in the lowest income quartile drop most significantly for higher levels of schooling (see Figure 2.9).

Figure 2.8: Secondary School Net Enrollment Rate (NER) and Gross Enrollment Rate (GER) in Timor-Leste (percent)



Source: Timor-Leste EMIS

Figure 2.9: Enrollment Rates (percent) by Level, Stratified by Income



Source: Calculated from Timor-Leste Survey of Living Standards (SLS), 2014

Note: Household expenditure per capita quartiles

School dropout rates are also high, with 80 percent of children entering grade 1 at age 6 dropping out before finishing secondary school. The cumulative dropout rate to the last grade of primary education (grade 6) was 17 percent in 2017, which is close to the average for LMICs (16 percent) but still high. The total dropout rate for basic and secondary school combined was 4.6 percent in 2017, with a higher secondary school dropout rate of 5.7 percent (World Bank 2022a). Dropping out disproportionally affects students from low-income families, since school-related expenses—including uniforms, school supplies and transportation—can amount to a significant proportion of income for the poorest households. International evidence shows that age-grade distortion, repetition, demotivation (being overage or having no interest), illness, and opportunity costs (work) are key determinants of school dropouts (Adelman et al. 2018; Avitabile et al. 2019).

Nearly 18 percent of classes in basic education nationwide, which are attended by a third of all students at this level, are overcrowded. These 1,909 overcrowded classes – defined as having more than 40 students (see Table 2.5) – have an average class size of 52 students, indicating a shortage of classrooms in basic education schools. The share of overcrowded classes is particularly high in the municipality of Ermera. As this is a municipality with a high poverty rate, this means that the overcrowding issue disproportionally affects disadvantaged students. Moreover, about 30 percent of primary

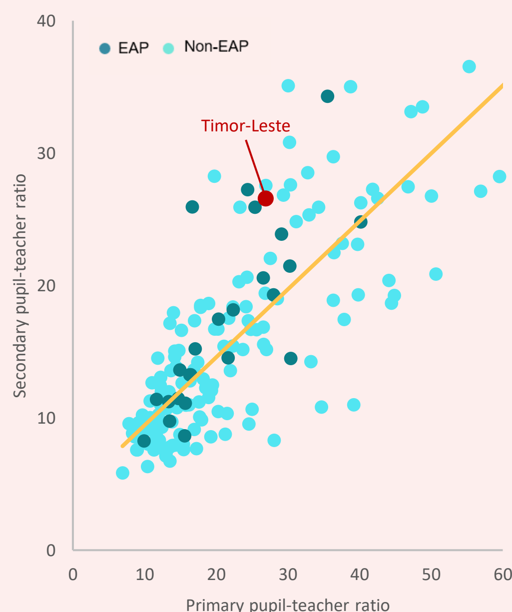
schools operate in double shifts, which means they are also open in the afternoon to help address the overcrowding issue. Student-teacher ratios are also high for all education levels, at around 27 for both primary (grades 1-6) and secondary (grades 7 to 12) levels (see Figure 2.10). Additionally, few schools provide programs for children with special needs.

Table 2.5: Distribution of Overcrowded Classrooms across Municipalities (Basic Education)

	Total classes	Number of overcrowded classes (>40)	Share of overcrowded classes (%)
Aileu	485	69	14.2
Ainaro	651	88	13.5
Baucau	1,351	117	8.7
Bobonaro	1,077	135	12.5
Cova Lima	733	65	8.9
Dili	1,503	604	40.2
Ermera	1,046	294	28.1
Lautem	714	85	11.9
Liquica	544	120	22.1
Manatuto	552	55	10.0
Manufahi	595	75	12.6
Oecussi	663	103	15.5
Viqueque	882	99	11.2
National	**10,796**	**1,909**	**17.7**

Source: EMIS 2021

Figure 2.10: Pupil-Teacher Ratio (Primary and Secondary Levels)



Source: EMIS 2021

Although the national equivalence program has enabled a significant increase in official teacher numbers, it has led to a lower average teaching competency. The national equivalence program, jointly implemented by the National University of Timor-Leste (UNTL) and the National Institute for the Training of Teachers and Education Professionals (INFORDEPE), has provided a "Bacharelato" certification to thousands of teachers who completed three years of relevant study following graduation from senior secondary school. Many of these were volunteer teachers, who had lower levels of education and experience than existing contract teachers. Most current teachers entered the profession through the equivalence program, which provides limited pedagogic training, producing less-qualified teachers and lowering the average teaching competency. A teacher competency assessment indicates that nearly 80 percent of teachers are only at an elementary level (World Bank

2021b; World Bank 2022a). A related critical bottleneck is the lack of coordinated teacher training programs.

There is a sizeable fraction of the young population that is not engaged in education, employment, or training (NEET). NEET youth comprise individuals who are unemployed and may have never attended school, attended school but dropped out early, or completed school but remain without a job. NEET youth are more likely to be marginalized and experience poor economic outcomes and social exclusion. In Timor-Leste, the 2015 Census indicates that approximately 20 percent of youth aged 15-24 are not in school and not working. While the percentage is lower for those aged 15-19 (14 percent), 28 percent of those aged 20-24 are NEET youth. While the percent of NEET population among those aged 15-19 is similar for males and females (13 percent versus 15 percent), 38 percent of women aged 20-24 are NEET against 21 percent for men. The overall share of youth that are NEET has not declined overall since 2010, yet has in fact increased for males, but decreased for females (UNFPA 2018). Geographic disparities range from 15 percent of youths that are NEET in the exclave of Oecussi, to 26 percent in centrally located Liquica. This reflects relatively less inequities between municipalities than seen in health indicators, for example, and indicates that this is a widespread challenge, not isolated to only certain geographies.

2.3.4. Social Protection

Social protection services have helped facilitate school attendance and the utilization of health services among children but have not achieved significant poverty impacts. In addition to targeting families with young children, BdM also aims to help promote attendance of nine years of compulsory basic education by conditioning the cash transfer on school enrollment and attendance for children aged 5-17. However, inadequate compliance monitoring coupled with disparities in access to health and education facilities have prevented the program from reaching its full education and nutrition impact for children and adolescents (World Bank 2015).

The low impact of BdM on education and health outcomes is further exacerbated by considerable gaps in coverage and adequacy. The program coverage rate of the bottom quintile of the population is 19 percent, leaving behind the vast majority of the poorest population (World Bank 2020b). The amount of benefit relative to the average total household expenditure is arguably too low to alter household consumption patterns such that more nutritious food items are included in the family diet (World Bank 2020b). Due to the lack of an effective targeting system, about 47 percent of the beneficiaries were

estimated to be non-poor (Gunther et al. 2016). As a result, the program has achieved an almost negligible reduction in the national poverty rate.

Timor-Leste's School Feeding Program was designed to encourage school participation while addressing malnutrition, but the benefits of the program miss the first critical two years of life and are limited for children aged 3-15 years. The program targets children with the goal of increasing school access and participation, as well as promoting increased learning capacity through the provision of necessary micronutrients. Despite good coverage among elementary school pupils, there are large gaps for children at preschool age because of relatively low preschool enrollment. The nutritional value of the distributed food is also unverified. In 2018, there were 329,403 students benefiting from the program (9,820 at preschool and 319,583 at basic education) compared to 311,390 students in 2012 (World Bank 2022b). The Government has recently increased the benefit level from US$0.25 per child to US$0.42. This 68 percent increase puts Timor-Leste at par with peer LMICs.

2.4. Working Age

2.4.1. Overview

Working age is the period of citizens' lives when the greatest economic benefits are reaped from human capital investment in the earlier stages of the life course. As investments in the human capital of the next generation will only pay off in the longer term, while the country seeks to improve its human capital outcomes now, there is a strong need for human capital investments for the current working age population.

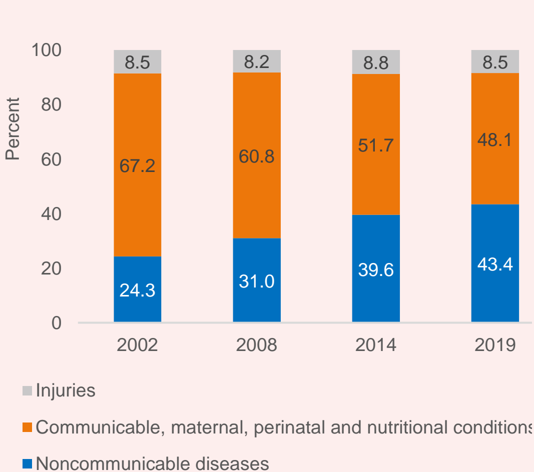
2.4.2 Health

Adult mortality has declined drastically over the past several decades. Adult mortality rates stand at 205 per 1,000 male adults, and 157 per 1,000 female adults in 2021, yet is still higher than the regional average.[24] This is in line with global trends.

The incidence of NCDs is on the rise, indicating limited availability and utilization of PHC services, particularly in adulthood. The share of NCDs in the overall burden of disease has increased from 24 percent in 2002 to 43 percent in 2019 (see Figure 2.11). Stroke, heart and lung disease, and diabetes are now among the top 10 diseases in the country and

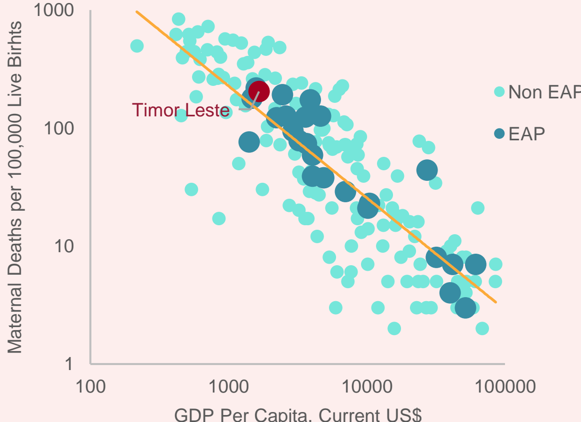
have been contributing increasingly to illness, disability, and death. Metabolic risks, including high blood pressure, high blood glucose, high cholesterol, and kidney dysfunction are among the top 10 risks for DALYs lost. In turn, tobacco exposure, alcohol use, and poor diet are among the top-10 behavioral risks that contribute to the increasing NCD burden. Only 2.7 percent of the population with raised blood pressure is currently on medication to manage it (WHO 2017). Among women aged 30-49, only 1.1 percent have ever had a screening test for cervical cancer. These low rates indicate subpar availability and utilization of primary and specialist health care services. With the growing incidence of untreated NCDs, the cost to the country in terms of loss of productive years and amenable mortality will only increase. The financial impact on households will also increase in line with the incidence and severity of NCDs. The establishment of a strengthened health referral system weaving together a performant primary, secondary, and tertiary care network – with facilities and primary and specialist services equitably provided across Timor-Leste – is therefore of the utmost urgency.

Figure 2.11: Burden of Diseases (DALY) by Cause in Timor-Leste (percent), 2002-2019



Source: World Health Organization (WHO)/Global Health Observatory (GHO): Global health estimates: Leading causes of DALYs

Figure 2.12: Maternal Mortality in Timor-Leste, 2020



Source: World Bank World Development Indicators Database
Note: both x- and y-axes logged. Countries with MMR exceeding 1,000 per 100,000 live births, and countries with a GDP per capita exceeding US$100,000 have been omitted.

The maternal mortality ratio (MMR) declined from 685 per 100,000 live births in 2002 to 204 in 2020 but is still high.[25] Similar to improvements in neonatal mortality, the observed improvements may be driven by improved antenatal care and skilled birth attendance, in addition to the strengthening of health care workforce. In-facility births have more than doubled, rising from 22 percent in 2009-2010 to 49 percent in 2016. Births

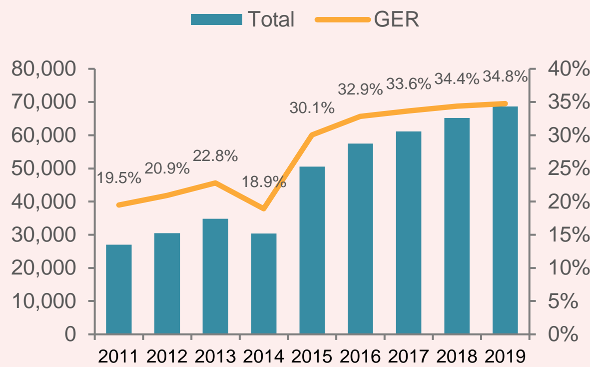
attended by a skilled provider (doctor, nurse, midwife, or assistant nurse) have risen from just under 60 percent to 87 percent in urban areas and from 21 percent to 45 percent in rural areas, within the same period.[26] Slightly more than 85 percent of pregnant females receive antenatal care from a medical professional and 35 percent follow up with postpartum care during the first two days after birth. However, despite these improvements, the MMR in Timor-Leste remains high, and requires an increase in both primary and specialist care availability throughout the referral system, especially for complex deliveries (see Figure 2.12). High MMR is correlated with high infectious disease prevalence, limited access to and/or poor medical care, and high fertility rates, among other factors (Girum and Wasie 2017). In Timor-Leste, fertility rates declined from 6.0 children to 3.1 between 2000 and 2021, but this rate also remains high (World Bank 2021a).

2.4.3 Education

Though adult education and literacy rates have improved, they are still low compared to other LMICs. The share of the population over age 25 without any education declined from 49 percent in 2004 to 26 percent in 2015 (UNFPA 2018). However, this still means that more than a quarter of the adult working age population lacks any formal education. Literacy levels have also improved over the last decade, but only 68 percent of adults are literate compared to the average of 76 percent in countries at a similar development level.[27]

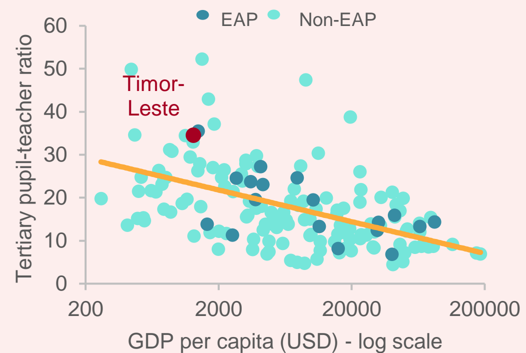
Although tertiary education enrollment rates are on the rise, the quality of tertiary education service delivery is a concern. The higher education gross enrollment rate was around 35 percent in 2019. Enrollment in higher education institutions has increased over the past 10 years (see Figure 2.13), such that in 2019, there were about 68,600 students enrolled in 14 accredited higher education institutions. Enrollment increased both in public and private higher education institutions, with private universities/institutions accounting for some 80 percent of tertiary students. For instance, the number of students enrolled in UNTL increased from 1,500 to 3,500 between 2015 and 2017, and then to 8,600 in 2019.[28] This represents a remarkable increase of more than 470 percent in only four years. The quality of tertiary education service delivery is a primary concern especially with respect to private universities/institutions. Between 2009 and 2019, the student-teacher ratio in tertiary education increased from 14:1 to nearly 35:1, among the highest in the world (see Figure 2.14). Quality assurance mechanisms are suboptimal: There is no accreditation of higher education institutions and their academic programs, while the National Qualification Framework is not compatible with international standards.

Figure 2.13: Gross Enrollment Rate in Tertiary Education and Counts of Students over Time



Source: ESA (2016) and NESP (2020-2024)

Figure 2.14: Pupil-Teacher Ratio, Tertiary (percent)



Source: UNESCO Institute for Statistics (2020)

2.4.4 Social Protection and Employment Support

To protect human capital during working age, Timor-Leste has put in place a social security system with contributory social insurance and non-contributory social benefits. The contributory social insurance aims to replace reduced or lost income in case of disability, death, maternity, and old age. Coverage is skewed towards those working in the formal public and private sector. The system also does not offer unemployment benefits which are critical in maintaining livelihoods during periods of unemployment. Meanwhile, the non-contributory social pension provides a cash transfer of US$50 per month for the disabled (World Bank 2021b). In 2019, the disability pension covered 14 percent of the bottom 20 percent expenditure group (World Bank 2020b). However, whether it is reaching those most in need is difficult to assess. Only applicants with permanent inability to work are considered eligible, while the Population Census provides data only on functional limitations, such as being unable or having difficulties in walking, seeing, hearing, or having an intellectual/mental condition. According to the 2019 Census data, the disability prevalence rate was 3.2 percent, which corresponds to 37,877 individuals. Using this disability prevalence rate as a yardstick, only around 21 percent of potentially eligible Timorese were covered.

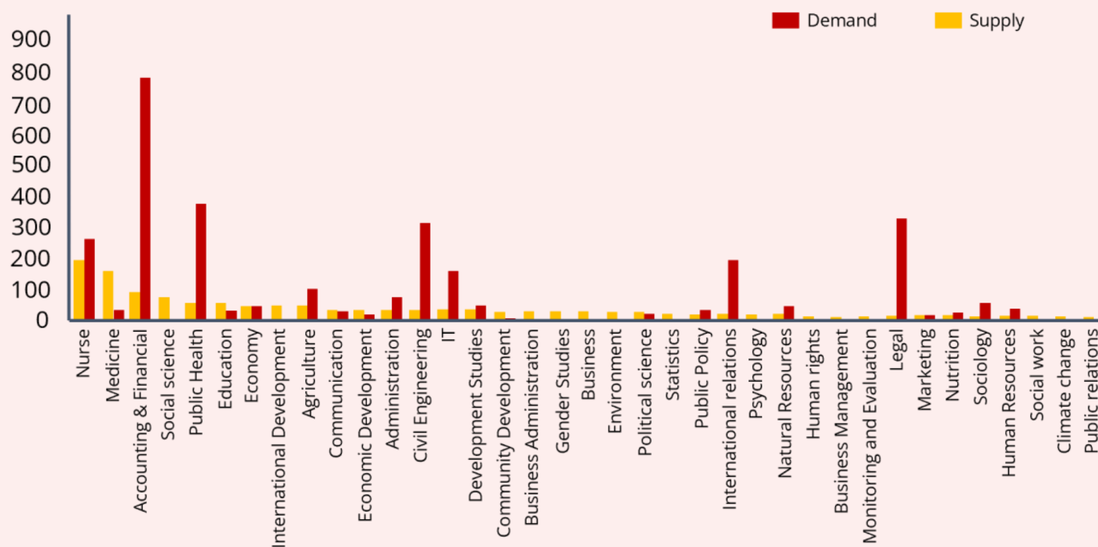
Timor-Leste's skills and employment policies are not yet effective in improving labor market outcomes. Unemployment in Timor-Leste stood at 14 percent in COVID-19 year 2021,[29] with the sub-optimal training and vocational system as a key driver. The latest available data shows that labor force participation rose only slightly from 54.7 percent to 56.1 percent between 2010 and 2015 and this increase also masks important subnational and educational status disparities, with Dili having the lowest share of the working age population employed (40.6 percent) and Oecussi having the highest (66.6 percent). Unemployment disproportionately affects the more highly educated: 48 percent of those who are unemployed have a secondary school degree or higher (UNFPA 2018).[30] Moreover,

the Labor Force Survey (LFS) 2013 showed that around 72 percent of those in employment worked in the informal sector, 90 percent of whom were aged 15-24. High informality also translates into low coverage for social security schemes, making most workers in Timor-Leste vulnerable to employment-related shocks.

Low private sector labor demand contributes to high unemployment. The Labour Market Outlook 2021 report from the Secretary of State for Training and Employment (SEFOPE) indicates that formal public sector labor demand is approximately five times that of formal private sector demand, with vacancies within the past four years seeking largely diploma holders and bachelor's degree candidates. Meanwhile, labor supply (5,044 graduates) is double that of formal labor demand (2,275 vacancies) for tertiary education graduates. To overcome this challenge, Timor-Leste needs a more diversified economy with a dynamic private sector. A jobs strategy to foster such an economy is urgently needed.

Timor-Leste's growth potential is weighed down by skills gaps and mismatches. While private sector employers frequently complain of a lack of skills as an impediment to doing business, around 12.2 percent of persons employed in 2016 were in occupations with skill requirements below their formal educational attainment. This represented an increase of 7.4 percentage points from 2010. 2021 SEFOPE data also indicate a significant mismatch of demand and supply in specific tertiary skills (see figure 2.15). The skill mismatch of the labor force adversely affects the return on investment in education and training. It also emphasizes the importance of a more robust workforce development system that improves the alignment between labor market opportunities and the skills of the population.

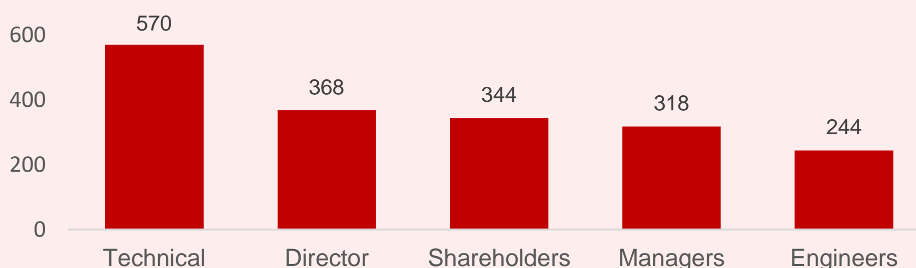
Figure 2.15: Matching of Demand and Supply for Tertiary Skills



Source: Adapted from SEFOPE's "Labour Market Outlook 2021 Edition 11" report

Foreign employment helps to fill important skill gaps. Foreign workers in 2021 (3,298), consisting primarily of workers from China and Indonesia, filled mostly technical (570) and engineering positions (244) as well as manager-level (318) and director-level positions (368) (see Figure 2.16). While this has helped to fill important skill gaps in the current workforce, in the medium term it will be important to develop qualified and professional trainers and curricula relevant to industry and student needs (including with regard to soft skills) to develop the capacity of the Timorese population to occupy more of these positions.

Figure 2.16: Top 5 Occupations by Foreign Workers



Source: Adapted from SEFOPE's "Labour Market Outlook 2021 Edition 11" report

2.5 Aging Population

2.5.1 Overview

Human capital among the oldest members of the population manifests in the form of healthy aging, financial protection through social insurance and pensions, and continuous learning with opportunities for gainful employment. Social protection and pension service delivery are also particularly important because they allow aging members of the population to provide for themselves and potentially foster the human capital development of their family members.

Only 5.6 percent of the country's population is over the age of 65, which is low compared to regional counterparts (for example, Thailand 15.2 percent, Vietnam 9.1 percent, Indonesia 6.9 percent).[31] Older members of the population maintain relatively high rates of labor force participation,[32] although this may reflect financial need in the context of limitations in Timor-Leste's pension system. In 2014, the poverty rate in Timor-Leste was 41.8 percent, with the highest incidence observed among those 15 years and younger. Among the elderly (61 and above) the rate was 26.8 percent (males/29.3 percent, females/24.6 percent), accounting for 5.3 percent of total poverty.

The elderly face a higher demand for health care and protection against financial shocks that can be triggered by episodes of poor health. Timor-Leste provides health services to its population at no cost, which serves as a financial protection system against both expected and unexpected costs of care. However, supply side-readiness challenges across all levels of the health system, combined with non-availability or access cost (including travel) for specialist services (the need for which is often accentuated at an older age) may lead to access barriers (Price et al. 2016). This is particularly concerning in the challenging geographical context of Timor-Leste, where reaching secondary and tertiary facilities might require considerable travel. Moreover, the changing disease pattern that accompanies an aging population warrants adequate investments in prevention and regular treatment for noncommunicable diseases at an early stage.[33]

2.5.2 Social Protection

Timor-Leste's contributory pension scheme[34] is expected to provide income protection during old age but covers only 34 percent of the labor force and is fiscally unsustainable. The scheme provides a generous replacement rate of up to 100 percent of

final wages. To maintain fiscal sustainability, the current contribution rate would have to be increased to 6.7 percent of payroll immediately followed by significant increase to 22.9 percent in 2040 and then 31 percent 2100 (World Bank 2022b). Moreover, as the current scheme covers only 34 percent of the labor force, mainly civil servants and formal private sector employees (World Bank 2022b), it would be sensible to extend a reformed, more fiscally sustainable contributory scheme to also cover informal employment. As informal workers often face challenges in paying regular contributions due to unstable work arrangements and lack of regular earnings, proactive approaches, compelling behavioral change campaigns and other innovative ways to increase voluntary uptake would need to be considered. Cape Verde, for instance, succeeded in increasing social security coverage among independent workers from 0 to 9 percent in one year, which included agricultural workers, street vendors, traders, and professionals (Durán-Valverde et al. 2013).

The non-contributory social pension scheme for the elderly aims to ensure fulfillment of a minimum level of basic needs and is universal in nature, covering all Timorese citizens based on prevailing eligibility rules. The scheme consists of the allowance for the elderly in the form of an old age social pension that aims to guarantee a minimum income for citizens aged 60 years or older who are not receiving veterans' benefits or covered by the contributory social insurance scheme. A cash transfer of US$50 per month is provided to eligible senior citizens. Currently, the elderly social pension delivers benefits to 89,804 individuals, which corresponds to 93 percent of the target population (World Bank 2022b).

Service delivery for the aging remains limited. Key services for aging populations such as for palliative health care remain limited despite national strategic plans indicating its provision by the national hospital. This leaves households to bear the burden of caring for sick and aging family members. At the time of writing, initiatives to support the elderly who wish to remain active in the labor market were limited if not entirely nonexistent.

Notes

1. Region' in this document refers not to a geographical entity per se but to the formal World Bank Group institutional aggregation of EAP member states.
2. This is based on a UNICEF, WHO, and World Bank joint child malnutrition estimates. The aggregation is based on UNICEF, WHO, and the World Bank's harmonized dataset (which was adjusted and made comparable) and methodology. See https://data.worldbank.org/indicator/SH.STA.STNT.ZS?locations=TL
3. Learning-adjusted years of school combines information on the quantity and quality of education based on prevailing patterns of enrollment rates across grades and harmonized test scores. See Patrinos and Angrist (2018)'s "Global Data Set on Education Quality (1965 – 2015)" for more information on the methodology, available at https://openknowledge.worldbank.org/handle/10986/29281
4. Their importance is further elaborated in the UNICEF-IRC's newsletter *The First 1,000 days of Life: The Brain's Window of Opportunity.* See https://www.unicef-irc.org/article/958-the-first-1000-days-of-life-the-brains-window-of-opportunity.html
5. Data from the World Bank's World Development Indicators Database. Estimates developed by the UN Inter-agency Group for Child Mortality Estimation (UNICEF, WHO, World Bank, UN DESA Population Division). See https://data.worldbank.org/indicator/SH.DYN.NMRT?locations=TL
6. This is listed in the Institute for Health Metrics and Evaluation's "GBD 2015 Cause List." See https://www.healthdata.org/sites/default/files/files/Projects/GBD/GBDcause_list.pdf
7. Data drawn from the *Timor-Leste Demographic and Health Survey 2016*, which was published online in 2016 by the General Directorate of Statistics, Ministry of Finance of Timor-Leste and IFC. See https://www.dhsprogram.com/publications/publication-fr329-dhs-final-reports.cfm
8. Data from the World Bank's World Development Indicators Database. Estimates developed by the UN Inter-agency Group for Child Mortality Estimation (UNICEF, WHO, World Bank, UN DESA Population Division). See https://data.worldbank.org/indicator/SH.DYN.MORT?locations=TL
9. Data drawn from the *Timor-Leste Demographic and Health Survey 2016*, which was published online in 2016 by the General Directorate of Statistics, Ministry of Finance of Timor-Leste and IFC. See https://www.dhsprogram.com/publications/publication-fr329-dhs-final-reports.cfm
10. See the *Timor-Leste Food and Nutrition Survey 2020* at https://www.unicef.org/timorleste/reports/timor-leste-food-and-nutrition-survey
11. From "2022 Global Hunger Index: Food Systems Transformation and Local Governance." *Global Hunger Index (GHI).* This is a peer-reviewed annual publication designed to comprehensively measure and track hunger at the global, regional, and country levels. See https://www.globalhungerindex.org/pdf/en/2022.pdf
12. See WHO for the definitions of minimum meal frequency, minimum dietary diversity, and minimum acceptable diet, available at: https://www.who.int/data/nutrition/nlis/info/infant-

and-young-child-feeding#:~:text=The%20minimum%20daily%20meal%20frequency,children%20aged%206%2D23%20months

13. From the *Timor-Leste Food and Nutrition Survey 2020*. See https://www.unicef.org/timorleste/reports/timor-leste-food-and-nutrition-survey

14. See Ministry of Health of Timor-Leste's *Rapid Food Security Assessment 2020*, available at: Government of Timor-Leste. Rapid Food Security Assessment 2020: Full Report; 2020. https://oi-files-cng-prod.s3.amazonaws.com/asia.oxfam.org/s3fs-public/file_attachments/Rapid%20Food%20Security%20Assessment_Full%20Report_9%20Jun%202020_FINAL.PDF

15. Data drawn from the *Timor-Leste Demographic and Health Survey 2016*, which was published online in 2016 by the General Directorate of Statistics, Ministry of Finance of Timor-Leste and IFC. See https://www.dhsprogram.com/publications/publication-fr329-dhs-final-reports.cfm

16. From the *Timor-Leste Food and Nutrition Survey 2020*. See https://www.unicef.org/timorleste/reports/timor-leste-food-and-nutrition-survey

17. Data drawn from the *Timor-Leste Demographic and Health Survey 2016*, which was published online in 2016 by the General Directorate of Statistics, Ministry of Finance of Timor-Leste and IFC. See https://www.dhsprogram.com/publications/publication-fr329-dhs-final-reports.cfm

18. See Timor-Leste's Program of the Eight Constitutional Government, available at http://timor-leste.gov.tl/?p=19915&lang=en#prog2.1.1

19. See Timor-Leste's Education Sector Plan (ESP 2020-2024).

20. See Partnerships for Social Protection's document, *Investing in Timor-Leste's children through the Bolsa da Mae – Jerasaun Foun cash transfer program*, accessible at https://p4sp.org/documents/3/P4SP_Poster_Series_-_Timor_Leste.pdf?download=True

21. Similar interventions have been implemented in Indonesia's Cash Transfer Program, Philippines' Pantawid program, and in Brazil's Bolsa Familia. The behavioral change approach takes the form of family development sessions where families receive coaching on topics such as nutrition, parenting, and household financial management. Indonesia's Non-Cash Food Assistant program (BPNT) is also an example whereby beneficiaries can only use their BPNT card to purchase specified food items such as rice, eggs, tofu, and tempe in designated local kiosks.

22. The estimated costs of covering all children up to six years for the next eight years is around US$359 million or equivalent to 2.9 percent of 2021 non-oil GDP per year. Costing from Timor-Leste's CNAP-NFS 2023-2030, World Bank, 2022. This amount makes up 85 percent of the estimated total cost of CNAP NFS implementation.

23. Data from the World Bank's World Development Indicators Database. Estimates developed by the UN Inter-agency Group for Child Mortality Estimation (UNICEF, WHO, World Bank, UN DESA Population Division). See https://data.worldbank.org/indicator/SH.DYN.1014?locations=TL

24. Data from the World Bank's World Development Indicators Database, sourced from the 2022 Revision of the World Populations Prospects (United Nations Population Division) and the Human Mortality Database (Max Planck Institute for Demographic Research, University of

California, Berkeley, and the French Institute for Demographic Studies). See https://data.worldbank.org/

25. Data from the World Bank's World Development Indicators Database, sourced from the WHO, UNICEF, UNFPA, World Bank Group, and UNDESA/Population Division. See https://data.worldbank.org/indicator/SH.STA.MMRT?locations=TL
26. Data drawn from the *Timor-Leste Demographic and Health Survey 2016* and the *Timor-Leste Demographic and Health Survey 2009-10*, which were published online in 2016 and 2010, respectively by the General Directorate of Statistics, Ministry of Finance of Timor-Leste and IFC. See https://www.dhsprogram.com/publications/publication-fr329-dhs-final-reports.cfm and https://dhsprogram.com/publications/publication-fr235-dhs-final-reports.cfm
27. Data from World Bank's *World Development Indicators Database*, sourced from UNESCO Institute of Statistics. See https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=TL-Z4
28. Data from Timor-Leste's Ministry of Higher Education, Science, and Culture 2021.
29. Data from the International Labour Organisation Database (ILOSTAT database), as of June 2022. See https://ilostat.ilo.org/data/
30. See UNFPA's "Labor Force: Summary of the Thematic Report," available at https://timor-leste.unfpa.org/sites/default/files/pub-pdf/census_booklet_%20labour%20force.ver3_.0.pdf
31. Data from the Timor-Leste Population and Housing Census 2022, see https://inetl-ip.gov.tl/category/documents-publication/census-document-documents/document-census-population-documents/; and the World Bank's World Development Indicators Database (Population Ages 65 and Above (% of Total Population)— Indonesia, Thailand, and Vietnam Data). See https://data.worldbank.org/indicator/SP.POP.65UP.TO.ZS?locations=VN-ID-TH
32. See UNFPA's *Labor Force: Summary of the Thematic Report*, available at https://timor-leste.unfpa.org/sites/default/files/pub-pdf/census_booklet_%20labour%20force.ver3_.0.pdf
33. See Timor-Leste's Ministry of Health *National Strategy for Prevention and Control of Noncommunicable Diseases, Injuries, Disabilities and Care of the Elderly* and the *NCD Action Plan 2014-2018*, available at https://extranet.who.int/ncdccs/Data/TLS_B3_NCD%20Action%20Plan,%20Injuries,%20Disabilities,%20and%20Elderly%20Care%202014-2018.pdf

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3. Enabling Environment

Underlying Factors and Systems Influencing Human Capital Accumulation

Key Points

- The constraints to human development in Timor-Leste need to be urgently addressed to tackle the human capital crisis. The HCR identifies four cross-sectoral pillars that are foundational to create a more enabling environment for human capital accumulation in the country. These pillars are all encompassed within a natural environment that is prone to the severe impacts of climate change.
- Public expenditure on human capital in Timor-Leste is among the highest in the world. However, inefficiencies in inter- and intra-sectoral allocation of spending persist. This calls for a rapid and comprehensive restructuring of public expenditure by targeting the limited resources to those in need of support and introducing conditionalities to generate demand for essential public services.
- Large capacity gaps in Timor-Leste's post-conflict context have resulted in weak institutions, inefficiencies in public spending, and constrained human capital accumulation. This has led to a lack of evidence-based designs in the health, education, and social protection sectors and the absence of enforceable monitoring, evaluation, and accountability mechanisms.
- These barriers to human capital accumulation are exacerbated by poorly developed data systems. A data and knowledge-driven health, education, social protection, and labor agenda, rooted in interoperable and high-quality MIS, is critical to ensure that evidence drives policy, planning, and interventions. This includes the need to adopt and implement an inclusive identification system to unlock opportunities for digital service delivery.
- Intra- and inter-sectoral coordination between the Government and human capital stakeholders, including international development and civil society partners can be substantially improved, as fragmentation limits the impact of these stakeholders' efforts to tackle the human capital crisis.

3.1. Overview

Timor-Leste needs to address its constraints to human capital development if public expenditures are to lead to better human capital outcomes. This calls for the creation of an enabling environment with an efficient and high-quality public sector, and a diverse labor market offering opportunities for women and men of all ages. This chapter focuses on four cross-sectoral pillars of such enabling environment that need to underpin Timor-Leste's actions to address the human capital challenges described in the diagnostic presented in Chapter 2: (a) the efficient allocation of resources; (b) adequate institutional capacity and accountability; (c) data systems for information management; and, (d) stakeholder coordination. Complementing the cross-sectoral pillars, the Appendix to this HCR offers an in-depth analysis of the sectoral context in health, education, and social protection.

Beyond the institutional, regulatory, and data environment discussed in this chapter, attention should be focused on preventing, mitigating, and adapting to the impacts of climate change, including in relation to service delivery (Box 3.1). Timor-Leste is set to be severely impacted by extreme events and long-term climatic changes, entailing loss of life and injury due to natural disasters and changing disease patterns. The health sector is particularly sensitive to the consequences of climate change, as victims of climate change will require care, and health facilities will face challenges to continue operations while facing surges in demand during and in the wake of emergency situations.

Box 3.1: Climate Change Impacts on Human Capital

Timor-Leste faces high levels of climate risk, including climate change-induced or worsened natural disasters, especially flooding, climate-sensitive diseases, and extreme heat. The intensity of these hazards is expected to increase further as changes in climate intensify. Climate change threatens the country's human capital development with increasingly frequent and severe weather events endangering food security, public health, and economic livelihoods. Food security challenges, amidst a very high level of undernutrition, can create extremely adverse short-term consequences, and impact the long-term health outcomes and economic trajectory of the country.[a]

Climate change threatens health, education, and social protection outcomes. Several climate-sensitive communicable diseases are prevalent in the country, including dengue, Japanese encephalitis, malaria, and typhus. Other health issues such as heat stroke and heat exhaustion can be induced by prolonged exposure to extreme heat, as well as exacerbate preexisting chronic conditions. Climate change-related health risks include increased flooding which harms water quality, elevating the risk of diarrhea, typhoid, and cholera.[a] Climate change also increases the likelihood and severity of shocks that affect households' well-being due to

sudden job and income losses, necessitating reinforced risk management strategies including more adaptive social protection programs and updated curricula to increase awareness among students and teachers.

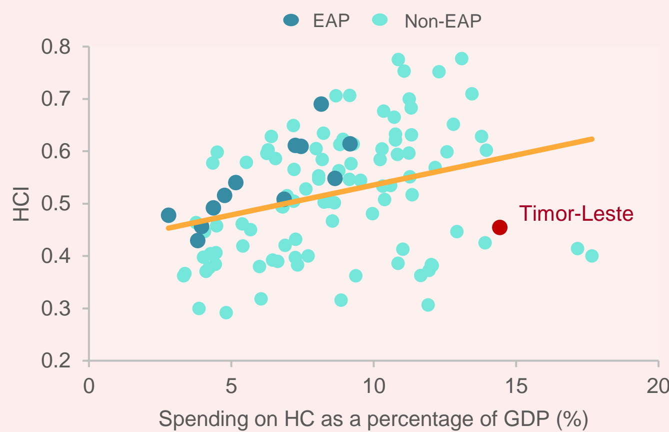
As economic and disaster-induced shocks become more frequent, coupled with reduced fiscal space in the aftermath of the COVID-19 pandemic, extraordinary efforts will be necessary to protect human capital. The double shock of massive floods and an unprecedented wave of COVID-19 in mid-2021 overwhelmed the Government's response mechanisms. In the face of possible future crises, this warrants significantly improved preparedness measures. Proactive policies will need to ensure that previous achievements are restored and sustained, and the country's human capital accumulation improves steadily during the recovery period. Synergistic investments across the education, nutrition, health, and social protection sectors can play a transformational role in improving Timor-Leste's preparedness, resilience and future response to such disasters and pandemics. For instance, education can play a key role in mitigating the impacts of climate change on Timor-Leste by changing the behavior of students, as well as preparing them for working in the green economy.

[a] World Bank and Asian Development Bank (ADB). 2021. *Timor-Leste Country Climate Profile*. Washington, DC: World Bank. https://climateknowledgeportal.worldbank.org/sites/default/files/country-profiles/15971-WB_Timor-Leste%20Country%20Profile-WEB.pdf

3.2. Public Expenditure Resource Allocation

Timor-Leste's public spending on human capital is among the highest in the world. The country's public expenditure on health (3.44 percent of GDP and 5.45 percent in COVID-19 year 2020) and education (4.1 percent of GDP) is roughly as expected given the country's level of development[1] while social protection spending (7.0 percent of GDP) is among the highest in the world. Thus, total Government expenditure on human capital is 14.5 percent of GDP. This the third highest among 115 countries for which comparable data exist, behind only Lesotho and Botswana (see Figure 3.1).

Figure 3.1: Relationship between HCI and Government Spending on Human Capital as a Percentage of GDP (percent)



Source: World Bank HCI Database 2020

Neither these expenditures nor the economic growth underpinning a GDP per capita rise from US$866 in 2001 to US$1,458 in 2021, have directly translated into significantly improved human capital outcomes (World Bank 2020). The ineffective resource allocation on human development is thus at the root of the human capital crisis Timor-Leste currently faces. A number of compounding factors drive this lack of a dose-response relationship between expenditure and improved development outcomes. Firstly, there are significant distortions in intra-sectoral allocations. The high spending on social protection for veterans, for instance, has significant opportunity cost. Next, a growing number of unequally distributed public sector staff receive comparatively high wages and salaries, particularly in health and education. This has significantly raised the proportion of wages among public expenditure on human capital. This has, however, not been linked to performance improvements, and comes at the expense of other critical inputs, including health goods and services, education infrastructure, and targeted social support for the poor.

In addition to these structural challenges, the available resources to invest in human capital accumulation, while substantial now, are quickly running out – exemplified by the rapid depletion of the Petroleum Fund and the demographic transition. Moreover, the economic downturn during and constrained recovery following the COVID-19 pandemic continues to put further fiscal pressure on government sectors that support human capital accumulation. The considerable reduction in available public funds thus warrants an even more efficient and sustained resource allocation toward human capital as a priority to ensure that Timor-Leste can build back better and achieves its development goals.

It is important for Timor-Leste to first spend better on human capital before considering spending more. There is a pressing need to increase the share of spending for effective pro-poor interventions while solidifying program implementation and delivery systems. As outlined in Chapter 2, there is ample potential for programs to directly support the accumulation and protection of human capital through health, nutrition, education, and social protection interventions throughout the life course.

3.3. Building Institutional Capacity and Accountability

While the long process of strengthening institutions in Timor-Leste has been underway since its independence, the legacy of systemic frailty in the country's post-conflict context deepens inefficiencies and hampers human capital accumulation. The long-term impacts of weak institutional frameworks are inextricably intertwined with Timor-Leste's poor human capital outcomes. Investing in human capital is therefore not only crucial to enhancing economic growth. It also contributes to strengthening people's trust in institutions. In the post-conflict context of Timor-Leste, increased trust in stronger public institutions is a particularly valuable asset to mitigate fragility (World Bank 2022), as an inclusive compact between state and citizens is only just emerging. Enhanced institutional capacity and trust will also be much needed in light of known and emerging risks, such as pandemics, the steep rise in food and energy costs, and climate change, that may slow down or undo development progress.

As a legacy of fragility, Timor-Leste's public sector still suffers from significant capacity gaps. This results in limited and inadequate physical and digital infrastructure, weak management structures, and a limited ability to improve service quality and outreach. As the support for human capital development and the provision of essential public services has been shifting from external organizations to the Government, the changing interplay of relatively fragmented and uncoordinated stakeholders, policies, and regulatory frameworks causes significant inefficiencies and scattered decision-making, and risks eroding public trust.

The institutional fragmentation caused by Timor-Leste's decentralization process should be carefully considered. Since 2017, municipalities have received public transfers as well as funds through several core line ministries. The limited capacity of institutions at the subnational level to deliver essential public services and the high coordination costs raise questions about the institutional readiness and scope of this decentralization. The World Bank's Public Expenditure Review for Timor-Leste (2021) points out that there is only limited use of evidence in the preparation and allocation of subnational budgets (World Bank 2021). This leads to further allocative inefficiencies in public spending, compounded by delayed budget approvals and disbursements and procurement bottlenecks due to severe gaps in local institutional capacity. There is thus an urgent need for strengthened public financial

management and broader institutional capacity building, not only at the national level, but also at the municipal level.

Improved institutional capacity is also tied to improved responsiveness and accountability. Interventions aiming to enhance human capital accumulation need to be underpinned by accountability mechanisms at the highest level of government (World Bank 2021). A number of sectoral action plans, for instance CNAP-NFS in the area of stunting reduction, set ambitious – and at times perhaps too ambitious – targets, yet lack annual detailed activity plans and targets. They also lack a reporting or accounting mechanisms to the Prime Minister or other high-level officials on results. This is worsened by the lack of a strong monitoring and evaluation framework, prohibiting tracking progress toward development outcomes.

It is crucial to establish enforceable accountability mechanisms based on performance vis-à-vis sectoral objectives and outcomes. These accountability mechanisms should be rooted in a clear set of rules and regulations, including on financing. They should also strike a balance between control and flexibility over spending decisions that helps to increase both the autonomy and accountability of spending units at the national and subnational level. Finally, data-driven evidence has the potential to be leveraged to engage with and coordinate multiple stakeholders, but this requires improved transparency around decisions affecting the use of public resources.

3.4. Data and Management Information Systems

Timor-Leste lacks integrated, interoperable digital data systems, hampering the creation of the evidence base to design, monitor and evaluate human capital programs. While there are several operational MIS in Timor-Leste, these are often isolated, and access is often limited. Metadata must be more transparent, and access must be available across multiple platforms in a regulated way, allowing stakeholders to search and discover data to identify and fill missing gaps, negotiate new interventions on emerging needs, and reduce the risk of duplication. Timor-Leste also lacks geospatial platforms, which could provide users with visual geographic information system mapping. Geospatial platforms will make it possible to understand the geographic and environmental conditions for coherent and informed policy decisions and actions.

Weak management systems for human capital service delivery prevent effective program implementation. Management of resources such as money, human resources, and supplies tends to be weak in the absence of strong reporting and accountability mechanisms. Budget allocations rely on an incremental approach, which contributes to the perpetuation of inequities in human capital outcomes across municipalities, as documented

in Chapter 2. Delayed disbursements from the central Government are common, and municipalities and municipal departments like the health department regularly do not receive funds until the second quarter of the fiscal year. Financial reporting is also onerous and has been found to hinder rather than incentivize management autonomy.

Across sectors, management information systems are operational, but not integrated with other systems and sources of information. For instance, an Education Management Information System (EMIS) has been stablished with the purpose of being the primary tool for collecting relevant educational data, monitor performance, and inform decisions and policies. EMIS has benefited from significant donor support over the years, but the lack of integration with other data sources limits its potential as a decision-making tool. Along the same vein, social protection programs do not share administrative tools, and there is little convergence of programs. MSSI, for instance, has developed an MIS for core social assistance programs, which has only been partially implemented. Other cash transfer programs, including the veterans' pensions, also maintain their own MIS. Accordingly, the social protection identification and enrollment system remains fragmented. This hinders policy makers' capacity to discern whether programs converge or overlap and reduces the system's overall efficiency.

The lack of a trusted and inclusive ID system undermines inclusion, digitalization, and service delivery. Birth registration stands at 60 percent for children under 5, and despite the recent digitization of the civil registry system, the population continues to face barriers to obtain a birth certificate, specifically in hard-to-reach areas. With nearly the entire eligible voting population enrolled, the voter ID system has the highest coverage in the country. However, it was designed to administer elections, and not as a platform for service delivery. The COVID-19 pandemic emphasized the lack of digital platforms that could be used to implement social protection measures more quickly and effectively to mitigate the socioeconomic impacts, by targeting new beneficiaries and expanding existing programs with reduced fraud and duplication, and to deliver payments digitally. In Timor-Leste, the large-scale cash transfer program to mitigate the impacts of the COVID-19 pandemic in the first half of 2020 faced significant challenges to quickly identify and eliminate duplicate new beneficiaries, which a digital ID system could have facilitated.

The Government has developed a UID System Strategic Plan 2021-2025 for a foundational ID system that could serve as a platform for inclusive delivery of services to all citizens and residents.[2] The Plan envisages the simultaneous introduction of a UID system to provide a unique digital ID to all citizens and residents and the strengthening of the existing civil registration system to improve the accuracy, timeliness and completeness of birth, death and marriage registration, which are crucial data for planning and monitoring

human capital development. It aims to provide a UID to 1 million citizens by 2025. The Plan also considers the need for a strong regulatory regime for data protection, and incorporates international best practices for inclusion, design, and governance as espoused by the *Principles on Identification for Sustainable Development.*[3] The Plan is, however, still to be adopted and implemented. Once active, the UID system could become the basis for a stack of technology platforms that could unlock many possibilities for human capital accumulation through digital service delivery and the digital economy, especially as the internet in Timor-Leste becomes cheaper and more reliable.

3.5. Stakeholder Coordination

A large group of stakeholders in Timor-Leste is active in the field of human capital, yet significant silos within and across sectors call for greater coherence and coordination. Public stakeholders show an uneven interest in the human capital agenda, with government initiatives seemingly fragmented. Intra- and inter-sectoral task forces could help ministries and public agencies to effectively address the joint challenges of delivering health, education, and social services, particularly tailored to Timor-Leste's most vulnerable citizens. Greater coherence and coordination are especially important given the financing transition underway in the country, during which human capital needs to increase in line with an increase in national income, while development assistance as a share of national income declines.

International development organizations remain important stakeholders across human development-related sectors, due to their high financial and institutional capacity. For instance, 38 percent of health expenditure came from external sources in 2020.[4] The sustainability of programs that have been predominantly financed by external sources may be at risk if reduced support from international development partners is not replaced with adequate resources for effective and equitable public or private service delivery. And again, better intra- and inter-sectoral coordination is needed. Cooperation between international development organizations is not always optimal, resulting in scattered and duplicative support to human capital development. This fragmentation could be addressed through initiatives aimed at bringing development partners together on a common platform to debate their plans and priorities for the country, as well as to brainstorm on feasible options for joint work in human capital development. One such initiative could be the establishment of a human capital steering committee comprising representatives of multiple sectors including health and nutrition, social protection, labor, education, agriculture, tourism, and energy. In the area of nutrition and food security, which is multisectoral in nature, the Government has already spearheaded the establishment of a

high-level coordination platform to leverage convergence of sectoral investments and drive synergies toward achieving nutrition outcomes.

There is an opportunity for public and international development organizations to work more closely with civil society organizations to leverage human capital development. Many civil society organizations are highly committed to the human capital agenda in Timor-Leste, and can leverage local, contextual knowledge of the challenges for human capital development at the grassroots level. They also have experience in monitoring the implementation of programs and conducting social audits, which could be helpful for course correction and accountability.

Notes

1. From the World Bank national accounts data, and OECD National Accounts data files.
2. See the Government of Timor-Leste's press release on its launch of the Unique Identity System website, available at http://timor-leste.gov.tl/?p=30067&lang=en&n=1.
3. See the World Bank's publication on the Principles of Identification for Sustainable Development, available at: https://documents1.worldbank.org/curated/en/213581486378184357/pdf/Principles-on-Identification-for-Sustainable-Development-Toward-the-Digital-Age.pdf.
4. Data from the WHO Global Health Expenditure Database 2021, available at https://apps.who.int/nha/database/country_profile/Index/en.

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4. Priorities

Recommended Priorities for Human Capital Accumulation

4.1. Overview

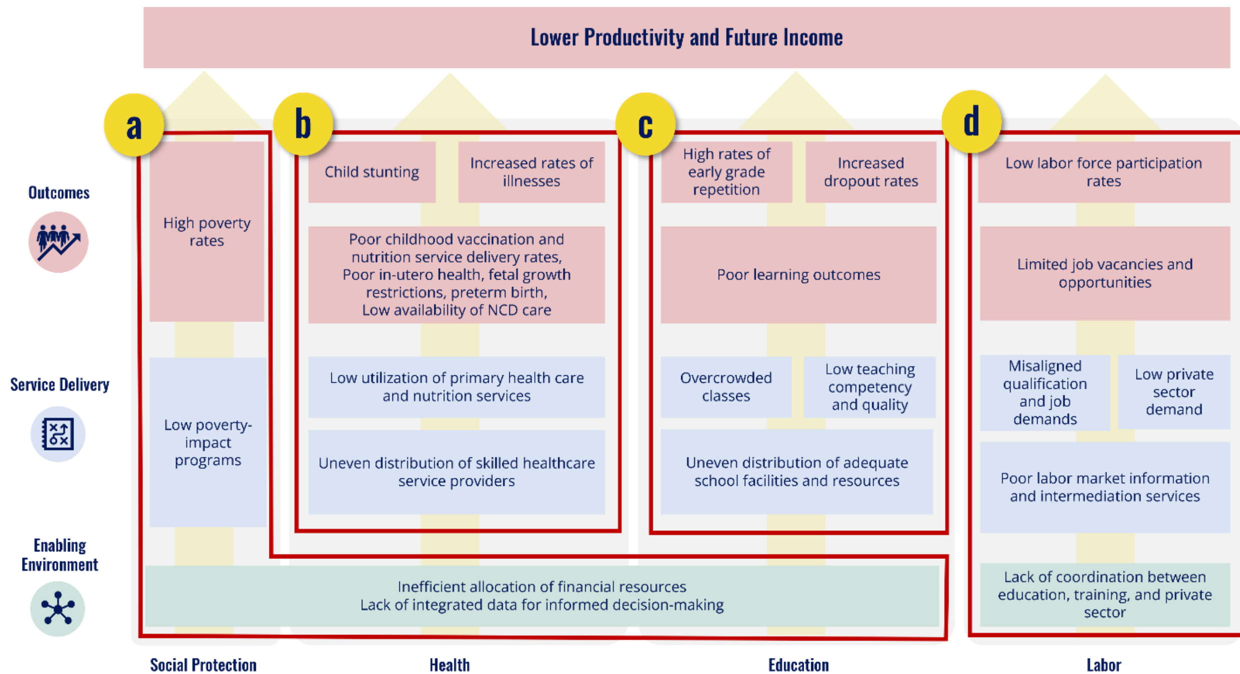
Timor-Leste is facing a human capital crisis: its macro-fiscal situation, demographic profile, and COVID-19-related losses underscore the urgent need for transformative action to bolster human capital. The likely depletion of the country's Petroleum Fund reinforces the view that the next decade is crucial for investment in the workforce of tomorrow, which will be the single-most influential driver of the country's economic growth, yet this window of opportunity is closing rapidly. This will require performance-oriented investments in human capital service delivery to ensure quality and equity as well as the productive realization of a demographic dividend. As reliance on revenue generation from petroleum becomes less viable, competition for the government budget will increase with declining revenue collection window and valid rival claims. This will make securing and sustaining budget investments even more difficult and underscores the importance of focusing on efficiency and high-impact interventions.

Based on the landscape assessment and dissection of Timor-Leste's enabling environment for human capital accumulation, the HCR distills eight core interventions with high expected efficiency and impact. These eight recommendations can be grouped into four thematic areas linking back to the conceptual framework developed in Chapter 1. There, the life course approach was detailed – from birth to elderly age – while focusing on the key human capital-related sectors: health, education, social protection, and the labor market. The four thematic areas for intervention are: (a) Improve the efficiency of public spending and stimulate demand for health, education, and social services; (b) Improve health and nutrition outcomes through health care reform; (c) Improve education outcomes and close critical skills gaps; and, (d) Foster evidence-based policy design, monitoring, evaluation, and accountability. The recommendations are presented in table 4.1 and the thematic areas are summarized in figure 4.1 in relation to the Causal Framework.

Table 4.1: Recommended Interventions across Human Capital Priority Areas

Priority Areas	Recommendations	Timeline
a. Improve the efficiency of public spending and stimulate demand for health, education, and social services	1. To stimulate demand for health, education, and social services, revamp the BdM and BdM *Jerasaun Foun* social protection programs, with specific attention to nutrition interventions and primary care demand for maternal and child health such as through the introduction of behavioral change communication targeted at beneficiaries or enforced conditionalities.	Short-term
	2. To improve the efficiency of public spending, rebalance the social protection system towards those most in need including by closing coverage gaps in the social safety net and the gradual rebalancing of limited resources towards programs that are targeted to the most vulnerable.	Medium-term
b. Improve health and nutrition outcomes through health care reform	3. To close critical supply-side gaps in health care, invest in physical infrastructure and equipment as well as in-service clinical training for current health workers, in parallel to developing a medium-term strategic plan for improving human resources in health.	Short-term
	4. To address the glaringly high stunting rate, institutionalize the multisectoral nutrition framework within CNAP-NFS with a clear focus on high-impact interventions and decisive target-setting, and strengthen comprehensive, co-located nutrition interventions for the most vulnerable, including micronutrient supplementation, breastfeeding support, age-appropriate complementary feeding, anemia treatment, family planning, antenatal care services, and maternal mental health support	Short- to medium-term
c. Improve education outcomes and close critical skills gaps	5. To improve education outcomes, launch an effective learning acceleration program that emphasizes quick wins such as tailored teacher training activities, the utilization of a compressed curriculum and the provision of close technical support to teachers and school teams.	Short-term
	6. To reduce the high number of school dropouts, implement an early warning system able to identify students who are at-risk of dropping out of school coupled with awareness-raising campaigns on the returns to education and financial incentives linked to school enrollment or attendance.	Medium-term
	7. To close critical skills gaps inhibiting private sector growth, conceptualize and implement a workforce development and deployment strategy, with an emphasis on closing the digital skills gap and in ensuring workforce readiness for priority sectors such as manufacturing and tourism.	Medium-term
d. Foster evidence-based policy design, monitoring, evaluation, and accountability	8. To foster evidence-based policy design, monitoring, evaluation, and accountability, build stronger and more integrated, interoperable data systems for the health, education, social protection, and labor sectors and introduce an inclusive UID system.	Medium-term

Figure 4.1: Recommended Priorities in Relation to the Causal Framework



Source: Authors 2022

This HCR is launched as the country enters the 2023 Parliamentary election period. Given the urgency of the issues outlined in the HCR, the establishment of a Human Capital Taskforce comprised of key line Ministries and stakeholders answerable to the Prime Minister of the forthcoming 9th Constitutional Government is key. The objectives of the Taskforce will be to review progress toward the existing sectoral plans in the health, education, and social protection sectors, as well as toward the recommendations outlined in the HCR against a set of clear and measurable intersectoral targets at regular intervals. Furthermore, this Taskforce should work across Government to address institutional bottlenecks and create the necessary enabling environment to tackle the human capital crisis in Timor-Leste.

The requirements for the successful implementation of the eight recommendations to ensure that both the quick wins and the medium-term objectives are achieved are elaborated below.

4.2. Improve the efficiency of public spending & stimulate demand for health, education and social protection services

4.2.1. Revamp the BdM and BdM *Jerasaun Foun* social protection programs, with specific attention to nutrition interventions

Social protection programs should be strengthened with interventions that guarantee higher impact on children's health, nutrition, and education. Such interventions could include behavioral change communication or conditionalities that incentivize the demand for and use of essential health and education services. Evidence from around the world shows that "cash plus" approaches to social protection that provide nutrition-focused social and behavior change communication activities to beneficiaries of cash assistance program can reduce stunting (Bhutta et al. 2021).

4.2.2. Rebalance the social protection system towards those most in need

A gradual but significant rebalancing of the social protection system is required for Timor-Leste to secure long-lasting human capital improvements, especially for its children and youth. The coverage gaps of the country's social safety net need to be closed, and the limited resources need to be better targeted to the most vulnerable to ensure allocative efficiency. In particular, the large investments in the veterans' pension program come at the expense of adequate investment in younger generations and jeopardize a prosperous and healthy future for Timor-Leste. Human capital accumulation could also be bolstered by budget reallocation to programs that yield higher impacts on poverty alleviation and human capital accumulation per dollar spent.

4.3. Improve health and nutrition outcomes through health care reform

4.3.1. Invest in physical infrastructure and equipment as well as in-service clinical training for health workers

To improve health and nutrition outcomes, investments in physical infrastructure and equipment as well as in-service clinical training for health workers are essential. Human resource capacity building should be done instantly for those health workers in-service, while a medium-term human resource for health plan is warranted to face the growing demand for new health services, including NCDs and geriatric medicine. This is especially important in remote areas, where immediate investments in health infrastructure for those with low access and the adequate provision of human resources is needed. To ensure equitable service provision, incentive systems for providers to relocate to more

remote areas should be set up alongside investments in the governance of rural health care to improve accountability. Strengthened clinical competency, including diagnostic and treatment capacity and nutrition counseling knowledge among health care providers, is required to improve health outcomes. As described in the World Bank's flagship report *Walking the Talk: Reimagining Primary Health Care after COVID-19*, health care providers must also be trained on non-clinical aspects of care, including communication skills and community engagement (Baris et al. 2021). Community-level interventions and behavior change communication will be needed to increase population awareness of and linkages to primary care, and from there across the referral system. Inadequate access to primary health care and an ineffective referral system not only worsen health and nutrition outcomes and set children on the wrong track for growth but may also spur the use and overburdening of more expensive secondary and tertiary care down the line.

4.3.2. Institutionalize the CNAP-NFS framework and invest in comprehensive, co-located nutrition interventions for the most vulnerable

Investments in co-located, evidence-based, and cross-sectoral interventions among the most vulnerable is key to address malnutrition and tackle stunting, while an institutional home for a supra-ministerial nutrition coordination body is urgently needed. This will require coordinated action to ensure delivery of comprehensive PHC interventions including micronutrient supplementation, breastfeeding support, age-appropriate complementary feeding, anemia treatment, family planning and antenatal care services, and maternal mental health support, among others. These PHC-based interventions should be complemented by food supplementation and fortification, food safety and security, water and sanitation, women's empowerment, and associated behavior change communication and child growth promotion efforts (Keats et al. 2021). Attention to evidence-based community-based nutrition interventions is much needed as basic nutrition efforts to prevent malnutrition currently do not reach the intended target groups. PHC providers should serve as a one-stop-shop for delivering key health-related nutrition interventions and education about non-health interventions while also incorporating outreach services. A recent CNAP-FNS costing analysis suggests that approximately US$50 million a year is required to scale up comprehensive nutrition-specific and nutrition–sensitive interventions across relevant sectors that can trigger a dialogue on how to realize adequate investment. The current momentum around stunting in the country should be capitalized upon through clear target-setting in the wake of the CNAP-NFS launch. An institutional home for a supra-ministerial nutrition coordination body is urgently needed to align necessary resources, scale up high-impact interventions, and strengthen accountability to results across all concerned sectors.

4.4. Improve education outcomes and close critical skills gaps

4.4.1. Launch an effective learning acceleration program that emphasizes quick wins

Limitations in teachers' capacity have not been adequately addressed and are reflected in poor and disparate learning outcomes and grade repetition. Grade repetition can be addressed through the implementation of a learning acceleration program that requires a focused teacher training program. Frequent tailored trainings for teachers can improve the quality of education services and help reduce the education system's internal inefficiencies. An effective learning acceleration program can employ a combination of comparatively quick wins such as tailored teacher training activities, the utilization of a compressed curriculum and provision of close technical support to teachers and school teams coupled with more medium-term interventions such as frequent assessment of learning outcomes for regular course correction. Grade repetition could also be addressed by designing and implementing an effective teacher professional development program. This could equip teachers with adequate, age appropriate and inclusive pedagogical practices, while also providing them with the necessary skills and resources to deliver high-quality education services.

4.4.2. Implement an early warning system to identify students at-risk of dropping out of schools coupled with awareness raising campaigns and financial incentives

School dropouts could be addressed through a combination of interventions to decrease the flow of at-risk, and the stock of affected students. On the former, the implementation of an early warning system able to identify students who are at risk of dropping out of schools could be prioritized as a prevention measure. This type of intervention is low-cost and proved effective in various countries with similar challenges. On the latter, awareness-raising campaigns on the returns to education could be promoted, and financial incentives linked to school enrollment or attendance could be provided to families to offset the opportunity costs. Similar to recommendation 4.2.1, a revamped BdM and BdM *Jerasaun Foun* social protection program could be the platform for such financial incentives.

4.4.3. Conceptualize and implement a workforce development and deployment strategy

To capitalize on its investments in basic human capital, Timor-Leste requires a robust and effectively implemented workforce development and deployment strategy, and the strategic involvement of the private sector. Timor-Leste is currently facing the challenge of a labor market inundated with graduates struggling to find jobs because of limited vacancies. Given that recent job creation has been primarily a product of public sector expansion, there is room for economic diversification and private sector expansion to

generate jobs in the future. The need for a robust and effectively implemented workforce development and deployment strategy to provide skilling for those sectors where a significant mismatch between demand and supply has been identified. Emphasis should be put on closing the digital skills gap and ensuring workforce readiness for priority sectors such as manufacturing and tourism.

4.5. Foster evidence-based policy design, monitoring, evaluation, and accountability

4.5.1. Build stronger and integrated, interoperable data systems for monitoring and accountability and introduce an inclusive UID system

Investing in modern and integrated, interoperable digital data systems and analytics can improve targeting, monitoring, and accountability of health, education, and social protection programs, while a UID system could be a platform for inclusive digital delivery of services. Digital ID systems and systematic collection of data in human development sectors can facilitate evidence-based decision-making in real-time. A robust data sharing architecture can have a beneficial impact on human capital policy decisions and outcomes by improving coordination among Government programs as well as helping identify inequities that can be subsequently addressed. In the health sector, this could include benchmarking performance, ensuring that licensing requirements are up-to-date, and incentivizing providers to engage in outreach services and community-level demand-generation, while also capitalizing on the potential of disruptive technology and telemedicine for digital service delivery. In education, data systems will allow to assess school performance, as well as the performance of the entire education system, allowing for benchmarking and timely course correction. The integration of administrative tools and a unified method to identify beneficiaries would also help to facilitate a holistic analysis of the convergence and overlaps of social protection programs and allow for more effective targeting through more accurate monitoring and evaluation, while being a core pillar of institutional accountability. A robust labor monitoring system can help address both labor surplus and shortages of human resources for human capital service delivery. A UID system could become the basis for a stack of technology platforms that could unlock many possibilities for human capital accumulation through digital service delivery and the digital economy.

4.6. Conclusion

A sharper focus on efficient human capital investment, especially for its young generations, is crucial for Timor-Leste to capitalize on its youth bulge and achieve sustained long-term economic growth. Now more than ever, people will be the future drivers of Timor-Leste's economic growth and development, with new opportunities brought about by technology and globalization. Building an enabling environment for human capital accumulation through targeted investments in equitably provided education, health and nutrition services, and social protection will allow the country to mitigate adverse impacts from the COVID-19 pandemic, enhance trust in its institutions, and allow the nation's children to achieve their full potential and lead Timor-Leste towards the future. This needs to be accompanied by evidence-based annual detailed activity plans and targets, and a reporting or accounting mechanism answerable to the higher levels of Government, including the Prime Minister, on results, ensuring action is monitored and efficient.

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Appendix

In-depth Sectoral Analysis

A.1. In-depth Analysis for Health

A1.1. Regulatory Context

In the early stages of development of Timor-Leste's public administration, the country was supported by humanitarian organizations. Following the referendum of 1999, Indonesian health workers withdrew, and the workforce shrunk from 3,540 to 1,500 persons. Humanitarian assistance helped with primary health care functions. Assistance was provided by the International Committee of the Red Cross (ICRC), with support from the United Nations Children's Fund (UNICEF), the World Health Organization (WHO), and the United Nations Population Fund (UNFPA). From that scenario, the country gradually transitioned to Governmental provision of health services, including through the management of services and programs by the Ministry of Health (MoH) in 2002 (Blum et al. 2019).

Various strategies, policies, and bodies govern the functioning of health services in Timor-Leste. These include the Constitution of 2002, the National Health Sector Strategic Plan (NHSSP) 2011-2030, the National Health Sector Strategic Plan II (NHSSP II) 2020-2030, and the Strategic Development Plan (SDP) 2011–2030. The NHSSP 2011-2030 provides the overarching policy framework for priorities and developments in the health sector, and aims to ensure available, accessible, and affordable health care services for all Timorese people. The objectives and timeline of the NHSSP are in line with that of the Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC). The NHSSP is also fully in line with the SDP, which aims to make comprehensive, high-quality health services accessible to all Timorese people.

To make progress on the NHSSP, MoH aims to develop key building blocks of the health system, including human resources for health, health infrastructure, and institutional capacity to manage the health system (regulatory functions, administration and management, planning and budgeting, monitoring and evaluation, etc.).[1] The responsibilities

of MoH are stated in the Decree Law No. 50/2020 while Decree Law No. 3/2016 MoH provides for the devolution of key management responsibilities and resources to Municipal Health Services. MoH is responsible for providing and regulating quality health services for all, while also promoting community and stakeholder participation. It is expected to ensure that all citizens, of whatever gender, age, place of residence or socioeconomic status, have: (a) equitable access to good-quality, basic and essential health services provided in (and beyond) facilities that are well-equipped and staffed by competent health professionals, and (b) information that empowers them to make informed choices about matters affecting the health and well-being of themselves, their families, and their communities.

In line with the reforms envisioned under the NHSSP, MoH has developed a Health Financing Strategy (HFS) for 2018-2022. The HFS aims to continue to ensure financial protection to the population of Timor-Leste, increase health funding to cover unmet health care needs, reduce inequities in resource distribution and service coverage across the country, and improve health system efficiency. Key findings of the HFS include the need for increased resource mobilization for health and ensuring sustainable public financing, improvements in pooling and allocation of the health budget, and opportunities for enhancing service delivery through financing reforms such as program-based budgeting and strategic purchasing for a package of health services. These priority areas were identified through a diagnosis of challenges in health financing and agreed upon with key stakeholders in the health sector. The HFS was launched in the fall of 2019.

Given the large burden of malnutrition, the country has built strong momentum to shift gears from food security-focused efforts to institutionalizing the scale-up of multisectoral nutrition actions. Prior to becoming the 62nd country member of the global Scaling Up Nutrition (SUN) Movement in 2020,[2] the Government developed the 2017 National Food and Nutrition Security Policy, the National Action Plan for a Hunger and Malnutrition Free Timor-Leste, endorsed the Zero Hunger Challenge and Sustainable Development Goals, launched the National Nutrition Strategy (NNS) (2014-2019), and formed the National Council on Food Security, Sovereignty and Nutrition (KONSSANITL) led by the Ministry of Agriculture and Fishery. Recognizing that these earlier policies, strategies and the coordination structure focused more on food security, the Prime Minister called for a single, common, costed, measurable multisector action plan to align partners and collectively work toward achieving nutrition and food security targets of SDG2, which resulted in the development of CNAP-NFS[2], accompanied by the National Health Sector Nutrition Strategic Plan 2022-2026. These developments were followed by a high-level event on stunting reduction in 2022 where the Prime Minister stressed the need for robust investments in a concerted and multi-sectoral action for nutrition security. As KONSSANTIL also lacks a legal

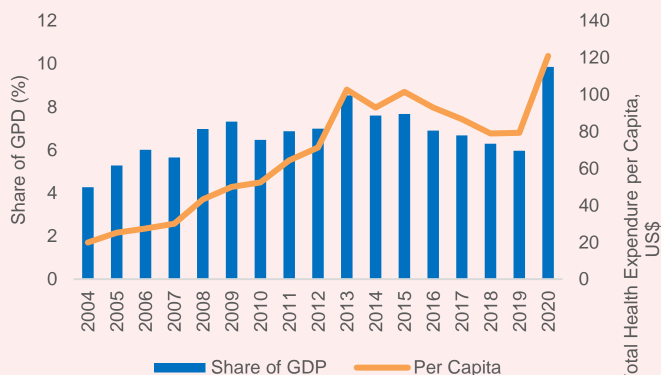
basis as a coordination body, GoTL is currently undergoing a process to institutionalize a high-level multi-sectoral nutrition coordination body to strengthen the stewardship of the implementation of the CNAP-NFS across sectors.

A.1.2. Health Sectoral Environment

Timor-Leste has a tiered health service delivery system, with facilities and service nodes at each administrative level. There is one national hospital in Dili and five referral hospitals in Baucau, Ainaro, Bobonaro, and Covalima municipalities and in the special economic zone of Oecussi. At the PHC level, 70 Community Health Centers (CHCs) are located in sub-municipalities, and 321 Health Posts (HPs) in most larger villages. Outreach services are run monthly through the *Servisu Integrado du Saude Comunidade* (SISCa) program. The *Saúde da Família* initiative, launched in 2015, complements these services by bringing PHC to the home setting and taking a person-centered approach to health and well-being. Ancillary services such as laboratory functions, a blood bank, and supply chain services for medicines and commodities are each managed by separate entities at the central level. These facilities provide care to patients of all ages.

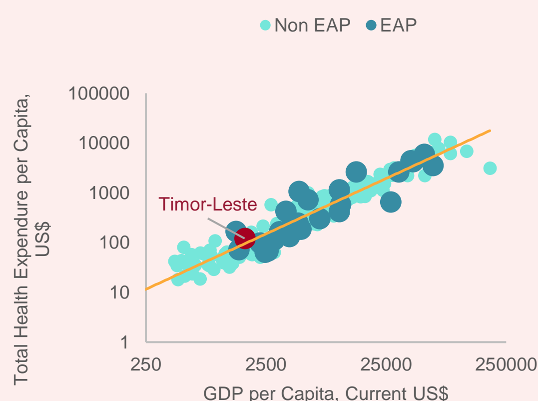
Timor-Leste rivals other EAP LMICs in average total health spending. In 2019, total health spending in the country was US$79.3 per capita, rising to US$ 120.9 in COVID-19 year 2020 (World Bank 2023). The level of spending has grown substantially, increasing approximately threefold in real terms over the past decade (see Figure A.1). This level of health spending is to be expected at Timor-Leste's level of development (Figure A.2). Health services provided by the public sector are free of charge at the point of care to all Timorese citizens, resulting in 55.3 percent (WHO 2023) of spending on health coming from the government budget, and consequently a low share of private, out-of-pocket (OOP) spending on health (6.7 percent or US$8.1/capita in 2020) (World Bank 2020a and 2020b). Accordingly, the financial impact on households from health expenditures is relatively limited. It is estimated that 9.6 percent of households spend 10 percent or more of nonfood consumption on OOP payments for health (World Bank 2014). This outcome is comparable to the global average of 9.2 percent and is better than the average for Asia (12.8 percent) (WHO and World Bank 2017). Furthermore, health spending contributes little to poverty in Timor-Leste: less than 1 percent of households fell under the US$1.25/day poverty line because of health spending (World Bank 2014).

Figure A.1: Total Health Expenditure per Capita and as a Share of GDP, 2004-2020



Source: World Bank World Development Indicators and World Health Organization (WHO)/Global Health Observatory (GHO) databases.

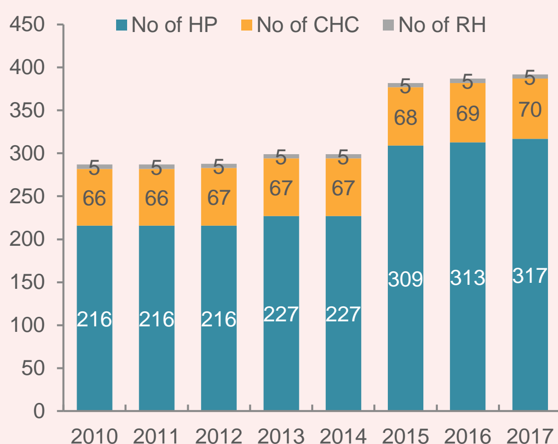
Figure A.2: Total Expenditure on Health per Capita, 2020



Source: World Bank World Development Indicators database
Note: Both y- and x-axes logged.

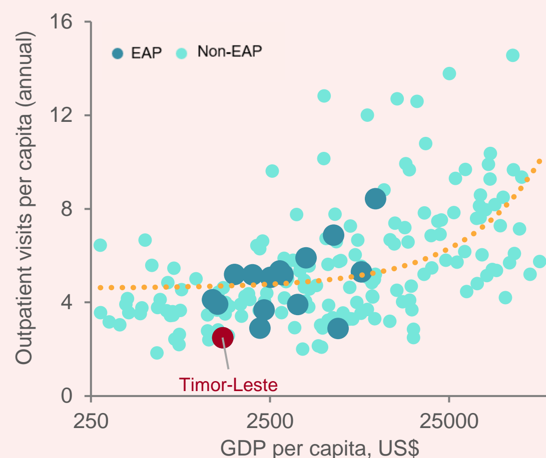
Although Timor-Leste has available financing for health, improvements in health care infrastructure and enhanced availability of equipment have not ensured effective coverage of and access to good quality health services. Primary care facilities are in need of upgrading, and secondary and tertiary care capacity is both insufficient, and unequally distributed. The inequitable supply-side readiness and service provision is underpinned by weak management of key resources such as money, human resources, and supplies. For example, many health facilities in Timor-Leste still lack basic amenities and are unevenly distributed across the country, yielding a low health service utilization rate. While more outpatient facilities—CHCs and HPs—have been built in recent years, (see Figure A.3), the number of Referral Hospitals has remained the same, with many municipalities not having access to a fully functional secondary care facility, hampering health care access of primarily remote, rural communities. The annual outpatient utilization rate in 2017 was approximately 2.5 visits per person, lower than the NHSSP's target of a minimum of three visits per person, and significantly lower than regional peers (see Figure A.4) (WHO 2017). Hospital beds are heavily utilized, which stresses their low availability, unable to cover utilization as low as two hospital admissions per 100 people. Low rates of outpatient visits (and low rates of NCD screening and management) indicate that the population is not accessing preventive PHC either, which contributes to inefficient and expensive utilization of hospital care and associated poor health and economic outcomes.

Figure A.3: Number of Health Facilities in Timor-Leste, 2010 to 2017



Source: Timor-Leste National Health Sector Strategic Plan (NHSSP) 2011-2030

Figure A.4: Outpatient Contact Rate, Timor-Leste and Comparator Countries



Source: Institute for Health Metrics and Evaluation Database 2010 Outpatient figure for Timor-Leste from Annual Joint Report 2018, Ministry of Health

Note: x-axes logged; excluding countries with outpatient visit above 15 per capita

Increased investments in coverage through HPs are hindered by the limited availability of providers, equipment, and supplies (see Table A.1). Particularly, the shortage of nebulizer machines, peak flow meters, and pulse oximeters highlight the shortage of equipment needed to address noncommunicable lung diseases (a top cause of death in Timor-Leste). The prevalent rates of undiagnosed hypertension and cardiovascular disease in the country[3] could also be correlated to the lack of blood pressure meters and stethoscopes at HPs. A low availability of infant and child scales also does not position health care providers to appropriately identify and address indicators of poor early life growth. The impact of the much-needed additional infrastructure investments is ultimately hampered by the suboptimal availability and distribution of providers and equipment, and the poor maintenance and operation of infrastructure and equipment.

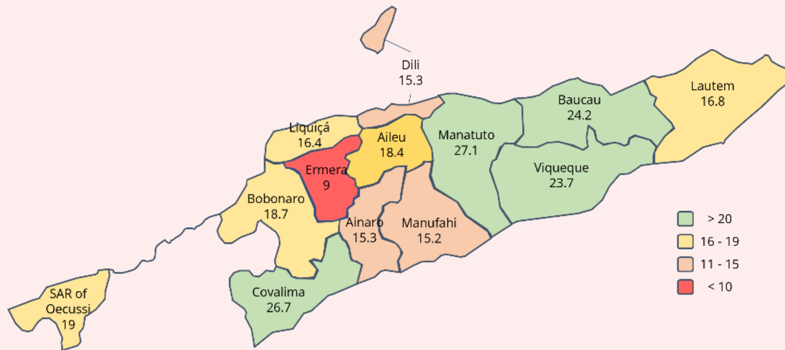
Table A.1: Availability of Medical Supply Items by Type of Health Facility (percent)

Medical supply item	Hospital	CHC	HP	All
Adult scale	100	98	97	97
Child scale	100	92	79	81
Infant scale	100	94	56	64
Stadiometer	100	93	88	89
Thermometer	100	98	82	85
Stethoscope	100	99	79	83
Blood pressure meter	100	93	74	78
Nebulizer machine	100	61	7	18
Peak flow meter	60	62	5	17
Pulse oximeter	100	48	6	15

Source: WB and Oxford Policy Management Health Worker Survey in Timor-Leste Report 2015

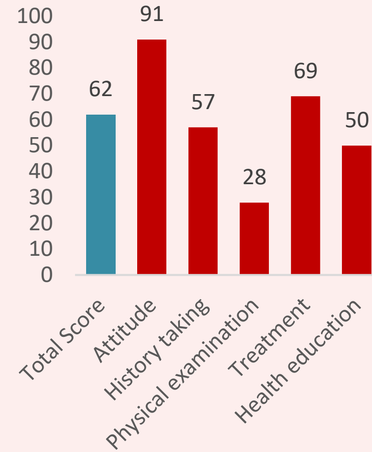
Despite significant increases in recent years, the number of health workers is still relatively low. Health workers are also unevenly distributed (see Figure A.5) and may lack key clinical competencies (see Figure A.6). The ratio of nurses and midwives to population has seen the greatest increase, from 9.06 per 10,000 population in 2013 to 17.73 in 2020 (which is still low in contrast to neighboring Indonesia with 39.78 per 10,000 in 2020).[4] The number of doctors has increased as well, from 6.13 per 10,000 population in 2013 to 7.67 in 2020. Together, the nurse/midwife doctor ratio of 25.49 per 10,000 population is much lower than the WHO-recommended 44.5 per 10,000 population to achieve universal health coverage (WHO 2016). Their unequal distribution should be addressed through improved human resource planning but could also partially be remedied through the introduction of telemedicine services, both at the primary level, for example through virtual antenatal care consultations, and for specialist services, for example through virtual cardiac care consultations with specialists abroad.

Figure A.5: Health Care Workers per 10,000 Population by Municipality, 2017



Source: Ministry of Health Feedback Report on Annual Health Program Review and Joint Annual Health Sector Review 2017

Figure A.6: Average Clinical Performance Score



Source: WB and OPM Health Worker Survey 2015

Efficiency gains can be captured by improving the quality and distribution of health workers and increasing patient utilization of PHC. Additional efforts are required to strengthen the clinical competencies of health care providers. Preservice training lacks resources such as adequate library facilities, laboratories, and practice sites. Core competency frameworks and competency-based curricula have not been introduced, which leaves many graduates without suitable skills and competencies when they enter the health workforce, where they will also find suboptimal in-service training (DFAT 2019). Rural and poor households receive poorer-quality care, and the suboptimal allocation of health care providers in remote or disadvantaged areas undoubtedly contributes to low rates of care utilization among the most in need.[5] Since most of the health interventions to address NCD risk factors and maternal and child health and childhood nutrition are delivered through primary care, increasing equitable outpatient primary care utilization has the potential to drastically improve population health outcomes and increase the efficiency of health spending.

A.2. In-depth Analysis for Education

A.2.1. Regulatory Context

Since independence, Timor-Leste has faced the major challenge of rebuilding its education system and improving education service delivery following the dismantling of the Indonesian-led education system. Many teachers had to be incorporated rapidly into schools, as most of the Indonesian teachers left the country. A new curriculum based on local languages had to be designed and, as a result of the process that led toward its Independence, the infrastructure of the education system (schools and universities) was either nonexistent or severely dilapidated (80-90 percent of school facilities were destroyed[6]). In addition, new laws and regulations for the operation of the education system had to be put in place.

At present, education service delivery in Timor-Leste is divided into preschool, basic education, secondary education, and postsecondary education. Preschool is for children aged 3 to 5 years, and basic education covers 9 years of education, beginning with children aged 6 years. Education is compulsory for grades 1 through 9. Secondary education is for 15–17-year-olds, and postsecondary education is an option for secondary school graduates.

In total, there are 1,811 schools in Timor-Leste, including 374 preschools, 1,282 basic education schools, and 155 secondary schools; there are also 11 postsecondary institutions.[7] The basic education schools comprise over 70 percent of the education system, and 85 percent of them are public. The private sector plays a larger role in preschool and secondary schools, where only 64 percent and 61 percent, respectively, are public. Given greater private sector investment in schools in the capital, Dili has a disproportionately large fraction of preschools and secondary schools, and a disproportionately small fraction of basic education schools.

Two major institutional actors are responsible for the preparation and implementation of education policies and programs, as well as the management of Timor-Leste's education system. These are the Ministry of Education, Youth and Sports (MEYS), and the Ministry of Higher Education, Science and Culture (MHESC). According to the Organic Laws of the Eighth Constitutional Government (Decree-Law 14/2018), as well as Decree-Law No. 2/2019 and Decree-Law No. 10/2021, MEYS is responsible for the school system from preschool to secondary education, whereas MHESC is responsible for higher education. The existing regulations guarantee the right to education for all citizens.

Municipalities have an increasingly large role in the education space, as defined in decentralization Decree-Law No. 3/2016 and Decree-Law No. 9/2018. As part of the decentralization initiatives, municipalities are currently responsible for school feeding programs and management of preschool education, while they also collaborate with central-level authorities for school construction and maintenance.[8]

Several regulations and documents govern the provision of educational services in Timor-Leste. These include the Constitution of 2002 and the SDP 2011-2030. The Government affirms its commitment to education through the SDP, which states that "education and training are the keys to improving the life opportunities of our people and enabling them to reach their full potential. They are also vital to Timor-Leste's development and growth". The SDP was followed and enhanced by three sector-specific plans: the National Education Strategic Plan (NESP 2011-2030) and its update, the Education Sector Plan (ESP) 2020-2024, as well as the National Technical and Vocational Education and Training Strategic Plan, developed in parallel in recognition of the high rates of youths outside of the formal education system and youth unemployment**.** The ESP establishes education targets to be achieved by 2030, focused primarily on improving enrollment and retention, literacy, performance on competency-based exams, availability of technical courses, lifelong learning, and equity.

Inclusive education has become a key focus area in recent years. MEYS has since 2015 focused on improved curriculum, teacher training, and preschool expansion. Specifically, the Ministry has developed a new curriculum for preschool and basic education, which includes materials and teacher training, while also being tailored to the challenging linguistic scenario in Timor-Leste. MEYS also created a mentoring/coaching program for teacher development and implemented several models of preschool. The preschool models include public (managed by MEYS), private (run by NGOs, individuals, or churches) and community-based preschools, which are typically in rural areas that do not have access to public preschools and are established with involvement of the Ministry of Education, Village Councils, and parents. The NESP includes a comprehensive program to help ensure equity in access to education for females, children with disabilities, displaced populations, and children in poverty-stricken families. The approval of the Inclusive Education Policy in 2017 constitutes a significant change in the national context. The Policy calls for an end to the exclusion of children with disabilities from mainstream classrooms. This is a fundamental change in the approach to which most schools, school leaders, teachers, and parents are accustomed, and few concrete measures have been put in place to implement the changes needed. Consequently, there is a critical need for steady, consistent, well-planned, adequately

financed, and closely monitored measures to incorporate children with disabilities into mainstream classrooms.

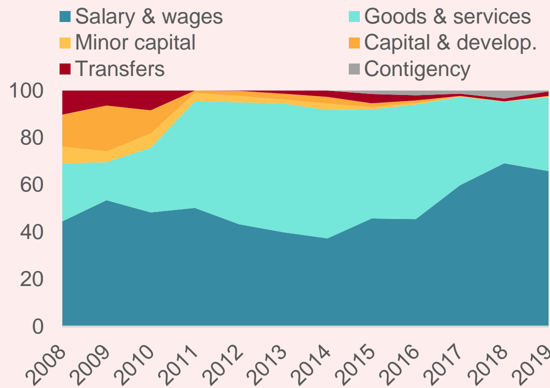
A.2.2 Sectoral Environment

Government spending on education in Timor-Leste matches expectations for countries with similar levels of development, but poor student learning outcomes continue to be a challenge. In 2019, public spending on education represented 4.1 percent of GDP, similar to other countries in the region. Public expenditure on education has fluctuated notably, recording a strong increase from US$46 million in 2008 to US$164 million in 2014, but gradually decreased until a partial recovery in 2019 (World Bank 2020c). Meanwhile, learning outcomes as measured by the 2018 national exam results for grade 9 indicated that less than half of students had learned at least 50 percent of the required material. Weak outcomes may be attributed to suboptimal teaching and learning conditions. High rates of grade repetition and dropouts, as well as lack of qualified teachers and adequate infrastructure are some of the most salient challenges the country faces.

The composition of spending on education has changed considerably, with a rising wage bill, which could be problematic if it crowds out spending on other key inputs. Mainly driven by the growing number of teachers, expenditure on salary and wages increased from US$20 million in 2008 to US$73 million in 2019, about two-thirds of total education expenses. In parallel, spending on goods and services has declined considerably, while spending on other categories such as capital investments and transfers to schools has been relatively marginal (see Figure A.7). Investments in infrastructure have also been very limited in the recent past despite an estimated large number (10 percent) of classrooms in poor condition and requiring rehabilitation and rising future demand (World Bank 2021). Moreover, a high share of schools lacks adequate WASH facilities, including drinking water (missing in 40 percent of basic education schools) and functional toilets (missing in 66 percent of basic education schools).

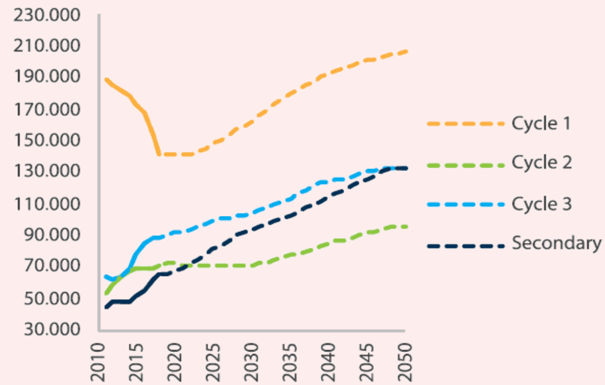
Demographic trends indicate that the education system is expected to face a higher demand for services, with the demand for secondary schools outpacing supply. The student population is projected to increase by 23 percent between 2018 and 2035 (UN 2017), meaning the demand for public education services will likely grow considerably in the near future (see Figure A.8). The number of 3 to 5-year-olds is expected to increase by about 17 percent between 2018 and 2030. Additionally, although the number of secondary schools has increased over the past decade, it will not be sufficient to meet the demand of a 47 percent increase in the number of secondary students by 2035. Many classrooms are overcrowded, with the biggest increase in class size observed in secondary schools, where the average classroom had 46 students in 2011 and 57 students in 2018 (World Bank 2021).

Figure A.7: Spending on Education (share) in Timor-Leste



Source: WB World Development Indicators Database 2020

Figure A.8: Student Number Projections



Source: WB using UN World Population Prospects 2017 Revision
Note: Cycles 1-3 represent basic education, with cycle 1: grades 1-4; cycle 2: grades 5-6; cycle 3: grades 7-9

A.3 In-depth Analysis for Social Protection

A.3.1 Regulatory Context

The Government of Timor-Leste has shown a strong commitment to social protection. A series of programs were put in place in the aftermath of the 2006 crisis in Timor-Leste[6] to resettle the displaced, reduce tensions, and promote social cohesion. In late 2007, the Government launched a National Recovery Strategy to provide aid for postcrisis recovery. MSSI, together with other partners, was able to close all internally displaced person camps and return the displaced to their homes by end of 2010. By early 2008, the Government started to implement its first cash transfer programs. This included an Allowance for the Support of the Elderly and Invalid (SAII), veterans' payments, and BdM. In November 2021, through Law No. 21/2021 the Government introduced BdM *Jerasaun Foun*.

Until recently, social protection was governed by piecemeal legislation, reflecting a mix of policy goals. The legal framework was a collection of program-specific legislation and regulations issued by MSSI, Ministry of National Liberation and Combatants Affairs (MACLN), and other ministries. However, there are certain programs, benefits, and services without specific regulatory legislation, such as the support to victims of GBV and domestic violence, or for natural disasters recovery and victims of social conflicts. These programs have been operating based on, among others, ministerial orders, organic law, and national plans, and

their objectives may vary from alleviating poverty, reducing vulnerability, mitigating shocks, facilitating access to basic services, to enhancing human development.

In November 2021, the Government launched the National Social Protection Strategy that sets out a clearer vision and objectives of the country's social protection system. The strategy builds on the targets set out in Timor-Leste's SDP and the SDGs and is also part of the MSSI Strategic Plan. The strategy stipulates three main objectives, namely: (a) reducing poverty, (b) improving and expanding social security for workers, and (c) promoting institutional development. Each of these objectives contains priority areas or interventions. The strategy envisages the establishment of a National Council for Social Protection and Executive Secretariat for Social Protection mainly to promote stronger coordination and more robust monitoring of the strategy's implementation. While the social security system has a clear objective, existing programs remain fragmented and poorly administered. There are a variety of small programs targeting a wide range of groups, employing different approaches to achieve their goals.

The Contributory Social Security System, introduced through Law No. 12/2016, provides income replacement in case of old age, disability, death, maternity, paternity, and adoption (Table A.2). This Pay-As-You-Go defined benefit pension is mandatory for all formally employed workers (employees and employers) from the private and public sectors yet remains voluntary for all other workers who are qualified for work including entrepreneurs, the self-employed, and domestic workers (World Bank 2020c). Based on the last available data, there are 72,143 insured workers, which corresponds to approximately 34 percent of the labor force in Timor-Leste or only around 10 percent of the working age population. An estimated 65 percent of the registered workers are public sector employees, 33 percent are private sector workers, and only 0.5 percent are other individual workers. In addition, 1,300 employers are registered in the system, merely 25 percent of the total number of employers in the country (World Bank 2020c).

The non-contributory scheme aims to ensure fulfillment of minimum level of basic needs and is universal in nature, covering all Timorese citizens based on prevailing eligibility rules (Table A.3). The scheme consists of the allowance for the elderly in the form of old age social pension that aims to guarantee a minimum income for citizens aged 60 years or older who are not receiving veterans' benefits or covered by any compulsory social insurance scheme. A cash transfer of US$50 per month is provided to eligible senior citizens. Meanwhile, allowance for the Support of the Invalid is a disability social pension that aims to protect people with severe disabilities aged 18 years or older who are unable to work. The program also provides a cash transfer of US$50 per month.

Table A.2: Key Features of the Contributory Social Security System

Key Features		
Contribution		**Benefit**
Mandatory social security contributions:	Shared contributions due on the employee's gross wage at rates of 4% by the employee and 6% by the employer	**Main benefits:** • Old-age pension • Disability pension • Survivor benefits (Survivor pension, Death grant and Reimbursement of funeral expenses) • Maternity and Paternity benefits
Voluntary social security contributions:	*Self-employed/Domestic workers/Others*: 10% of the monthly conventional gross wage. Beneficiaries have to choose the value of conventional earnings (from 2 times up to 10 times the value of the SAII)	
Effective coverage		
Active contributors to social security as % of the labor force		34
Active contributors to social security as percentage of non-oil GDP (%), 2019		10
Social Security spending		
Annual spending as percentage of non-oil GDP (%), 2019		0.2

Source: Adapted from WB Timor-Leste Social Protection Review 2022

Table A.3: Key Indicators of Non-contributory Social Protection Programs

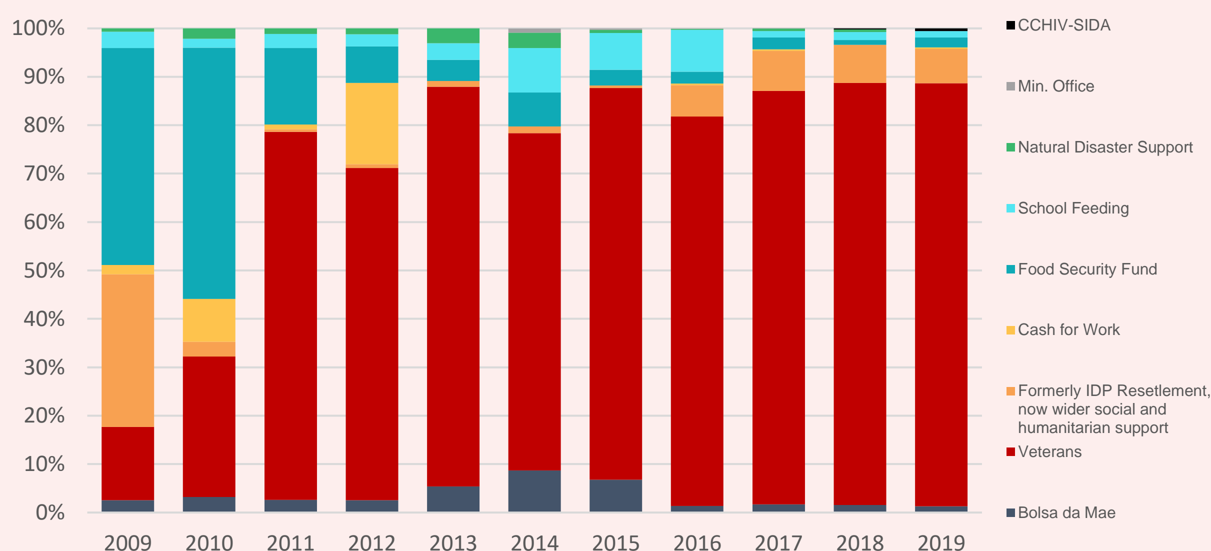
Program Name	Year	Coverage (%)		Beneficiary incidence (%)	Transfer as a share of beneficiary welfare (adequacy) (%)		Annual spending as percentage of non-oil GDP (%), 2019
		Poorest Quintile	Total	Poorest Quintile	Poorest Quintile	Total	
Bolsa da Mãe	(2014)	19	16	33	:	:	0.1
	(2019 Est.)	29	24	:	6	4	
Elderly Pension	(2014)	32	27	31	:	:	1.7
	(2019 Est.)	53	45	:	15	10	
Disability Pension	(2014)	5	4	31	:	:	
	(2019 Est.)	5	4	:	14	12	
Veterans Pension	(2014)	3	6	13	:	:	4.5
	(2019 Est.)	7	14	:	60	47	

Source: Adapted from WB Timor-Leste Social Protection Review 2022

A.3.2. Sectoral Environment

The high rate of social protection spending has not translated into improvements in welfare. Large swaths of spending are allocated for veterans of Timor-Leste's resistance - up to 64 percent of the 2019 social protection budget (see Figure A.9). This proportion is excessive considering its coverage of a very restricted group of people estimated to compose just 3.7 percent of the poorest 40 percent of the populace in 2019. Social protection programs will continue to have limited impact on welfare if resources are distributed primarily in accordance with such criteria.

Figure A.9: Distribution of Social Assistance Spending, 2009-2019



Source: WB staff calculations using Timor-Leste's budget data 2009 - 2019

Analyses show that the impact of the main social assistance programs varies from negligible to small regarding national welfare. Table A.4 presents the impact of each social assistance program on poverty reduction. BdM has gradually prevented people from falling below the poverty line by 0.9 percentage points from 40.5 percent to 41.4 percent. This almost negligible reduction in the national poverty rate is due to the very small benefit level and low coverage of the poor population. Meanwhile, the veterans' program has prevented poverty from increasing by 2.5 percentage points, from 40.5 percent to 43 percent. Although the Veterans' Pension is estimated to have some impact on poverty reduction, it comes at a great cost of 4.5 percent of non-oil GDP in 2019 and the poverty reduction impact is driven largely by the size of the transfer.

Table A.4: Distribution of Social Assistance Benefits

	Poverty Headcount
Baseline	40.5
Increase if programs were discontinued (change in percentage points)	
Bolsa da Mãe	1.0
Elderly Pension	5.1
Disability Pension	0.6
Veterans	2.6
All removed	**9.3**

Source: Timor-Leste Economic Review, December 2022

Notes

1. This is drawn from the Government of Timor-Leste's Strategic Development Plan (NESP) 2011-2030. https://wedocs.unep.org/20.500.11822/9800.
2. In September 2020, Timor-Leste officially became the 62nd country member of the global SUN Movement that has instituted a new way of working collaboratively to end malnutrition in all its forms. With a vision for a world without hunger and malnutrition and achieving the Sustainable Development Goals (SDGs), the SUN Movement was established in 2010 and endorsed by the World Health Assembly.
3. From World Health Organization. Noncommunicable Diseases (NCD) Country Profiles: Timor-Leste 2018. https://www.who.int/nmh/countries/2018/tls_en.pdf.
4. From World Health Organization Global Health Observatory database, "Nursing and Midwifery Personnel (per 10,000 Population)." https://www.who.int/data/gho/data/indicators/indicator-details/GHO/nursing-and-midwifery-personnel-(per-10-000-population).
5. From the Government of Timor-Leste (GoTL) and World Health Organization (WHO)'s 2020 "Rapid Health Facility Readiness Mapping" report.
6. This data is from the Government of Timor-Leste (GoTL) Education Sector Plan (ESP 2020-2024).
7. Ibid.
8. Ibid.

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