Food and Nutrition Security in Timor-Leste: Challenges and Prospects

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Key Points

- Timor-Leste has one of the highest rates of malnutrition in the world, with 46 per cent of children under five suffering from chronic malnutrition.

- Many subsistence households experience annual food shortages, largely due to poor agricultural productivity and insufficient output to last the year. Climate variability worsens shortages and severely impacts household food security.

- Timor-Leste relies on food imports to offset domestic production deficits, leaving the population vulnerable to the impact of global price changes. Poorer households, which spend a high proportion of disposable income on food, are the most vulnerable.

- Food and nutrition insecurity will continue to retard Timor-Leste’s development, particularly given the long-term impacts of climate change and population growth.

Summary

Timor-Leste’s food and nutrition insecurity is a multifaceted legacy of its history of occupation, conflict and underdevelopment. As most of the population relies on subsistence farming for their livelihoods, household food insecurity largely stems from poor agricultural productivity and the resultant low levels of disposable income to spend on purchasing food. As a result, many households experience annual food shortages. Malnutrition is also a
particular problem in Timor-Leste. Stunting, where a child is too short for their age, affects almost half of children under the age of five. Malnutrition directly impacts a child’s health and hinders their physical and cognitive development, which results in barriers to reaching their best performance in school and work. Consequently, Timor-Leste’s high rate of malnutrition impedes the population’s ability to break the cycle of poverty and, at the national level, is a burden on national development. As a Least Developed Country, with a high poverty rate, achieving food and nutrition security is crucial for Timor-Leste’s development.

Analysis

The Democratic Republic of Timor-Leste, commonly referred to as East Timor, is a small country in the Malay Archipelago, around 550 kilometres north of Australia. Timor-Leste’s territory consists of the eastern side of the island of Timor; Atauro and Jaco islands; and the exclave, Oecusse, situated in Indonesian West Timor. The country is mountainous and tropical, with distinct wet and dry seasons. Around 70 per cent of Timor-Leste’s 1.2 million people rely on subsistence agriculture for their livelihoods and similar numbers live in rural areas.

Timor-Leste’s history of occupation and conflict is crucial to an understanding of its widespread poverty and food insecurity. Following Portuguese colonial rule from the 16th century, the Revolutionary Front for an Independent East Timor (Frente Revolucionária de Timor-Leste Independente, or FRETILIN) declared independence for Timor-Leste on 28 November 1975. On 7 December 1975, Indonesia invaded Timor-Leste, resulting in a brutal occupation and guerrilla-style armed resistance for 24 years. A report by The Commission for Reception, Truth and Reconciliation, found that during the occupation, 18,600 East Timorese were directly killed or disappeared and 84,200 died from hunger and illness.

In August 1999, 78.5% of Timor-Leste’s voting population voted for independence in a national referendum administered by the United Nations Mission in East Timor. The result immediately sparked mass violence by pro-Indonesian and anti-independence militias, causing the displacement of up to three-quarters of the population. The fighting resulted in
the destruction of the vast majority of Timor-Leste’s physical infrastructure and a complete institutional collapse. In September 1999, a UN-mandated peacekeeping force, mainly consisting of Australian troops, entered Timor-Leste. Timor-Leste became the first newly-independent state of the 21st century on 20 May 2002.

Despite post-conflict development in its political, state and economic institutions, Timor-Leste remains a Least Developed Country, with poor economic foundations. The percentage of the population living in poverty fell from 50.4% in 2007, to 41.8% in 2014. Over the same period, the proportion living in extreme poverty fell from 47.2% to 30.3%. Just 27.3% of the working age population is employed, however, and 40.5% of total employment is in the agricultural sector.

**Food Security and Agriculture**

Timor-Leste is food insecure. The 2017 Global Hunger Index categorises Timor-Leste as suffering from a “serious” level of hunger. This situation is a direct result of poor agricultural productivity, low incomes, underdeveloped infrastructure and the vulnerability of Timor-Leste’s food supplies to the impact of global food prices and climate variations. Since 2001, the number of undernourished people in Timor-Leste has remained constant at around 300,000. According to the National Council for Food Security, Sovereignty and Nutrition in Timor-Leste (KONSSANTIL), 62 per cent of households experienced food shortages for more than one month in 2013. Households are generally at their most vulnerable during the wet season, between October and March.

Timor-Leste’s agricultural sector does not meet the population’s food and dietary needs. Household food insecurity stems from poor agricultural productivity for subsistence farmers and a lack of disposable income to offset deficits with purchased food. While reliable data on crop production is limited, it is clear that agricultural output of Timor-Leste’s staple foods is insufficient. Despite the high proportion of the population relying on subsistence farming, only 30 per cent of arable land is utilised for growing food and grazing livestock.

Timor-Leste’s staple foods include maize, rice and cassava. The yields of maize, Timor-Leste’s primary crop, averaged two tonnes per hectare in 2009 and 2010, which is less than half of the average yield for the same crop in neighbouring countries, such as Indonesia, Cambodia, Laos, Thailand and Vietnam. A 2012 article in the journal Ambio, attributed low yields in Timor-Leste to poor soil, low-yielding local crops, sloping terrain, volatile rainfall and a high weed burden. It noted that up to 30 per cent of grains are lost in the post-harvest stage.

Timor-Leste’s reliance on underdeveloped and undiversified subsistence agriculture leaves its food supplies vulnerable to climate-related shocks. Extreme La Niña-induced wet weather caused maize output in the 2010-11 season to fall to 28 per cent of the long-term average.

The journal Food Security reported that 41.8% of households in four municipalities (Aileu, Baucau, Liquica and Manufahi) foraged for wild foods during this period, as a way of coping with food insecurity, compared with an average of 9.2% in a normal year. The global El Niño-induced drought, declared in May 2015, caused further damage to food and water security in Timor-Leste. A Humanitarian Partnership Agreement assessment of the impact of El Niño...
in February 2016, found that in the worst impacted areas, 70 per cent of respondents did not have water for crops and three-quarters reported the disruption of regular food sources. The drought led to the loss of 70,000 head of livestock. For agrarian-based societies, such as Timor-Leste, climate variability has a profound impact on the livelihoods of the people.

Food security in Timor-Leste faces three climate- and seasonal-related challenges. Firstly, it is subject to cyclical food insecurity. Households, particularly in upland areas, are affected by annual food shortages prior to the maize harvest. Secondly, large-scale climate shocks also severely impact household food security, due to crop failures and livestock losses. Timor-Leste’s underdeveloped infrastructure, institutional weaknesses and its reliance on a small number of staple crops, leave the country with a limited capacity to mitigate the impacts of climate disasters. Thirdly, climate change will continue to place increasing pressure on Timor-Leste’s food security. Predictions indicate that by 2050 temperatures will rise by 1.5 degrees and average annual rainfall will increase by ten per cent in Timor-Leste. Additionally, the population is expected to reach three million by 2050.

According to a 2011 report by the Australian Bureau of Meteorology and the Commonwealth Scientific and Industrial Research Organisation, the frequency and intensity of high temperatures and high rainfall days will increase in Timor-Leste over the 21st century. As a result, food security will be severely threatened by both climate change and population growth if agricultural productivity does not improve. The development of the agricultural industry and the promotion of more diverse and climate-resilient crops are crucial
requirements for achieving food security and mitigating the future impacts of climate change.

**Household Access to Food Sources**

For the average individual and household in Timor-Leste, accessing food supplies for a nutritious diet can be a challenge, due to generally low levels of disposable income and physical constraints on market access. According to the government’s [National Food and Nutrition Security Policy](#), around 40 per cent of household income is spent on food. Consequently, price increases have a strong impact on the average household’s ability to purchase food to meet its dietary needs.

Timor-Leste’s food prices are vulnerable to global fluctuations. Around 40 per cent of cereal foods are imported, which leaves Timor-Leste’s food prices largely determined by volatile global prices. [Inflation](#) in 2011 and 2012, during the global food price crisis, was 13.5% and 11.8% respectively, dropping to 3.3% in 2013 as global food prices eased. Timor-Leste’s import dependency and low agricultural productivity mean that the country is unable to respond to high import prices by increasing domestic production. As a result, during times of high inflation, food security for poorer households is put under increased pressure as food becomes less affordable.

Access to food sources is also challenged by physical constraints on households trying to reach markets. Road infrastructure in many of the rural and mountainous municipalities is underdeveloped, with many villages connected by unsealed roads, which are easily damaged
during the wet season. On average, 60 per cent of Timor-Leste’s aldeias, or communities, are inaccessible by road during periods of the wet season. As noted in a 2017 report by the East Timorese Centre of Studies for Peace and Development, there is a clear relationship between access to food and transportation. Sacks of rice cost an average of US$2.50 (AU$3.40) more in February than in August, as transportation costs are higher during the wet season. Compounding factors pressure household food security during this period. In the wet season food sources are physically and economically more difficult to access. Households consume fewer meals during this period prior to harvest.

**Malnutrition**

Malnutrition is a serious and complex problem in Timor-Leste, with a wide range of consequences. According to the 2016 Demographic and Health Survey, 46 per cent of children under five years old suffer from chronic malnutrition, also known as stunting meaning a child is too short for their age. The incidence of stunting in Timor-Leste is one of the highest in the world. Half of the stunted children are severely affected and, in addition, 40 per cent of the country’s children are underweight. Anaemia, a blood condition that can be caused by iron deficiency, affects 40 per cent of children between the ages of six and 59 months.

While stunted growth is more common in poorer households, 36 per cent of children in Timor-Leste’s highest wealth quintile are also stunted. Poverty, therefore, is a significant, but not a definitive determinant of malnutrition.

Malnutrition has a range of severe consequences in Timor-Leste. It is the most prevalent cause of premature death and disability and an underlying risk factor for over a quarter of children’s deaths. Good nutrition is crucial for children’s health and their physical and cognitive development, especially in the first 1,000 days of life from conception to the age of two. Malnutrition, on the other hand, hinders growth and stops children from reaching their full development potential. In the long term, this results in poor school performance and lower labour productivity later in life.

Malnutrition is also a complex and multi-dimensional burden on Timor-Leste’s national development. In total, undernutrition causes a yearly burden of US$41 million ($55.35 million) on the East Timorese economy, representing around one per cent of Gross Domestic Product. It: depreciates labour productivity; reduces the size of the future labour force, due to child mortality; and imposes the costs of treating undernutrition-related illness. For a post-conflict country like Timor-Leste, with an underdeveloped economy and a high rate of poverty, this economic burden has a serious impact on its development, ability to build strong institutions and overall stability.

Malnutrition, food insecurity and poverty are interlinked in Timor-Leste. Poorer households have less disposable income to purchase an adequately diverse diet. Children with poor nutritional intake do not perform as well in school, which reduces their ability to earn higher incomes in adulthood, resulting in a cycle of poverty. At the national level, this creates a barrier to attempts to reduce poverty and hinders economic development.
As indicated above, malnutrition in Timor-Leste is a socio-cultural issue, with complex immediate and underlying causes. At its core, malnutrition is caused by nutrient deficiencies, which are largely the result of an inadequately diverse diet. The average East Timorese person is meeting their dietary energy supply of calories, but this largely consists of staple foods with low levels of protein and micronutrients. Animal products are available, particularly in rural areas, with 87.2% of Timor-Leste’s households raising livestock in 2015. Households, however, often prioritise the sale of these animals over home consumption.

Child feeding practices remain inadequate and hinder efforts to reduce malnutrition rates. The 2016 Demographic and Health Survey showed that only 13 per cent of children aged six to 23 months were meeting minimum standards for an acceptable diet, which indicates that a very low proportion of children are receiving adequate levels of meal frequency and dietary diversity.

Undernutrition and disease reinforce each other in a vicious cycle. Undernutrition hinders the body’s ability to fight disease, while illnesses, such as diarrhoea, reduce the body’s ability to absorb nutrients. In Timor-Leste, the lack of ready access to health and sanitation services is a significant factor in the incidence of malnutrition.

Prospects and Challenges

Timor-Leste has shown impressive post-conflict development, following decades of occupation and crises. Achieving food and nutrition security, however, is crucial to its development as a stable middle-income country with strong economic, political and social institutions. The Government of Timor-Leste recognises the importance of reducing malnutrition and hunger to enable the country to reach its development goals.

East Timorese food and nutrition insecurity has far-reaching consequences, ranging from the effects on the health of individuals, to the prosperity of the state. With close to three-quarters of the population below the age of 35, Timor-Leste now has an opportunity to develop a productive work force to drive future economic growth. Malnutrition and food insecurity, however, will hold back this development. Population growth and climate change will only increase these pressures.

The lack of effective transport links in Timor-Leste will also continue to be a challenge. The country’s underdeveloped and unsealed roads limit transport options during the wet season, particularly in remote mountainous areas. As a result, physical access to markets and health services is difficult for several months of the year. Significantly, yearly food shortages and higher food prices coincide with that part of the wet season when the roads are at their most inaccessible.

Agricultural productivity must be improved. With investment, improved yields and higher crop diversity, the subsistence farmers that make up most of the population would be less vulnerable to food insecurity during annual shortages and climate-related shocks. Surplus crops could be sold at markets, providing a crucial source of income, particularly in rural areas. At the national level, a more self-sufficient agricultural sector would lighten Timor-Leste’s reliance on food imports and its vulnerability to volatile global prices.
Crop diversity is an important step in improving the availability of diverse and nutritious foods. Malnutrition, however, is as much a socio-cultural issue as it is an availability issue. The promotion of behavioural change at the grassroots and community levels is required to make clear the importance of good nutrition and a diverse diet. Efforts to that end are already underway, with the Timor-Leste Ministry of Health, for example, providing communities with nutritional knowledge as a strategy to fight malnutrition. Additionally, enhanced access to health services and sanitation would also contribute to reducing the country’s very high rate of malnutrition.

Timor-Leste is at a crucial point in its post-conflict development and has the potential to progress to a position of long-term peace, stability and economic growth. The country, however, faces serious challenges. Predictions indicate that Timor-Leste’s petroleum resources, which provide revenue for 90 per cent of public expenditure, are diminishing. The government may be constrained in its ability to provide the services vital to food and nutrition security in the future. Timor-Leste, however, is one of the more democratic countries in South-East Asia, with a young population capable of driving growth. To achieve its vision of development, food and nutrition security must be prioritised.

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About the author: Caleb Gorton is a recent Curtin University graduate, who completed a Master of International Relations and National Security in July 2018. His Master’s project analysed the impact of food security on post-conflict peacebuilding and development, focusing on Timor-Leste and Nepal as case studies.

Prior to his final semester of university, Caleb spent five months in Timor-Leste as a Public Information Intern for the United Nations World Food Programme. From March to July 2017, Caleb volunteered as a Research Assistant for Future Directions International’s Global Food and Water Crises Programme. His research interests include food security, development and politics in the Indo-Pacific region.

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