



## The Oil Industry and the Prevention of Climate Change in the Context of Timor-Leste

**Jonathan Gonsalves,<sup>1</sup> Researcher, La'o Hamutuk, the Timor-Leste Institute for Development Monitoring and Analysis**

Timor-Leste is the second-smallest country in Southeast Asia, with a 2023 population of around 1.4 million. It is also the newest country in the region, having regained independence in 2002, and its economy relies heavily on oil and gas. However, the main activity for its people is agriculture, with 66% of households engaged in subsistence agriculture<sup>2</sup>, yet much of the country's daily food is imported. The country consumes an average of 180,000 tons of rice annually and nearly 65% of it is imported. This scenario already presents significant challenges for the country, and its vulnerability to climate change adds another layer of difficulty. This article provides a brief overview of the fossil fuel industry and describes efforts in Timor-Leste to address this complex set of vulnerabilities, especially for farmers.

Farmers in Timor-Leste struggle to continue their production, facing challenges such as inadequate water supply, poor infrastructure, insufficient facilities, and high financial costs. However, today, they face an even bigger challenge: climate change. This issue weakens farmers not only in Timor-Leste but worldwide. Prolonged dry seasons, reduced rainfall, and frequent floods create unpredictable weather and erosion, causing some farmers to lose productive land and abandon farming. The difficulties in terms of food sovereignty, which is one of the main concerns nowadays in Timor-Leste, gets even worst in this case.

Timor-Leste is categorized among the Small Island Developing States (SIDS), which are not major contributors to greenhouse gas emissions but face high vulnerability, experiencing significant damage and loss.<sup>3</sup> These states are often left with few options but to assume responsibilities that should be addressed by developed and industrialized countries. Although concerns about climate change are global and involve various organizations and institutions, the types of impact and vulnerability that Timor-Leste faces cannot wait for big players to confront during forums and discussions. This leaves Timor-Leste and other Pacific islands increasingly dealing with extreme weather events, compelling them to respond urgently, regardless of the difficulties. Major conferences like the Kyoto Protocol, the Paris Agreement, and the Conferences of Parties (COP) occurred decades ago, but have not yet ensured that the countries responsible will reduce their high levels of emissions.

The impacts of climate change compel countries to act based on their local capacity and knowledge. In Timor-Leste, the country has attempted to organize and take actions through adaptation and mitigation projects, funded by Green Climate Fund (GCF), for example, and also through organized popular movements that slowly are giving back strength and resilience to the communities. Some adaptation practices, mainly water conservation and reforestation, have provided benefits over the years. For instance, communities dependent on rivers for their water supply have seen an increase in water resources in areas where local non-governmental organizations (NGOs), like PERMATIL, organize actions, such as PERMASCOUT and

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<sup>1</sup> Translation from Tetum to English by Ana Carolina Oliveira, also a researcher at La'o Hamutuk.

<sup>2</sup> GoTL, 2019 Timor-Leste Agriculture Census, <https://www.laohamutuk.org/DVD/2020/TLACMainReportNov2020en.pdf>

<sup>3</sup> UNDP, Small Island Developing States are on the Frontlines of the Climate Change, <https://climatepromise.undp.org/news-and-stories/small-island-developing-states-are-frontlines-climate-change-heres-why#:~:text=Vulnerability%20to%20climate%20change%3A%20Despite,loss%20of%20biodiversity%20and%20forced,> 30 April 2024.

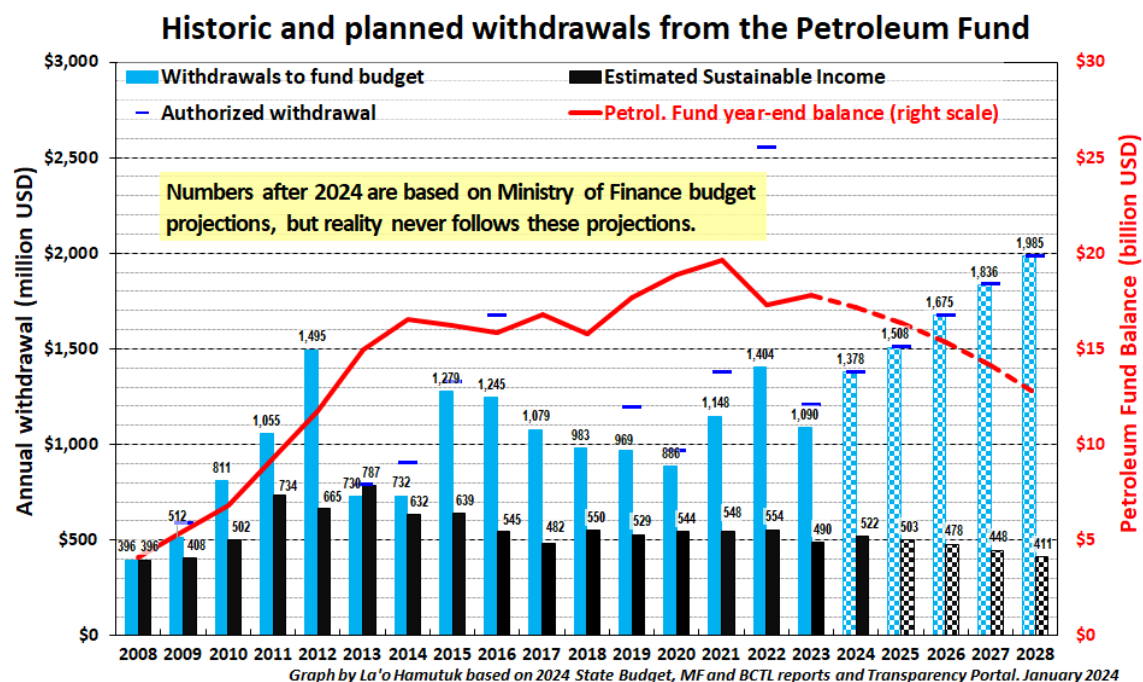


PERMAYOUTH. This demonstrates that delegating actions regarding climate change to local NGOs, which work closely with communities, often leads to more effective results and that's what this article will advocate.

First, this paper describes the petroleum industry and its main producing fields, alongside with how it has been impacting Timor-Leste. Following this, it delves into actions that have been happening in the country, highlighting which are seen as good practices that might be replicable and which require further investigation to measure their impacts.

### Oil Activity and Impact on Climate Change

Timor-Leste's national economy has depended heavily on the oil and gas sector since 2005, when it began receiving revenues from oil and gas exportation, buffered through a sovereign wealth fund called the Petroleum Fund. Each year, 80% to 90% of the state budget relies on this fund<sup>4</sup>. In nearly two decades, the state has spent almost USD \$16 billion, and \$18 billion is still in the Petroleum Fund as of March 2024<sup>5</sup>. The two oil and gas fields that provided revenues to Timor-Leste during this period are Bayu-Undan and Kitan. Kitan produced for only five years (2011–2015), while Bayu-Undan provided returns for nearly two decades and will end production this year. After that, Timor-Leste will rely solely on investments in financial markets.



From 1999 to 2016, companies extracted oil from the offshore Laminaria-Corallina field which is in Timor-Leste's territory, but the country never received any revenue. The Australian Government took advantage of Timor-Leste's post-independence inexperience and euphoria to sell the oil, taking in about \$5 billion, none of was shared with Timor-Leste.<sup>6</sup>

<sup>4</sup> La'o Hamutuk, Submisaun Proposta OJE 2024, [https://www.laohamutuk.org/econ/OGE24/231207LH\\_Submisaun\\_ba\\_Komisaun\\_C\\_PN\\_OJE\\_2024te.pdf](https://www.laohamutuk.org/econ/OGE24/231207LH_Submisaun_ba_Komisaun_C_PN_OJE_2024te.pdf), 07 December 2023

<sup>5</sup> Banco Central Timor-Leste, Fundu Mina-Rai Timor-Leste, Relatório Trimestral, Vol. 20 Número LXX Marsu 2024.

<sup>6</sup> La'o Hamutuk, [https://www.laohamutuk.org/Oil/Boundary/laminaria\\_revenues.htm](https://www.laohamutuk.org/Oil/Boundary/laminaria_revenues.htm).



Notwithstanding the urgent need to diversify its economy, Timor-Leste tends to prioritize perpetuating the oil and gas industry. This preference is evident in the National Strategic Development Plan 2011–2030, which aims to transform three municipalities (Covalima, Manatutu, and Viqueque) which were known in the Portuguese colonial period as the "Breadbasket of the Nation," into petroleum infrastructure known as the Tasi Mane Project.<sup>7</sup> Although Timor-Leste's leaders are aware of the role the oil and gas industry plays in causing climate change<sup>8</sup>, leading to longer dry seasons, untimely rainfall, and floods, which greatly affect the global agriculture sector, they continue to work with the oil and gas sector. Many Timorese leaders are addicted to the fantasy of easy money from petroleum extraction and export.

Worldwide, around 500 million small-scale farmers produce about 80% of global food, yet they already face significant challenges and impacts, which are expected to worsen in the future.<sup>9</sup> Timor-Leste's farmers are no exception. In addition to contextual difficulties such as lack of basic infrastructure, while having high financial costs, they also grapple with extreme events caused by climate change, adding another layer of complexity to their situation.<sup>10</sup> A severe example was Tropical Cyclone Seroja on April 4, 2021, which killed 44 Timorese people and affected around 34,000 households. The cyclone destroyed houses, basic infrastructure, and productive land around the country, prompting Timor-Leste to urgently seek assistance from international partners to deal with the damage.<sup>11</sup>

Industrialized nations recognize that the oil and gas industry and other environmentally unfriendly industrial activities are the primary drivers of climate change. Therefore, these industries must cease their operations. Despite declarations and promises made in agreements like the Kyoto Protocol, the Paris Agreement, and the Conferences of Parties, tangible changes have yet to materialize; greenhouse gas emissions continue to rise.<sup>12</sup> These countries have been investing more in creating funds and developing technologies than in truly addressing the problem and the urgency it requires.

One example is Carbon Capture and Storage (CCS) technology, which aims to capture carbon from the atmosphere or industrial activities, but, as shown in Australia, this mechanism has failed to capture significant amounts as promised.<sup>13</sup> Often, companies and countries engage in the carbon market to meet emission reduction targets they could not achieve through CCS, boosting the carbon market but not really addressing the problem. Timor-Leste is also part of this market and has already entered into an agreement with the IFC to cooperate on a proposed CCS project in the depleted Bayu-Undan gas field. In addition to CCS, industrialized countries established a global fund called the Green Climate Fund (GCF) to support countries in adapting to and mitigating climate change. This fund aims to assist small countries directly affected by the climate crisis through loss and damage. However, GCF has not yet managed to properly address the obstacles and challenges.

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<sup>7</sup> GoTL, Strategic Development Plan (2011-2030), 2011, <https://www.laohamutuk.org/econ/SDP/10SDPindex.htm>.

<sup>8</sup> Government of Timor-Leste, Timor-Leste participates in the 2023 United Nations Climate Change Conference – COP28, <https://timor-leste.gov.tl/?p=35434&lang=en&lang=en>, 06 December 2023.

<sup>9</sup> International Fund for Agriculture Development (IFAD), 2013, Smallholders, food security, and the environment, Rome, Italy, [https://www.ifad.org/documents/38714170/39135645/smallholders\\_report.pdf](https://www.ifad.org/documents/38714170/39135645/smallholders_report.pdf),

<sup>10</sup> IPC, Timor Leste Acute Food Insecurity Analysis November 2023 – September 2024, <https://reliefweb.int/report/timor-leste/ipc-timor-leste-acute-food-insecurity-analysis-november-2023-september-2024-published-february-29-2024>.

<sup>11</sup> GoTL, Government of Timor-Leste and Partners Appeal for US\$32 Million to Assist Flood Victims and Early Recovery, <https://timor-leste.gov.tl/?p=28299&lang=en>, 01 June 2021.

<sup>12</sup> Our World in Data, CO2 Emission by fuel, <https://ourworldindata.org/emissions-by-fuel>, 06 May 2024.

<sup>13</sup> The Guardian, Australia's only working carbon capture and storage project fails to meet target, <https://www.theguardian.com/australia-news/2021/nov/12/australias-only-working-carbon-capture-and-storage-project-fails-to-meet-target>, 11 November 2021



The impacts on farmers and countries like Timor-Leste, where rice imports are crucial, have been alarming. Timor-Leste is particularly vulnerable to changes in the export policies of major rice-producing countries, driven by the effects of climate change on their agricultural sectors. For instance, in the second half of 2023, India, which supplies nearly 40% of the world's rice, attempted to halt exports to prioritize its domestic demand and address the needs of its farmers, who also have their production affected by climate change. This move caused global, including in Timor-Leste, raising concerns about potential global inflation and food insecurity.

Timor-Leste is considered one of the most vulnerable countries to food insecurity<sup>14</sup> and is constantly on the brink of facing a food crisis and continued malnutrition because of the impacts of climate change in the global agriculture sector. Besides that, it also faces the local impacts driven by the effects of climate change in the country. The major floods in April 2021 demonstrated Timor-Leste's vulnerability and highlighted the challenges and obstacles that farmers face, potentially leading to future food crises.

### **Actions to Prevent Climate Change and its effects**

To try to avoid further exacerbating climate change, some in Timor-Leste, including Government, development partners, international and local NGOs, and local communities, are undertaking measures to minimize the risks of floods and significant soil erosion. Some examples are worth noting, especially one led by a local NGO, PERMATIL, where communities and youth undertake actions to conserve rainwater and plant trees<sup>15</sup>. Another practice that has shown interesting and positive effects is the "tara bandu", a traditional ritual which embodies customary law, mainly used to regulate community-based environmental activities and contribute to a healthier environment.<sup>16</sup>

Since 2017, The government, through the National Designated Authority (NDA) team, has been identifying measures to preserve water resilience in the agriculture sector, ensuring food security and ecosystems adaptable to 'natural' disasters. From 2019 to 2023, the Government of Timor-Leste received approximately \$65 million from the Green Climate Fund (GCF).<sup>17</sup> International agencies have also received money from the GCF to implement adaptation and mitigation programs. These actions span across various sectors such as health, agriculture, biodiversity, water, energy, and ecosystems. Implementing agencies include UNDP, UNEP, JICA (Japan), and the ADB. In addition, the Government of Timor-Leste has created legislative frameworks and regulations to prevent environmentally dangerous activities. This includes the preparation of a draft Climate Change Law in 2022, and conducting consultations with various entities, including inviting La'o Hamutuk, which is preparing a submission.<sup>18</sup>

Some current NGO initiatives are funded by GCF, which is directly accessed by international agencies and companies that are able to submit a proposal and, later, often partner with local NGOs to implement their programs. There are also other funds that, for example, UNDP or other organizations accesses to carry out various kinds of climate change projects. For instance,

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<sup>14</sup> IPC, Timor Leste Acute Food Insecurity Analysis November 2023 – September 2024, <https://reliefweb.int/report/timor-leste/ipc-timor-leste-acute-food-insecurity-analysis-november-2023-september-2024-published-february-29-2024>.

<sup>15</sup> Tatoli, PR Horta Apresia Inisiativa PERMATIL Konserva Bee, <https://tatoli.tl/2023/04/04/pr-horta-apresia-inisiativa-permatil-konserva-bee/> 04 April 2024

<sup>16</sup> More information on this practice, which has been implemented in different contexts in Timor-Leste, can be accessed here: <https://dialogosuntl.com/index.php/revista/article/view/35/280>, 17 November 2022.

<sup>17</sup> Green Climate Fund, Democratic Republic of Timor-Leste, <https://www.greenclimate.fund/countries/timor-leste>, 17 April 2024.

<sup>18</sup> TL Proposed Climate Change Law, <https://laohamutuk.org/Env/Climate/2023/23ClimateChangeLaw.htm> .



a project financed from Global Environment Facility (GEF) improves mangroves and cares for coastal ecosystems coastal areas, also using *tara bandu*.<sup>19</sup>

Another example of engagement with communities involves direct contracts with farmers for the carbon capture program, intended to provide income for local people. The project, called Rai Matak, has reportedly managed to plant around 250,000 trees in the communities they work with. La'o Hamutuk, as well as other NGOs, disagrees with some of the practices, arguing that they may ultimately transform productive agricultural land into mere tree plantations for carbon capture. Even if Timor-Leste genuinely wants to contribute to reducing global greenhouse gas emissions, its positive effects will be limited when developed and industrialized countries will continue to operate their industrial activities. The carbon market is not the answer. These types of projects cause future risks for Timor-Leste and other places that will continue to depend on importing food if their productive land is be converted into growing trees rather than food crops.

On the other hand, popular actions led by NGOs, notably PERMATIL, mobilize grassroots efforts and achieved genuinely positive results. Communities that once struggled to access clean water during long dry seasons can now get water from nearby sources. This is a significant improvement compared to previous years when they had to walk long distances to find and carry clean water. This comes from notable initiatives through PERMASCOUT, a program that integrates permaculture principles with scouting activities, engaging young people in environmental education and sustainable practices through the scouting movement. It focuses on educating youth with knowledge and a voluntary spirit to love their land and environment by conserving rainwater and planting trees. Organizing young people through PERMASCOUT, along with another program, PERMAYOUTH, has been ongoing for nearly a decade, with participants from nearly all 12 municipalities, including Oecusse.<sup>20</sup>

Besides popular actions and some support from international funds, there is also financing from oil and gas companies operating in Timor-Leste through a mechanism called Local Content, which the Timor-Leste Government applied in Production Sharing Contracts (PSC) related to oil and gas industry activities. Local Content intends for oil and gas companies to contribute to Timor-Leste through social actions and support activities that the government is already conducting. Santos, an Australian company, has been extracting oil and gas production activities at the Bayu-Undan Field. Over the past nearly two decades, Santos has provided significant funding through its Local Content program, providing direct support to the state to implement programs in education, healthcare, agriculture, and environmental conservation. Additionally, Santos has supported local NGOs such as Santalum, which has planted around 40,000 trees over 19 hectares of land in Dili and Liquiça areas. In 2021-2022, through the Local Content program, Santos spent nearly \$40 million, less than 3% of what it took in from oil and gas production in Timor-Leste during those two years.

In addition to the overall efforts mentioned above, the Timor-Leste Government is attempting to use the depleted Bayu-Undan gas field for carbon capture projects through agreements with Santos and the International Finance Corporation (IFC)<sup>21</sup>. This initiative claims to ameliorate greenhouse gas emissions from Santos' proposed extraction from the offshore Barossa field in Australian territory, whose gas has a very high CO<sub>2</sub> content. However, Timor-Leste will certainly

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<sup>19</sup> UNDP, Coastal Resilience Building (CRB), <https://www.undp.org/sites/g/files/zskgke326/files/migration/tl/CRB-Project-factsheet.pdf>, February 2021.

<sup>20</sup> PERMATIL coordinates with local NGOs to mobilize youth, and communities from each suku (village) across Timor-Leste to learn how to love the environment through actions like composting and terracing to preserve underground water, and also to prevent soil erosion, and to plant trees. This activity is carried out up to three times each year.

<sup>21</sup> GoTL, Government Signs Cooperation Agreement with IFC for Carbon Capture and Storage Project, <http://timor-leste.gov.tl/?p=36866&lang=en>, 22 March 2024.



bear the negative effects of the continuation of oil activity in the region by developed countries. The National Petroleum Authority (ANP) regulates oil and gas activities. La'o Hamutuk disagrees with this commitment and with the whole CCS Project. Despite the potential revenues, which depend on the international market, La'o Hamutuk argues that CCS practice, ostensibly to reduce greenhouse gas emissions, often fails and incurs high costs. Moreover, this type of project is implemented to legitimize the mining and gas industry, ultimately damaging the environment. This perpetuates the granting of licenses and favors to companies, further exacerbating environmental degradation.

Timor-Leste's vulnerability and difficulties in managing future projects will perpetuate their negative environmental impacts. What has shown positive results are activities implemented by organizations that are truly connected with the communities' everyday reality, such as PERMATIL.

## Conclusion

Timor-Leste has assumed the responsibility, often seen lacking in developed nations, to mitigate climate change impacts, despite its minimal contribution to global greenhouse gas emissions. Through engaging in adaptation and mitigation actions, the country demonstrates its moral commitment to both the planet and its communities. Timor-Leste actively implements practical measures, primarily through grassroots youth movements and local NGOs. Additionally, it receives support from international agencies and mining and gas companies that engage in reforestation, marine conservation, and rainfall conservational efforts, although this is still far from what was hoped for.

Furthermore, the country's government is consistently present at major climate change conferences but has yet to demonstrate its seriousness and commitment. President Jose Ramos-Horta has made statements urging contributing nations to reduce greenhouse gas emissions, yet, simultaneously, he has engaged with the President of China to discuss the Tasi Mane project. The Paris Agreement, which aims to limit global warming to below 1.5°C by 2030, is at risk of becoming a hollow agreement. Our World in Data demonstrates doubts about the commitments declared collectively, indicating that greenhouse gas emissions continue to rise.

In that sense, global funding policies for mitigation and adaptation, as well as compensation policies for oil companies and the carbon market, lack significant value and impact. Furthermore, the reality continues to overlook smaller nations' attempts to assert themselves as significant players on this planet. La'o Hamutuk views the policy of establishing a global fund for adaptation and mitigation as a false solution, given the unwillingness of industrialized countries to halt their activities. La'o Hamutuk believes that the oil and gas industry today makes smaller nations even more vulnerable. Hence, we advocate actions to reduce emissions, led by a significant commitment from developed and industrialized nations to cease harmful activities while promoting technologies and industries that truly protect the environment. Net Zero can be achieved only when industrialized nations change their behavior. Meanwhile, research shows that delegating responsibilities to local NGOs is the most effective way to achieve positive outcomes in the face of complex challenges such as extreme climate events, food insecurity, and agricultural production difficulties.