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Social Movements and Food Sovereignty: Moving Timor-Leste with Permaculture

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Abstract: Ending hunger and achieving global Food Security, meaning access to affordable food for everybody, appear as noble common goals of development and sustainability agendas. Still, for decades, social movements and scientists worldwide have contested the agendas underlying logics for being grounded in a New Global Economy that undermines local resilience. As elaborated with a revision of Vandana Shiva's *Stolen Harvest* and the case of Timor-Leste, this not only creates sociocultural issues but also undermines sustainable food systems that could set examples in the search for alternate socioecological futures. Respectively, Food Sovereignty is argued as a more viable pursuit. Based on 2 ½ months of ethnographic fieldwork, the contribution sheds light on the visions and activities of the Timorese NGO and agroecological movement Permatil. The insights illustrate how the adoption and re-interpretation of permaculture help to address crucial challenges in the country, while promoting its rich ecological and cultural diversity.

1. Contesting the Green Revolution and Its Promise of Food Security

More than 20 years ago, social and environmental activist Vandana Shiva (2000) published her book *Stolen Harvest: The Hijacking of the Global Food Supply*, elucidating how the capitalist expansion of a New Global Economy destroyed the livelihoods and habitats of many people and more-than-human beings. Drawing on numerous examples from India's agricultural sector, she explained how the introduction of monocultures, genetically modified organisms (GMOs), and agrochemicals drew farmers and other stakeholders of the local food systems into new forms of dependencies that threatened their modes of living—ensuring profit and abundance for some but creating loss and scarcity for many.

Whilst local markets were flooded with cheap imports and small businesses were displaced by industrial agriculture and fisheries, the quality and diversity of local foods declined significantly. Long-established food systems began to erode as small-scale producers and vendors were forced to abandon their livelihoods, along with local infrastructures, such as mills and shops. At the same time, the production and privatization of GMOs transformed varieties of seeds and plants into the intellectual property

of multinational corporations. These were increasingly distributed through governmental programs and sold to farmers, who had previously cultivated and saved their own seeds. As corporate profits and global control over the agricultural sector expanded, these farmers were deprived of their right to choose what to grow and how, while consumers lost sovereignty over what they eat. This loss of sovereignty was justified through narratives of rapidly growing global populations and increasing demands for accessible and affordable food—needs that were said to require industrialized agricultural systems (Lemos 2025; Shepherd 2019; Cid Aguayo/Latta 2015). Thus, although seeds and crops had long been regarded as shared sources of life and renewal, they increasingly became patentable commodities designed to secure corporate profit and advance under the promise of Food Security—meaning access to affordable food—for everybody (Shiva 2000: 84).

Describing this process as a "hijacking" of the global food supply, Shiva (2000: 9) noted how just ten multinational corporations came to dominate the global market for seeds, fertilizers, and pesticides. But this concentration of power was driven not only by corporations positioning themselves as pioneering 'life sciences' that eventually patented "life itself'. It was also furthered by the implementation of globalized free trade markets, which contributed to the criminalization of traditional farming practices, such as seed-saving and -sharing. As a result, many farmers were transformed "from producers into consumers of corporate-patented agricultural products" (Shiva 2000: 7). And today, the concentration has intensified even further, with control largely consolidated among four corporations: Bayer, Syngenta, Corteva, and BASF (CBAN 2026).

Beyond its socio-economic consequences, the widespread adoption of monocultures, agrochemicals, and GMOs has also had severe environmental impacts, including increased soil degradation, diminished biodiversity, and contaminated ecosystems (Cid Aguayo 2015; Shiva 2000). In response, Shiva (2000: 18) called for collective action, urging social movements worldwide to resist ecological destruction and what she terms an emerging "food totalitarianism". Pleading for a democratization of the food system, citizens should mobilize to reclaim their rights to save seeds, access nutritious food, protect biodiversity, and resist the "corporate theft from the poor and from nature" (Shiva 2000: 18). Finally, such concerns have been picked up by many NGOs and social movements across the world, which continue to highlight the social and ecological impacts of a Global Economy based on exploitative and imperial capitalism (Cid Aguayo/Latta 2015; Rosset/Martínez-Torres 2012). Respectively, central critiques include the outsourcing of environmentally harmful industries into countries of the Global South, the exploitation of natural resources and human labor, the disregard for local cultures and livelihoods, and the creation of structural dependencies that constrain people's and governments' meaningful participation in the Global Economy.

As Markus Wissen and Ulrich Brand (2017) elaborated vividly in *The Imperial Mode of Living: Everyday Life and the Ecological Crisis of Capitalism*, such dynamics have contributed to a global imbalance in which the effects of climate change are felt most strongly by countries in the Global South. These have become not only more prone to droughts, floods, and fires, but also suffer from persistent poverty and decreasing resilience. As they argue, the dominant mode of living in countries of the Global North cannot be universalized and instead depends on the continuation of social inequalities. That means some countries and people will have to be kept in dependency, and their respective struggles to provide the cheap resources and labor that are fundamental to the imperial mode of living.

In this context, it becomes crucial to ask whether integration into the Global Economy—as promoted by the World Trade Organization (WTO), the World Bank, and the International Monetary Fund (IMF)—can truly benefit those most affected, or whether alternative pathways should be considered. This becomes more evident when looking at the United Na-

tions' *Sustainable Development Goals* (SDG) agenda, which claimed in 2015 to end hunger and poverty, achieve global Food Security, and improve nutrition by 2030—problems that were primarily persistent in countries of the Global South (UN 2015: 17). Ten years later, however, around 28% of the world's population still experiences food insecurity, while high food prices affect half of the global population (UN 2025: 12). Surely, the SDGs represent non-binding, noble humanitarian values and cannot be enforced by anyone. Still, focusing on the agenda's financing model, it appears that it not only fails in its holistic pursuit but also fundamentally reinforces the same structures of inequality that keep reproducing and fostering such problems (de Vries 2019; Weber 2017). For instance, Juanjo Mediavilla and Jorge Garcia-Arias (2018) argue that the agenda's neo-liberal and technocratic underpinning promotes the commodification of basic needs, a focus on business models for environmental sustainability, neo-colonial visions violating human rights, and a reductionist idea of development as economic growth. In this vein, debates on international sustainable development are criticized as being depoliticized and reduced to a "mere technical debate on the establishment of indicators and objectives, and the measuring of results" (Mediavilla/Garcia-Arias 2018: 9).

Looking at the *World Food and Agriculture – Statistical Yearbook* 2024 of the Food and Agriculture Organization of the United Nations (FAO) with its colorful illustrations and concluding discussions of predominantly quantified data, such critiques appear reasonable. Accordingly, the global value of the agricultural sector rose by 89% between 2000 and 2022 to 3,8 trillion USD, whilst the use of pesticides increased by 70% over the same period (FAO 2024: xii). This indicates tremendous profits for the corporations that have been dominating this sector. Still, at the same time, it reports a rise in hunger, which still affects 9,1% of the world's population in 2023 (FAO 2024: 28). And while Asia is cited as the region with the most malnourished people, it is also the largest importer of cereals, largely produced by corporations in Europe and America (FAO 2024: 12). In this light, the concern of governments, social movements, and people in the Global South to become more resilient, reclaim their sovereignty, and avoid further dependencies becomes increasingly compelling (Lemos 2025; La Vía Campesina 2024; Rosset et al. 2011).

As Shiva (2000; 1993 [1991]) has convincingly argued, the so-called "Green Revolution"—promoted by corporations, organizations, and governments alike—primarily focused on introducing new agricultural products and techniques in the name of Food Security. By prioritizing monocultures and the use of heavy machinery and agrochemicals, traditional practices were marginalized and ultimately rendered inefficient and obsolete (Shepherd 2019). In the case of Timor-Leste, the founder of the NGO and growing movement *Permatil* describes how a gradual shift from subsistence farming to export-oriented agriculture was experienced as the imposition of supposedly superior techniques, tools, and knowledge—many of which proved inadequate to the local conditions (Lemos 2025). Echoing Shiva's critique, he explains how the Green Revolution shifted control of agricultural production and distribution from local farmers to multinational corporations, generating lasting environmental and social consequences that disrupted the livelihoods and resilience of Timorese rural communities. Against this backdrop, a closer look at Timor-Leste 26 years after the publication of "Stolen Harvest" appears highly explicating. Despite more than two decades of intensive engagement by international aid agencies and NGOs, widespread poverty and malnutrition persist in the country. This is especially striking given that around 75% of Timor-Leste's population lives in rural areas and continues to depend on small-scale subsistence farming. Facing this situation and being inspired by social movements in Latin America, Permatil-founder Eugenio "Ego" Lemos eventually calls for a shift from Food Security to Food Sovereignty, reminding us of Shiva's demand for a democratization of the food system.

The insights presented in this paper are based on 2 ½ months of ethnographic fieldwork in Timor-Leste

and aim to shed light on the inspiring action of an NGO that has evolved into a broader social movement and, based on ideas of permaculture, combines agriculture with broad societal engagement to foster a socio-ecologically promising and culturally grounded future. A guiding research question that finds its first explication in the following contribution has been how Permatil has adopted and re-interpreted permaculture for shaping visions and practices of development and education in the country. Additionally, the given analysis illustrates how such a movement can mobilize large numbers of people and significantly accelerate the rate, spread, and context-specific adoption of innovations through self-organized processes rooted in local realities (Rosset/Martínez-Torres 2012: 5). Respectively, elaborations on Permatil's work and additional references to three Permatil-associated groups that were visited during fieldwork—the CJP, TILOFE, and HADAEK—will underline the argumentation.

2. Timor-Leste: The transformation of agricultural practices and livelihoods

Looking back at 400 years of Portuguese colonial rule and 24 years of Indonesian occupation, Timor-Leste faced profound challenges in the post-independence period. Struck by traumas of armed conflict and the extensive destruction of infrastructures, issues such as malnutrition, illiteracy, unemployment, and poverty continue to shape everyday life and constrain development prospects (Shepherd 2019; Burns 2017; Carroll-Bell 2015; Hill 2007). Following the outbreaks of outrageous violence in 1999 —brought to an end by a UN-administered referendum that led to independence—more than 80% of schools and other essential infrastructures, "including irrigation canals, roads, bridges, and other equipment, tools, and seeds needed for productive agriculture" (Lemos 2025: 199) had been destroyed by the Indonesian military and military-sponsored militias. Large parts of the population were displaced, many remained malnourished, and basic systems of livelihood had collapsed (Carroll-Bell 2015: 316). In response, the period of UN-administration (1999-2002) and its aftermath saw a significant influx of international aid agencies and NGOs, which, since then, have played a central role in shaping the country's development through funding, projects, and consultation. Yet, as both international and local observers note, it is lamentable that "many desired outcomes have not materialized and a persistent series of human development challenges remain" (Carroll-Bell 2015: 313). As Lemos (2025: 205) strikingly observes, even "[t]wenty-five years after independence, the main priority of Timor-Leste is, arguably, food security"—or, as he critically reframes it, Food Sovereignty.

As Samuel Carroll-Bell (2015) argues, this is partly because development interventions and humanitarian aid in Timor-Leste have been shaped by the systematic application of Western ideas across a diversity of social and ecological contexts, often neglecting their local relevance. Particularly in rural development, project-based funding structures have frequently limited long-term impact. Designed around predefined objectives and timelines, such interventions often struggle to engage deeply with local needs and realities, resulting in outcomes that are difficult to sustain once external support ends (Rosset/Martínez-Torres 2012: 6). Consequently, many project outcomes and expectations appeared to local farmers and other rural stakeholders as donor-driven, prioritizing reporting requirements over close engagement with affected communities (Carroll-Bell 2015: pp. 324-326). Land, for instance, is largely governed through local customs in Timor-Leste and considered fundamental to the country's rich diversity of social identities and local worldviews. But the customary systems of land management and environmental care were often disregarded and overlooked (Lemos 2025: 188; Carroll-Bell 2015: 327). More broadly, Lemos (2025: 202) notes that agricultural policy debates have tended to privilege the voices of development agents and scientists, while marginalizing the knowledge and experiences of local farmers and landowners. Final-

ly, the Green Revolution imposed new agricultural standards that, by disrupting local livelihoods, furthered the erosion of communities' sovereignty and local agricultural knowledge and practices (Lemos 2025; Shepherd 2019). Local organic products, for instance, were gradually replaced as the governments of Indonesia and later Timor-Leste distributed GMO-seeds and agrochemicals free of charge to increase the country's agricultural productivity and the reliability of harvests.

Drawing on farmers' experiences, Lemos (2025) explains how these developments led to a decline in local crop diversity and pushed farmers toward dependence on corporate agricultural products and more export-oriented farming strategies. In consequence, many farmers could not keep up with these new costs, experiencing drastic challenges as their harvests failed. As the Permatil-founder reports on the case of one farmer struggling to pay for seeds and agrochemicals, his weeds would eventually grow taller than his rice, creating serious challenges for the farmer's livelihood. Having neglected their traditional agricultural practices, the farmers also reported a loss of seed and plant varieties. Furthermore, they often faced problems with the new products, as the introduced seeds were found to be hardly resilient or adaptable to local climates and generally low in pest resistance, thereby reinforcing their dependence on chemical pesticides (Lemos 2025: 203).

In the post-independence period after 2002, a lack of agricultural and food policies has further contributed to increases in malnutrition and environmental degradation, while promoting the widening of social inequalities and the further collapse of local food markets (Lemos 2025: 188). At the same time, unsustainable deforestation and farming techniques have intensified water scarcity, as ecosystems and their soils are further destabilized and degraded. As a small semi-island nation, Timor-Leste is already quite vulnerable to the impacts of climate change and is increasingly affected by extreme weather events (Burns 2017: p. 35; TL SDP 2011). During the dry season, droughts and access to clean water pose recurring challenges, while the wet season brings heavy rainfall that can trigger erosion, flooding, and destructive landslides on already degraded soils. No surprise, these conditions can have devastating consequences for farmers who depend directly on their land and harvests, with far-reaching impacts on livelihoods, health, and overall living standards (Lemos 2025: 188). As explicated in the following, agroecological movements and specifically permaculture hold potential in contributing to resilience against such challenges, as they promote critical re-thinking and alternative food systems.

3. Social Movements and Permaculture: From Food Security to Food Sovereignty

In the same year that Timor-Leste gained independence, Fritjof Capra (2004 [2002]) published his book *The Hidden Connections: A Science for Sustainable Living*, in which he seeks to unpack the challenges of sustainability through an interdisciplinary theory of complexity. Joining Shiva in her contestation of biotechnology and the New Global Economy, he accuses the WTO, World Bank, and IMF of counteracting their announced goals of fighting hunger and inequalities. Instead, these international organizations are criticized for facilitating the expansion of corporate control over agricultural policies, pushing people into increasingly restrictive forms of dependency. However, he also identifies sharpening contours of a resisting "worldwide coalition of grassroots movements" (Capra 2004: 219), composed of diverse groups, networks, and NGOs that promote alternative visions of dignity, ecological responsibility, and social justice—challenging the dominant paradigms of domination, exploitation, and unlimited growth.

Ten years later, agroecologists Peter M. Rosset and Maria-Elena Matrínez-Torres (2012: 3) added to this perspective by elaborating on rural social movements that have positioned themselves against the powerful global "food regime", sustained by influential financial institutions, education, politics, and

media. Deploring intensifications of unhealthy food production, inequalities, pollution, and hunger, these movements are proclaimed to emphasize the value of producing healthy local food, fostering environmental stewardship, preserving cultural heritage and livelihoods, and building resilience to climate change and global socio-economic inequalities. Amid ongoing resource depletion, soil degradation, biodiversity loss, and the erosion of human and more-than-human livelihoods, they continue to explore and defend more sustainable modes of living. In particular, agroecological initiatives have worked across regions to imagine and enact "alternate socioecological futures" (Cid Aguayo/Latta 2015: 398) that move beyond capitalist and technocratic growth paradigms.

Within this context, agroecology has been framed as a tool for reclaiming and reconfiguring "material and immaterial territories" (Rosset/Martínez-Torres 2012: 4), helping peasants to reduce their dependency on external inputs, volatile markets, and debt. The movement's transnational networks and branches facilitate horizontal knowledge sharing, which enables farmers to learn from experiences and experts around the globe. This allows them to experiment with and adapt that knowledge and related techniques to their local socio-ecological contexts (Cid Aguayo/Latta 2015: 403). Additionally, these networks support the formation of shared agendas, collective resistance, and the articulation of political demands—thereby amplifying voices that are often marginalized in dominant policy arenas.

Eventually, many movements advocate a more comprehensive approach beyond the narrow concept of Food Security, particularly if it is based on monocultures, GMOs, and food imports. As the agroecological movement—and the world's biggest farmers' and activists' network—*La Vía Campesina* argues, this food is produced in a system that favors social inequalities and ecological devastation (La Vía Campesina 2024; Cid Aguayo/Latta 2015). Finally, corporate-controlled food systems not only depend on costly and environmentally harmful agricultural inputs, such as chemical pesticides and fertilizers, but are also criticized for being "de-contextualized and de-linked from the specificities of local ecosystems and social relations" (Rosset/Martínez-Torres 2012: 2). Thus, Lemos (2025: 193) states that "problems of hunger and malnutrition cannot […] be divorced from the issue of what is produced, how it is produced, and for whom it is produced". From this perspective, food systems should prioritize local production and be embedded in specific environmental and social contexts (Lemos 2025: 190).

Referring to the case of Timor-Leste, Lemos (2025: 193) reports that even humanitarian programs such as Food Aid have, at times, been used for opening domestic markets to imports that ultimately undermine local food systems and reinforce dependency. As he argues, agricultural imports have often been "dumped" on countries of the Global South, reshaping both farming practices and dietary patterns in ways that often do not fit local contexts (Lemos 2025: pp. 190-192; La Vía Campesina 2024). What can be observed today is that many people in Timor-Leste increasingly rely on cheap imported foods—from rice and vegetables to plastic-cupped instant noodles and frozen chicken. As Timorese farmer and founder of the Centro Juventude Permakultura (CJP), Ananias Benevides, explained in one of our conversations, he often observes how the coffee farmers in his region would sell their organic products only to purchase the cheap imports of packaged coffee from neighboring Indonesia, one of the country's former colonizers. In contrast, historical accounts suggest that Timorese agriculture—particularly in pre-colonial and early colonial periods—used to be relatively "sustainable, adaptive, and culturally embedded, ensuring food sovereignty for diverse ethnic groups" (Lemos 2025: 194). This is not to romanticize the past, but rather to highlight that, despite decades of international intervention and technological development, many people in Timor-Leste continue to experience malnutrition and increasing market-dependencies.

In this light, Lemos (2025) refers to La Vía Campesina (2024) in calling for a shift from Food Security to *Food Sovereignty*. First introduced at the 1996 World Food

Summit, this concept emphasizes the right of communities to define their own agricultural and food systems, focusing on modes of production, distribution, and consumption in relation to local needs and conditions. Another agroecological movement and framework that aligns closely with these principles of Food Sovereignty is *permaculture*. Developed in the 1970s by the Australian scientists and environmental activists Bill Mollison and David Holmgren (1978), the concept merges the terms "permanent", "agriculture", and "culture" to describe a holistic framework for sustainable living (Holmgren 2017; Veteto/Lockyer 2008). Since then, it has inspired a wide range of networks and movements, including the international Permaculture Association, the Transition Towns Movement in the United Kingdom (Hopkins 2008), and Permatil in Timor-Leste. Today, permaculture is applied in diverse contexts worldwide and has attracted increasing academic attention (Steinhäuser/Kreß 2025; Ferguson/Lovell 2015). Rooted in Tasmanian indigenous knowledge and science alike, the framework suggests learning from nature as well as the establishment of infrastructures and livelihoods that acknowledge ecological limits and the interdependence of human and more-than-human worlds. Following Mollison's and Holmgren's (1978) conceptualizations, which have been widely adopted as the theoretical core of permaculture, it comprises "People Care, Nature Care, Fair Share" as its ethics and 12 principles derived from nature's teachings (Permaculture Principles 2026; Holmgren 2017). These principles fundamentally comprehend a "nature-based self- and other-awareness, the recycling and reuse of naturally existing energies and materials, the downscaling of consumption patterns, waste reduction and collaborative practices, diversity and slowness, the valuing of edges and margins, and embracing technologies of change" (Stodulka 2024: 2).

While originally focused on small human settlement design, permaculture has by now evolved into a global and highly diverse movement that offers differing interpretations and applications at various scales. Practically, its principles are often integrated into broader frameworks such as agroecology (Ferguson/Lovell 2014) or nature-based solutions (Demozzi et al. 2024), sometimes as a strategy to engage with wider policy discourses and funding structures. This raises important questions about whether its holistic principles can be maintained within such contexts. Sometimes referred to as "small middle- and upper-class movement" (Cid Aguayo/Latta 2015: 401), associated with relatively privileged social groups, permaculture also raises concerns about its broader applicability (Ferguson/Lovell 2015). Especially when linking it to established permaculture initiatives that build on land ownership, vast ecological knowledge, and long-term investments of labor and livelihood, this becomes quite evident. With such demands, it appears uncertain whether it has the potential to contribute to socio-ecological transformations at large scale and, eventually, to 'feed the world'. However, as explicated subsequently, the case of Timor-Leste suggests a rather promising perspective. Here, permaculture appears as a flexible and integrative approach directly addressing the livelihoods of most people. Through the work of Permatil, it has already contributed to the widespread, innovative adoption and institutional recognition of agroecological practices, demonstrating permaculture's potential for spurring social, ecological, and political transformation (Stodulka 2024, 2020).

4. Permatil: Transforming Timor-Leste into the World's first 'Permaculture Country'

In line with Rosset's and Martínez-Torres' (2012: 4) characterization of peasant movements in Latin America, Permatil promotes rural peasant futures grounded in sustainable farming practices, biodiversity, and the production of healthy local foods through permaculture. Since its foundation in 2002, Permatil has evolved from an NGO into a broader social movement that has spread across Timor-Leste and begun to create impacts beyond the country's borders. As its founder explains, Permatil "has been implementing

permaculture in every district and advocating for the Timorese government to adopt permaculture, including regenerative agriculture, as the pathway for sustainable development in Timor-Leste" (Lemos 2025: 201). Recognizing the migration of young people to urban areas and abroad as both a symptom of limited rural opportunities and a threat to the country's cultural heritage, Permatil seeks to strengthen local perspectives and livelihoods. It aims to support rural communities in developing locally grounded strategies that enhance Food Sovereignty and long-term resilience. In this sense, permaculture—much like its broader framework of agroecology—can be understood as a "socially activating tool for the transformation of rural realities through collective action and as a key building block in the construction of food sovereignty" (Rosset/Martínez-Torres 2012: 7).

Together with its sister organizations, Permatil Global and the Assosiasaun PermaYouth Timor-Leste, Permatil has organized numerous workshops, trainings, and so-called *PermaYouth camps*, often mobilizing several hundred participants to learn about and take part in permaculture activities (Stodulka 2024). Guided by the slogan "Planting Water, Growing Communities" (Permatil 2026), these activities include not only locally embedded farming techniques but also measures to prevent destructive landslides, soil erosion, and water scarcity. Held at regional, national, and now increasingly international levels (see IPYC 2026), especially the PermaYouth camps currently emphasize water conservation and landscape restoration to secure water and strengthen agricultural productivity and ecosystem resilience. Participants engage in hands-on practices such as digging retention ponds, terracing, composting, producing organic fertilizers, saving seeds, and intercropping. Here, Permatil promotes a rather practical approach of experiential learning, rather than focusing on neatly transmitting the ethics and principles of permaculture. As an interviewed representative highlighted, this reflects that, for many people in Timor-Leste, "seeing is believing"—something that Rosset et al. (2011) also experienced with Cuban farmers. Building on this principle, Permatil hopes that participants will mobilize their rural communities, share their acquired knowledge, and independently continue applying the learned permaculture techniques within their own local projects.

In addition, the publication of *The Tropical Permaculture Guidebook*, which is available for free or against donation, provides a strong example of horizontal knowledge sharing within agroecological movements (Cid Aguayo/Latta 2015). While the Guidebook creatively illustrates how the framework can be translated into locally relevant contexts, the camps and trainings additionally demonstrate the innovative scope and impressive scale of permaculture application in Timor-Leste. Through these efforts, Permatil not only positions itself as a hub for tropical permaculture but also advances its broader vision of transforming Timor-Leste into the world's first 'permaculture country'. This vision strives for a healthy and prosperous life, values cultural continuity, fosters local resilience, and advocates economic competition for product quality rather than quantity. This would entail, for instance, valorizing the country's rich cultural heritage, traditional knowledge, and biodiversity in any developmental efforts.

In this sense, the integration of school gardens into the national school curriculum on 'Arts-and-Culture' presents a significant step that involves widespread teachings on permaculture and is being guided by adherents of the Permatil movement (Stodulka 2020). As the youth group HADAEK explained during a visit to their site in the rural area of Viqueque, their members alone regularly visit three nearby schools and advise them on their school garden practices. Incorporating the values of Permatil, the group's name translates from the national language Tetun into 'improve the environment, develop agriculture and the economy of the community'. Lemos—who also consults the Ministry of Education—has played a key role in shaping the curriculum, placing strong emphasis on culturally embedded learning and on developing practical skills, such as critical and creative thinking, collaboration, communication, and investigation. As

he stated in an interview, "this is the ability that we want to build up in the new generation to come with this foundation of the curriculum"—an ambition that, from his perspective, can be effectively encouraged through permaculture.

Picking up on the activism of the La Vía Campesina network and its critique of Food Security, he states: "Food sovereignty, at its heart, is about communities having the right to define their own agricultural and food policies" (Lemos 2025:199)—and "places people, rather than corporations or markets, at the center of decision-making" (Lemos 2025: 189). Educational initiatives such as school gardens and youth camps thus serve not only as sites for knowledge transmission, but also as spaces for collective sharing and learning, the revitalization of agricultural practices, and the strengthening of community engagement. These efforts also respond to broader development challenges in Timor-Leste. As education consultant Robin Burns (2017: 38) notes, engaging young people and linking education to meaningful livelihood opportunities and "realistic job-creation" is crucial for Timor-Leste. In this context, agriculture can become an attractive and respected field of work, encouraging "better-educated, innovative and hard-working young men and women" (Hill 2007: 7) to take on leadership roles in rural communities. Strengthening local capabilities in agriculture may empower communities to ensure their access to "safe, nutritious, and culturally appropriate food," while also enhancing the country's sovereignty and resilience to climate change (Lemos 2025: 206).

With growing popularity, the NGO has gradually transformed into a movement that transcends its formal structures, connecting many individual adherents and a variety of projects and organizations that have grown in close collaboration. These not only mobilize rural communities and advocate for Permatil's action at the governmental level, but also create small-scale economies and livelihoods around permaculture, paying close attention to local demands, knowledge, and customs. The Centro Juventude Permakultura (CJP 2026), HADAEK, and TILOFE (Timor-Leste Organic Fertilizer) are only some examples of growing rural youth groups that currently establish permaculture education centers throughout the country, practicing and spreading Permatil's vision. While the CJP is primarily focused on growing food and saving seeds, TILOFE has already become one of the country's biggest producers of organic compost and fertilizers. By, for instance, encouraging communities to collect and supply organic materials, their activities are now generating further income opportunities and promoting local employment.

Looking ahead, all three groups aim to become spearheads of ecological tourism that focuses on healthy food, sustainable livelihoods, cultural experiences, and ecological care—or, following the ethics of permaculture: People Care, Nature Care, and Fair Share. Apparently, this also aligns with Timor-Leste's general objectives of strengthening its agriculture and tourism sectors and reducing its dependence on oil profits (TL SDP 2011). Accordingly, these projects can become socio-ecological role models for truly sustainable agriculture and tourism that preserve Timor-Leste's rich natural diversity and its local cultures' sovereignty. In that vein, Timor-Leste may really become the first 'permaculture country'. A country that produces and consumes organic food rather than relying on cheap imports. And a country that fosters an economic model that prioritizes socio-cultural and ecological contexts over mere profit pursuits—leading as an example for other societies striving for alternate, and ultimately just, socioecological futures.

5. Concluding Remarks

By shedding light on the critique of social, agroecological movements and scientists that have opposed common agendas for development and Food Security, the given insights have illustrated how alternate socioecological futures are not only envisioned but also enacted in the context of Timor-Leste. In conclusion, I want to present some approaches to evaluate the possible meaning of agroecology and permacul-

ture for the country's transformations, also pointing to further research possibilities.

Debates on agroecological farming have been rallied by the questions of how to "scale out" and "scale up" the successful experiences around agroecology (Rosset/Martínez-Torres 2012: 5). While scaling *out* agroecology means to succeed in a wide-ranging adoption of agroecological practices by farmers, scaling *up* agroecology aims at institutionalizing their support in policies and institutions. In the case of Timor-Leste, initiatives such as the PermaYouth camps, trainings, and the Guidebook can be understood as efforts to scale out permaculture, as reflected in the emergence of numerous youth groups across the country. At the same time, the integration of school gardens into the national school curriculum presents a particularly noteworthy and unique example of scaling up. Addressing many people in the camps and school gardens, these initiatives have contributed significantly to the widespread adoption of permaculture-inspired practices. Encouraging self-organized action, this helped in turn to strengthen Food Sovereignty and enhance the resilience of rural communities in Timor-Leste. The growing visibility of these developments is reflected not only in recognition by governmental institutions and local NGOs but also in increasing international attention from scientists, politicians, and permaculturalists.

In this context, permaculture does not appear confined to a small, middle-class movement of relatively privileged people. Rather, it emerges as a flexible and inclusive framework for horizontal learning, socio-culturally and ecologically adaptive development, and broad societal engagement, helping to mobilize a broad spectrum of people through ethically and collectively grounded action. And while permaculture itself is not a new concept or innovation, its inclusive re-interpretation and nationwide diffusion—driven by the work of Permatil—represent an innovative approach that can inspire individuals, institutions, and governments alike in their search for socio-ecologically viable futures grounded in mutual respect, biodiversity, and shared well-being.

Understanding that imagining and facilitating development processes demands the negotiation of "meaningful frameworks of activity" (Carroll-Bell 2015: 338), permaculture can serve as a boundary object that facilitates collaboration across different actors and knowledge systems (Steinhäuser/Kreß 2025). At the same time, however, the scaling up of grassroots movements such as Permatil is not devoid of the structural constraints of project-based funding. Given that permaculture, especially in Permatil's scope and scale, is inherently long-term and process-oriented, its implementation depends on sustained engagement, continuous learning, and adaptive practices. Therefore, it remains to be seen whether the framework's large-scale application can be maintained while remaining committed to its core ethics and principles. As the Vice President of the Assosiasaun PermaYouth Timor-Leste argued in one of our conversations, he would often rather follow the "lifeline" than the "deadline" of funded projects. However, tight timeframes and report- rather than impact-oriented funding schemes are often experienced as constraints to his and his colleagues' work.

Still, as awareness and practical knowledge of permaculture continue to grow, the question of whether permaculture could be scaled up and out appears in a new light. This surely needs time, yet it might present a more viable approach to Food Sovereignty and the country's vulnerability to climate change and fluctuations in the Global Economy than exploitative and growth-oriented agendas. This is particularly relevant in light of Timor-Leste's recent accession to ASEAN, which is likely to increase pressure on Timor-Leste to meet certain production standards, in terms of quantity and industrialized techniques, and expand its export-oriented agriculture. It can be anticipated that this will remain a difficult task for such a small country to comply with international political frameworks and economic demands. As suggested by Permatil members, an alternate socio-ecological future may depend on positioning the country's agricultural production in terms of quality rather than quantity. In addition, a 'soft' ecological

tourism should be promoted in ways that preserve, rather than commodify, the country's biodiversity and cultural heritage. In this context, Lemos' (2025: 206) critique, that integration into the global economy has undermined local resilience and livelihoods, underscores the importance of exploring alternative development pathways.

Turning again to Carroll-Bell (2015: 314), in some concluding reflections on potential further research, ethnographic, sociological, and anthropological research can help in tracing the production and negotiation of development agendas and their meanings within local contexts. Upcoming research should examine critical perspectives on the relationship between climate change and development, as well as ideas of context-based development and stakeholder participation. Social movements such as Permatil offer valuable entry points for understanding local struggles and competing visions of development that emerge not only in response to but also alongside the agendas of governments and international organizations. As such, they can highlight and elucidate the importance of context-sensitive, participatory, and ecologically embedded approaches to development in an era of ongoing socio-ecological transformations and crisis.

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