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By Jose Ma. Luis Montesclaros and Kayven Tan

SYNOPSIS

Timor-Leste's recent entry into ASEAN offers a new opportunity to strengthen regional food security by offering a glimpse of alternative models for food resilience, especially amid ongoing disruptions to chemical fertiliser supplies stemming from the conflict in the Middle East.

COMMENTARY

Disruptions to chemical fertiliser supplies amid [Middle East tensions](#) have [intensified calls](#) across Southeast Asia for a transition toward organic alternatives. This remains very much an ambition for the ASEAN region, which has an organic coverage of less than 0.5 per cent of its total agricultural land and less than 1 per cent of its arable land, according to [UN Food and Agriculture Organisation \(FAO\) statistics](#).

Timor-Leste, ASEAN's newest member, offers a striking contrast, where organic fertiliser use already covers 9.2 per cent of its total agricultural area and 28 per cent of its arable land. Could the country, despite its lower per capita income, serve as a model for bottom-up societal resilience amidst ongoing disruptions to chemical fertiliser supplies?

Organic by Default

Timor-Leste's higher use of organic fertilisers was not by design but by [necessity](#). It resulted from the country's limited access to chemical fertilisers, due to economic constraints. According to IMF statistics, its GDP per capita is approximately [USD 1,500](#) annually, comparable to Myanmar's. This places it among the lowest-income countries in ASEAN.

The country likewise holds limited currency reserves – with a current account [deficit](#) of close to USD 700 million, mostly due to importing more than it exports, which amounts to 32 per cent of its GDP. Its government also has limited fiscal capacity to support its farmers, and is reliant on external support, with net borrowing amounting to more than [half of its GDP](#).

Given such constraints, over [18 per cent](#) of its population was undernourished in 2022-24, more than triple the average level in ASEAN of approximately 5 per cent. This figure also corresponds to the poverty rate, with [16 per cent](#) of the population living below the poverty line and unable to afford the food needed for healthy and active lifestyles.

Bottom-Up Community Resilience: Timor-Leste's Coffee Story

These challenges, however, do not preclude the country from serving as a role model for other ASEAN countries in organic farming. Behind what appears to be underdevelopment lie indigenous sources of resilience most clearly observable in its coffee sector. Notably, this resilience is rooted in cooperative, non-market mechanisms that work alongside, rather than against, market mechanisms, for instance, through the community-organised Cooperative Café Timor (CCT, or [Timor-Leste Coffee Cooperative](#)).

While Timor-Leste is primarily a petrostate exporting crude oil and natural gas, its largest non-oil export is coffee. Unlike normal trade where coffee is left to volatile market prices, the CCT in Timor-Leste, formed in 2000, instead provides farmers with guaranteed coffee prices that are [40 per cent above market prices](#). Such benefits are enabled by the Fairtrade Network of Asia and Pacific Producers (FNAPP), which is exclusive to developing countries and to which the CCT is a party. The cooperative likewise provides farmers with the inputs for their production as well as extension services such as training in implementing good agricultural practices ([GAP](#)) in organic farming.

Beyond these, the CCT also draws broad societal benefits from the FairTrade revenues by hosting a string of [seven](#) “Clinik Café Timor” clinics that provide free health services to smallholder families. These clinics, supported in part by the [Timor-Leste Ministry of Health](#), treated more than [11,000 patients](#) a month during the COVID-19 pandemic.

Timor-Leste's experience suggests a broader, counterintuitive insight that countries too poor to industrialise their agricultural sectors may now hold a structural advantage. Free from high chemical dependence in their food systems and supported by grassroots, community-governed supply chains, they offer a model of resilience that wealthier economies are now trying to replicate amid increasing global supply chain instability. This model is not without precedent. [India's Amul cooperative](#) was formed in 1946 to eliminate the exploitation of farmers and returns 85 per cent of earnings to its 3.6 million farmer-members. The CCT model thus holds significant potential for replication across the region.

Forward-Looking Challenges Amidst Climate Change

As many farms in Timor-Leste are organic, coffee is primarily cultivated under native shade trees. These trees buffer plants from extreme weather and reduce temperatures, which in turn limits conditions that favour pests and diseases, thereby providing a form of natural pest resilience.

The most common variety, Hibrido de Timor (HdT), is a [naturally occurring](#) hybrid of arabica and robusta that is heat-tolerant and can be grown in warmer, low-altitude areas. HdT also has higher resistance to fungal diseases such as coffee leaf rust and pests such as coffee berry borers, a destructive beetle species.

Climate change poses a growing threat to HdT's resilience and to coffee production in Timor-Leste more broadly. Warmer and more humid conditions [increase](#) the risk of coffee berry borers and coffee leaf rust. At the same time, heat stress can reduce yields and bean quality over time, even for a highly resilient variety like HdT, especially without additional climate adaptation measures.

The frequency and intensity of droughts and heavy rain are [projected to increase](#), further disrupting production. These challenges are further compounded by ageing coffee trees and limited agronomic knowledge among smallholder farmers. Declining yields could threaten rural livelihoods and Timor-Leste's position in the speciality coffee market, especially since coffee is an important source of income for approximately [27.5 per cent of households](#).

Addressing these climate risks will require coordinated adaptation, with CCT central to this effort. Cooperative membership is [positively associated with climate-smart agriculture \(CSA\) adoption](#), as cooperatives provide platforms for knowledge sharing, technical support and peer learning. CCT could scale up training in climate-smart practices, facilitate replanting of ageing trees and distribute early pest-warning information to members. It could also partner with universities to further [improve the HDT variety's resistance](#) to future environmental stressors. These measures could help smallholders absorb climate shocks while protecting Timor-Leste's standing as the origin of speciality coffee.

A Dual Track Path for Timor-Leste's Agricultural Development

Timor-Leste, which joined ASEAN in 2025, is well-positioned to catch up, with [64 per cent](#) of its population under 30. Among the first beneficiaries of integration into the ASEAN Free Trade Area (AFTA) will likely be Timor-Leste's agricultural sector, which is a key source for jobs and food security for [52 per cent](#) of its population and [63 per cent](#) of poorer households.

A critical question today is whether the CCT model will eventually be replaced by market-driven trade within AFTA. On the one hand, the 4.5 per cent annual increase in ASEAN's [regional trade](#) from 2010 to 2019 has coincided with a significant reduction in poverty, from 19 per cent in 2010 to less than 14 per cent in 2019. Yet, the growing instability in global fertiliser, oil and food supply chains in the 2020s reveals the limits of purely laissez-faire approaches.

The question should thus be how to step up Timor-Leste's CCT as an alternative model that prioritises farmers' lives and livelihoods through cooperative-based institutions within market-based mechanisms. Economic liberalisation does not require dismantling cooperative infrastructure, as was the case in India's Amul cooperative. Crucially, scaling up such approaches today implies extending the FairTrade approach beyond coffee to other agricultural exports, such as [vanilla, coconuts, and candlenuts](#).

Towards a More Resilient ASEAN Food System

Timor-Leste's entry into ASEAN offers a glimpse into what is possible for ASEAN's food security framework amid the dual pressures of supply chain fragility and the uneven gains of regional trade integration. Despite its current economic constraints, it presents an opportunity to build agricultural resilience without relying heavily on chemical inputs, especially as more developed ASEAN economies increasingly face the vulnerabilities of input-dependent agriculture.

The CCT model could inform broader regional frameworks for cooperative-based food security in ASEAN, not as a replacement for free-market trade, but as its evolution towards a regional architecture that treats community-governed supply chains as strategic assets. Far too often, such traditional, indigenous innovations are seen as signs of backwardness or symptoms of underdevelopment; yet Timor-Leste's experience during COVID-19 proved that such mechanisms can serve as societal anchors amidst turbulent currents of change.

At the regional level, ASEAN could incorporate elements of the CCT model into its broader food security architecture by creating novel "FairTrade pacts" in collaboration with its Plus Six Partners. [Australia and New Zealand](#), as key players in the FairTrade movement, could share their expertise to strengthen local procurement networks and support sustainable agricultural practices. Such measures would complement existing efforts to enhance regional food resilience while reducing dependence on volatile global input and commodity markets.

It would be wise and timely to capitalise on what Timor-Leste's ascension offers – a chance to strengthen ASEAN's food system, taking a step back to take two steps forward.

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