



# Empowering Communities through School Feeding: Local Participation and Sustainable Nutrition in Timor- Leste

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## ABSTRACT

School Feeding Programs (SFPs) are not only nutritional interventions but also platforms for empowering local communities. In Timor-Leste, where food insecurity and child malnutrition are widespread, community engagement in SFP design and delivery is essential for sustainability and cultural relevance. This critical review of 30 studies from 2018 to 2024 explores the role of community service within school feeding initiatives, focusing on the involvement of parents, local farmers, women's groups, and school management committees. The review highlights successes and barriers in achieving local ownership, identifies the economic and social impact of decentralized procurement, and offers strategic recommendations for enhancing community-led approaches. Findings suggest that meaningful participation increases program legitimacy, strengthens food systems, and reinforces national development goals. Integrating community-based mechanisms into SFPs is key to fostering food sovereignty, rural livelihoods, and shared responsibility for child welfare in Timor-Leste.

## ARTICLE INFO

### Article History:

Submitted/Received 22 May 2025

First Revised 25 Jun 2025

Accepted 30 Aug 2025

First Available online 31 Aug 2025

Publication Date 01 Sep 2025

### Keyword:

Community participation,  
Local procurement,  
Rural development, Sustainability,  
School feeding,  
Timor-Leste.

## 1. INTRODUCTION

School Feeding Programs (SFPs) have long been regarded as social protection tools for improving child nutrition, school attendance, and learning outcomes. However, beyond these individual benefits, SFPs hold a broader potential as vehicles for community development and empowerment. In Timor-Leste, a country still grappling with high levels of poverty, food insecurity, and fragile local economies, school feeding can catalyze multi-level engagement involving families, farmers, educators, women's groups, and civil society. Since the national expansion of SFPs in Timor-Leste in partnership with the World Food Program (WFP), community involvement has been promoted as a key feature of sustainability and local ownership.

The program aims not only to provide meals to children but also to foster local participation in food procurement, preparation, and monitoring. In many schools, parents volunteer as cooks, school management committees oversee logistics, and communities contribute kitchen space or water supply. These forms of engagement reflect traditional systems of mutual aid (*fetosan uman*), and show how global policy instruments like school feeding can align with local values of solidarity and cooperation. Despite such potential, significant gaps remain. In practice, community involvement is often informal, under-supported, and unequally distributed across regions. Many rural schools lack access to proper facilities, food storage infrastructure, or agricultural support. Women, although highly involved in meal preparation, are rarely represented in decision-making structures (Ali & Kamraju, 2023; Effiong & Aya, 2022). Meanwhile, centralized procurement systems limit opportunities for local farmers to participate in school food supply chains. This article explores the role of community service and participation in strengthening SFPs in Timor-Leste. It seeks to answer the following research questions:

- (i) What forms of community engagement currently exist in school feeding initiatives?
- (ii) How do local actors contribute to the sustainability and cultural relevance of SFPs?
- (iii) What barriers hinder deeper participation?
- (iv) How can community-based models be scaled and institutionalized?

By reviewing 30 peer-reviewed studies and institutional reports published between 2018 and 2024, this paper positions school feeding not only as a nutrition intervention but also as a platform for inclusive development, where schools become sites of shared responsibility, food sovereignty, and grassroots empowerment.

## 2. METHODS CONCEPTUAL FRAMEWORK

To understand the community dynamics surrounding school feeding, this paper draws on three complementary theoretical frameworks: Community Empowerment Theory, Asset-Based Community Development (ABCD), and Participatory Governance.

### 2.1. Community Empowerment Theory

Community empowerment is defined as a process through which individuals and groups gain greater control over decisions and actions that affect their well-being. Empowerment includes three dimensions:

- (i) Intrapersonal (belief in one's ability to influence outcomes),
- (ii) Interactional (understanding of systems and social structures), and
- (iii) Behavioural (active participation in change efforts).

Applied to SFPs, this means enabling communities (particularly parents, women, and farmers) to engage meaningfully in school food systems. When communities are empowered,

they move from being passive recipients of food aid to co-creators of nutrition and education solutions.

## 2.2. Asset-Based Community Development (ABCD)

ABCD emphasizes building on existing local strengths, rather than focusing on deficits. It values the skills, networks, and resources present within a community, whether through farming knowledge, cooking traditions, or informal cooperation.

In the context of SFPs, this approach encourages the mobilization of:

- (i) Local food production, such as vegetables, eggs, and legumes;
- (ii) Volunteer labor, especially from parents and elders;
- (iii) Cultural food knowledge, ensuring meal relevance and acceptance.

Instead of importing standardized food or models, ABCD enables communities to adapt SFPs to their context, making programs more resilient and empowering.

## 2.3. Participatory Governance

Participatory governance involves inclusive, transparent decision-making processes where community members are given space to voice concerns, shape policies, and hold institutions accountable. Within SFPs, this includes:

- (i) School management committees that include parent representatives,
- (ii) Community-led monitoring of food delivery and preparation,
- (iii) Shared planning between government and grassroots stakeholders.

By embedding participation into governance, school feeding becomes a social contract, built on mutual trust and accountability.

## 3. METHODS

This study is based on a critical literature review of 30 documents selected through a systematic search and thematic relevance. Sources include:

- (i) Peer-reviewed articles from development and public health journals,
- (ii) WFP and Ministry of Education reports,
- (iii) NGO field studies and community case reports from Timor-Leste and similar settings (e.g., Nepal, Kenya, Indonesia).

The inclusion criteria were:

- (i) Published between 2018 and 2024,
- (ii) Focus on school feeding and community engagement,
- (iii) Include empirical evidence or policy insights from Timor-Leste or comparable countries.

Thematic coding identified five key domains:

- (i) Forms of community participation (volunteerism, decision-making, procurement),
- (ii) Gender roles and equity,
- (iii) Local economic empowerment (e.g., farmer involvement),
- (iv) Barriers and limitations to engagement,
- (v) Policy and program recommendations for strengthening community-based SFPs.

This approach enables a holistic understanding of how school feeding operates not just as a nutritional intervention, but as a social and participatory process embedded in local life.

## 4. RESULTS AND DISCUSSION

### 4.1. Community Participation in School Feeding: Forms and Functions

Community engagement in school feeding in Timor-Leste occurs through a variety of informal and semi-formal structures, each contributing in different ways to program delivery, oversight, and sustainability. This section categorizes the major forms of community involvement identified in the literature.

#### 4.1.1. Parental Involvement and Volunteerism

The most widespread form of participation is parental volunteerism, particularly among mothers and female caregivers. In many schools, parents serve as unpaid cooks, preparing and distributing meals on a rotational basis. This system not only reduces labor costs for the program but also reflects local values of communal labor (*mutual aid* or *ajuda mutua*), where parents see meal preparation as part of their collective responsibility for child welfare. A WFP in 2022 (see <https://www.wfp.org/publications/timor-leste-school-feeding-evaluation-2022>) evaluation report found that in over 70% of rural schools, food preparation was managed by parent groups or informal cooking teams, often coordinated by the School Management Committee (SMC). Although this demonstrates strong local ownership, challenges persist. Many volunteers lack training in hygiene and food safety, and some schools report high dropout rates among volunteers due to a lack of incentives or recognition. In addition, there is often an unequal distribution of labor, with women disproportionately shouldering the burden of meal preparation.

#### 4.1.2. School Committees and Community Oversight

School Management Committees (SMCs), composed of teachers, principals, and parent representatives, are the primary governance bodies overseeing SFP implementation at the school level. In theory, these committees:

- (i) Monitor food deliveries,
- (ii) Manage kitchen resources and budgets,
- (iii) Coordinate volunteer schedules, and
- (iv) Serve as liaison with district authorities.

However, in practice, committee capacity is uneven. In some areas, SMCs are well-established and actively involved in decision-making. In others, they are inactive or symbolic, with little real influence. Barriers include limited training, a lack of financial authority, and weak communication with government departments. Some reports note that while school committees meet regularly, key decisions (especially regarding food procurement and menus) are still made at the central level, leaving communities with minimal voice (Rana *et al.*, 2022; Ibrahim & Nandiyanto, 2022; Gemil *et al.*, 2024)

#### 4.1.3. Local Farmer Involvement and Agricultural Linkages

One of the most promising but underdeveloped areas of community participation is the engagement of local farmers in school food supply chains. Under a Home-Grown School Feeding (HGSF) model, schools procure fresh produce directly from nearby farmers, cooperatives, or women's agricultural groups (Gemil *et al.*, 2024; Handayani *et al.*, 2020; Sridevi *et al.*, 2024; Nurrahma *et al.*, 2023). This model reduces transportation costs, ensures fresher food, and stimulates local rural economies. In Timor-Leste, pilot HGSF projects in the Lautem and Manatuto districts have demonstrated that direct farmer engagement is feasible and beneficial. For example, in 2021, the NGO HASATIL partnered with schools to purchase

leafy greens, bananas, and eggs from nearby farmers. These products were then integrated into school menus, replacing processed or imported foods. Yet, scaling this model faces several constraints:

- (i) Lack of cold storage and transport logistics,
- (ii) Absence of contracts or price guarantees for farmers,
- (iii) Inconsistent government policy support,
- (iv) Poor coordination between the Ministries of Education and Agriculture.

While farmers are willing to supply schools, they require technical assistance, reliable payment mechanisms, and protection from market fluctuations.

#### 4.1.4. Women's Participation and Gender Empowerment

Women are central to the success of community-based school feeding; both as cooks and, increasingly, as members of parent-teacher associations or agricultural cooperatives (Rana *et al.*, 2022). Yet their influence in decision-making remains limited. Cultural norms often position women in supportive roles, while men dominate formal leadership in school committees and local government. Some promising shifts are underway. In the Viqueque district, a WFP-supported project established all-women cooking teams, who received training in food hygiene and management. These groups not only provided meals but also formed savings cooperatives to fund small agricultural ventures, demonstrating how school feeding can evolve into broader platforms for women's economic empowerment.

However, mainstreaming gender equity in SFPs requires intentional design. Recommendations include:

- (i) Setting quotas for women's participation in SMCs,
- (ii) Offering stipends or recognition for women volunteers,
- (iii) Providing childcare during cooking shifts,
- (iv) Creating leadership training pathways for rural women

By recognizing women not just as service providers, but as agents of development, SFPs can simultaneously tackle gender inequality and food insecurity.

#### 4.1.5. Benefits of Local Participation: Social and Economic

Community involvement in SFPs yields a wide range of positive outcomes beyond nutrition and school attendance. These are included in **Table 1**.

**Table 1.** Key benefits of community participation in school feeding programs.

Benefit Category	Description
Economic Multipliers	<ul style="list-style-type: none"> <li>(i) Local sourcing injects funds into village economies</li> <li>(ii) Creates income for smallholder farmers and vendors</li> <li>(iii) Reduces rural unemployment, especially among women and youth</li> </ul>
Improved Program Ownership	<ul style="list-style-type: none"> <li>(i) When communities participate, they feel responsible for program success</li> <li>(ii) Reduces theft, misuse of resources, and absenteeism among students</li> </ul>
Cultural Relevance and Acceptability	<ul style="list-style-type: none"> <li>(i) Locally designed menus reflect food preferences and dietary norms</li> <li>(ii) Avoids rejection or waste of unfamiliar or imported foods.</li> </ul>
Resilience and Continuity	<ul style="list-style-type: none"> <li>(i) In times of funding cuts or logistical failures, community-run programs are more adaptive.</li> <li>(ii) Informal support networks (e.g., food donations, voluntary labor) can sustain basic services.</li> </ul>

## **4.2. Barriers to Effective Community Engagement**

Despite strong cultural foundations for mutual aid and parental involvement in Timor-Leste, various structural and systemic obstacles hinder deeper, equitable, and sustained community participation in school feeding programs. Understanding these barriers is essential to unlocking the full potential of SFPs as community service platforms.

### **4.2.1. Centralized Procurement and Top-Down Planning**

The current school feeding model in Timor-Leste relies heavily on centralized food procurement, often managed by national-level contracts with large suppliers. While this approach ensures volume and standardization, it limits opportunities for local actors (such as farmers, community enterprises, or cooperatives) to participate in the supply chain. A WFP report in 2022 (see <https://www.wfp.org/publications/timor-leste-school-feeding-evaluation-2022>) highlights that only a small fraction (under 10%) of food used in SFPs is procured locally. The rest is transported from regional warehouses or imported. This system sidelines community producers and discourages local ownership of school nutrition. Moreover, menus are often pre-designed at the national level, with little adaptation to local dietary preferences or seasonal availability. Efforts to introduce decentralized or community-based procurement have faced resistance due to concerns about food safety, administrative complexity, and corruption risks. Yet case studies from Ghana and Brazil demonstrate that such risks can be mitigated through proper training, oversight, and phased implementation.

### **4.2.2. Infrastructure and Resource Constraints**

Many rural schools lack the basic infrastructure needed for effective community participation. Cooking is often done in makeshift outdoor kitchens, without proper stoves, utensils, or ventilation. Storage facilities are inadequate, exposing food to spoilage, pests, or theft. In some areas, even clean water for cooking is unavailable. These limitations discourage community involvement, especially among women, who are expected to cook under physically taxing and unsafe conditions. Women volunteers in the Ainaro district often walked long distances carrying firewood or water to prepare school meals, resulting in fatigue, absenteeism, and even withdrawal from participation. Without investment in basic cooking infrastructure, community service in SFPs risks becoming exploitative rather than empowering.

### **4.2.3. Lack of Incentives and Recognition**

While volunteerism is deeply embedded in Timorese culture, sustained participation requires motivation, recognition, and some form of benefit. Many parent volunteers (especially women) contribute time and labor without receiving training, stipends, or public acknowledgment. This contributes to volunteer burnout and dropout, particularly in poor households that cannot afford to forgo income-generating activities. Some successful programs have introduced modest non-cash incentives, such as:

- (i) Food baskets or agricultural inputs for volunteer families,
- (ii) Public recognition events,
- (iii) Community savings schemes linked to cooking groups.

However, these remain exceptions. A 2021 NGO survey found that only 20% of schools had mechanisms to reward or formally appreciate community volunteers. Strengthening these mechanisms is crucial for fostering dignity and long-term engagement.

#### **4.2.4. Gender Inequity in Participation Structures**

Although women dominate the practical side of meal preparation, they are often excluded from leadership roles in school committees or procurement decisions. Cultural norms (combined with limited literacy, domestic workload, and lack of mobility) reduce their visibility in governance spaces. This exclusion undermines the full potential of SFPs as platforms for gender-inclusive community development. In some districts, male-dominated committees make procurement or budgeting decisions without consulting the women who manage meal preparation on the ground. Gender-transformative approaches to SFPs must move beyond simply involving women as labor to empowering them as planners, leaders, and rights-holders.

### **4.3. Toward a Participatory Model of School Feeding**

To harness the full potential of community participation in school feeding, Timor-Leste must transition toward a localized, participatory, and equity-focused model. Such a model recognizes the role of communities not as passive implementers but as co-designers of food, education, and development systems.

#### **4.3.1. Decentralized and Contextualized Procurement**

A key shift involves moving from centralized food contracts to decentralized, school-level procurement systems. Pilot projects could be launched in select districts, where school committees are empowered to:

- (i) Source food directly from local farmer cooperatives,
- (ii) Plan menus based on seasonal availability and cultural preferences,
- (iii) Monitor costs and quality with transparent reporting

To ensure success, this model must be supported by:

- (i) Training for school committees in procurement and finance,
- (ii) Technical assistance from district authorities and NGOs,
- (iii) Simple procurement templates and safety protocols,
- (iv) Gradual scaling with strong monitoring and evaluation

Such an approach not only boosts community ownership but also retains economic value within local food systems.

#### **4.3.2. Community-Based Monitoring and Feedback Loops**

To promote accountability and responsiveness, SFPs should integrate community-based monitoring systems. These could include:

- (i) Monthly feedback meetings between parents and school staff,
- (ii) Suggestion boxes for students and volunteers,
- (iii) Public notice boards showing food deliveries and budgets.

In the Viqueque district, a community scorecard approach (piloted by an education NGO) helped schools identify gaps in food quality and kitchen hygiene, leading to timely improvements. These mechanisms increase transparency, build trust, and encourage shared responsibility for meal quality and program outcomes.

#### **4.3.3. Institutionalizing Women's Leadership**

Empowering women in SFPs requires formal mechanisms, such as:

- (i) Quotas for female representation in School Management Committees,



- (ii) Leadership training focused on budgeting, menu planning, and advocacy,
- (iii) Formation of women's cooking groups with links to microcredit or savings schemes.

Evidence from Nepal and Kenya suggests that women-led community kitchens not only improve food quality but also become platforms for economic cooperation, literacy, and social capital development (see <https://www.wfp.org/publications/timor-leste-school-feeding-evaluation-2022>). In Timor-Leste, similar models could link school feeding with rural women's cooperatives, elevating unpaid labor into structured livelihood pathways.

#### 4.4. Comparative Insights from Other Countries

Several low- and middle-income countries have successfully localized school feeding through community participation. Key lessons for Timor-Leste include:

- (i) Brazil's PNAE program requires 30% of food used in school meals to come from smallholder farmers. It includes legal mandates, technical support, and training for school councils.
- (ii) Ghana's Home-Grown School Feeding Program combines nutrition targets with local economic development goals, using community-based monitoring tools and local menu planning.
- (iii) Nepal has integrated women's cooperatives into school meal preparation and procurement, linking SFPs to national strategies on women's empowerment and food sovereignty.

These models share common elements:

- (i) Policy alignment across agriculture, education, and gender ministries,
- (ii) Fiscal decentralization,
- (iii) Embedded community structures with decision-making power.

Timor-Leste can adapt these lessons while tailoring them to local norms and institutional capacities.

#### 4.5. Strategic Recommendations and Contribution to the SDGs

To enhance the effectiveness, ownership, and sustainability of School Feeding Programs through community participation, the following recommendations are proposed (**Table 2**).

**Table 2.** Strategic recommendations.

Focus Area	Strategic Recommendation
Policy Integration	Develop an integrated community participation policy under the national SFP framework, with clear roles for parents, farmers, and local leaders
Decentralization	Pilot and expand decentralized procurement schemes in at least 3 districts, enabling schools to buy from nearby farmer cooperatives
Capacity Building	Train School Management Committees and volunteer groups in procurement, nutrition, food safety, and inclusive governance
Incentive Systems	Provide modest non-cash incentives (e.g., food baskets, training, childcare) for volunteer cooks, especially women
Women's Empowerment	Mandate at least 40% female representation in SFP decision-making bodies; establish and support women-led cooking and farming groups
Monitoring and Feedback	Institutionalize community-based monitoring (e.g., scorecards, feedback forums); ensure transparency in menu, budgeting, and delivery
Cross-Sector Coordination	Establish inter-ministerial task forces to align education, agriculture, and health in supporting school feeding as a community system



These recommendations aim to reframe school feeding from a top-down delivery model into a co-managed local development initiative, rooted in community solidarity, accountability, and sustainability. A community-based approach to school feeding directly supports the realization of several Sustainable Development Goals (SDGs), notably in **Table 3**.

**Table 3.** Contribution to the SDGs.

SDG	Connection to Community-Based SFPs
SDG 2 – Zero Hunger	Ensures children have access to daily nutritious meals while empowering local food producers.
SDG 4 – Quality Education	Reduces absenteeism and enhances cognitive readiness through nutrition.
SDG 5 – Gender Equality	Recognizes and elevates the contributions of women in food systems and school governance.
SDG 8 – Decent Work and Economic Growth	Stimulates rural economies through local food procurement and livelihood support.
SDG 16 – Peace, Justice, and Strong Institutions	Builds participatory school governance and strengthens accountability at grassroots levels.

These interlinkages affirm that community-based SFPs are multi-sectoral tools for inclusive and sustainable development in Timor-Leste. Finally, this study adds new information regarding food science and technology, as reported elsewhere (**Table 4**).

**Table 4.** Previous studies on food science and technology.

No	Title	Reference
1	Enhancement of sensory qualities of papaya leaf extract (PLE) gummy candy	<a href="#">Acob et al. (2024)</a>
2	Nutrition and dietetics concerning diabetes mellitus: Gestational diabetes mellitus	<a href="#">Ahsan (2023)</a>
3	Unraveling the factors behind the soaring tomato prices: A comprehensive analysis	<a href="#">Ali et al. (2023)</a>
4	Navigating rice export restrictions: The impact of India's policy on domestic and international markets	<a href="#">Ali et al. (2024)</a>
5	Health-related problems associated with women garri producers in agricultural zone	<a href="#">Alimi and Animashaun (2023)</a>
6	Efforts to improve sustainable development goals (SDGs) through education on diversification of food using infographic: Animal and vegetable protein	<a href="#">Awalussillmi et al. (2023)</a>
7	Effect of antioxidant compounds on nitrites as inhibitors of N-Nitrosamine formation: A short review	<a href="#">Dewi (2023)</a>
8	Correlation of metabolomics and functional foods research in 2020 to 2023: Bibliometric analysis	<a href="#">Dewi (2025)</a>
9	Trend analysis of eco-friendly food packaging among street vendors: A case study in Gegerkalong street, Bandung, Indonesia	<a href="#">Fadillah et al. (2024)</a>
10	Food security strategy through regenerative agriculture for capacity building of farmers with "integrated nutrient management training program"	<a href="#">Febriani and Pasaribu (2024)</a>
11	The influence of environmentally friendly packaging on consumer interest in implementing zero waste in the food industry to meet sustainable development goals (SDGs) needs	<a href="#">Haq et al. (2024)</a>

**Table 4 (Continue).** Previous studies on food science and technology.

No	Title	Reference
12	Education on the importance of food consumed by breastfeeding mothers and exclusive breastfeeding against stunting prevention through power point media	Ibrahim and Nandiyanto (2022)
13	Analysis of student's awareness of sustainable diet in reducing carbon footprint to support sustainable development goals (SDGs) 2030	Keisyafa et al. (2024)
14	Knowledge of students on about the impact of ice cream consumption on blood sugar	Kusuma et al. (2023)
15	Effect of post-harvest storage temperature on physical parameters of cavendish banana ( <i>Musa Paradisiaca</i> )	Mabrukah et al. (2024)
16	Influence of ICT availability, accessibility, and utilization on agriculture students' academic performance in universities	Makinde et al. (2023)
17	Analysis of the effectiveness of the formation and distribution of financial results of business entities engaged in poultry farming	Najimovich (2023)
18	Analysis of the application of mediterranean diet patterns on sustainability to support the achievement of sustainable development goals (SDGs): Zero hunger, good health and well beings, responsible consumption, and production	Nurnabila et al. (2023)
19	A bibliometric analysis of seed priming: Global research advances	Nurrahma et al. (2024)
20	Low-carbon food consumption for solving climate change mitigation: Literature review with bibliometric and simple calculation application for cultivating sustainability consciousness in facing sustainable development goals (SDGs)	Nurramadhani et al. (2024)
21	Safe food treatment technology: The key to realizing the sustainable development goals (SDGs) zero hunger and optimal health	Rahmah et al. (2024)
22	Smart packaging innovation for food: Enhancing shelf life and quality of perishable goods	Rahman et al. (2024)
23	The effect of electronic word of mouth (E-WOM) on social media tiktok to brand trust and its impact on buying interest in mixue brand ice cream products (Survey on state university students in West Java)	Rosmayanti and Ratnasari (2024)
24	Influence of grower agent on growth of bayam ( <i>Amaranthus</i> sp.) plants with nutrient film technique in hydroponic system	Salsabila et al. (2023)
25	Culinary tradition of cassava rice in indigenous villages Cireundeu, Cimahi, Indonesia as food security heritage in the era of gastro colonialism	Sumaludin (2024)
26	Optimizing psychomotor skills through project-based learning in seaweed dodol processing	Wahyuningsih et al. (2024)

## 5. CONCLUSION

School Feeding Programs in Timor-Leste have already demonstrated value in enhancing child nutrition and educational access.

However, their full transformative potential lies in deepening community participation, making families, farmers, and local leaders active stewards of child welfare and food systems.

Community engagement is not simply a logistical tool; it is the foundation for sustainable, context-sensitive, and culturally rooted implementation. By transitioning toward

decentralized procurement, institutionalizing women's leadership, and embedding local oversight mechanisms, Timor-Leste can reimagine school feeding as a platform for rural empowerment and nation-building.

This participatory model aligns not only with global best practices but with Timorese traditions of collective action and solidarity. As the country pursues its post-pandemic recovery and food security goals, empowering communities through school feeding may prove to be one of its most cost-effective and socially transformative strategies.

## 6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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