# Strengthening Alternative Food Systems in Latin America and the Caribbean

## Identities, Struggles, and Artefacts in Informal Settings

IDRC · CRDI
International Development Research Centre
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Canada

**Final Technical Report**
**2021 - 2025**

SUSTENTO

**Final Technical Report of the Project**

# Enhancing the resilience of alternative food systems

in informal settings in Latin America and the Caribbean through bottom-up initiatives in the built environment (SUSTENTO)

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* The Disaster Resilience and Sustainable Reconstruction Research Alliance, or Œuvre Durable (for its acronym in French), is a multi-university research partnership composed of the Faculty of the Built Environment at Université de Montréal, the School of Planning at McGill University, and the Department of Geography, Planning and Environment at Concordia University. The team analyses living environments from theoretical and empirical perspectives to understand and address vulnerability and resilience to major disruptions, including disasters, climate change, socio-political conflicts, and economic instability.

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* All annexes can be consulted online by clicking on each link.

# 1. Executive Summary

"*Orgullosa de ser campesina… mujer campesina. Lo que se quiere es mantener el territorio y visibilizarlo como una zona productiva.*"

Community leader in Usme, Colombia

Tensions emerge in theory and practice when it comes to defining the "food problem." This is particularly true in Latin America and the Caribbean, where scholars and practitioners rarely agree on how to set priorities, implement effective change, and scale-up possible solutions. We (the **SUSTENTO** team) placed these tensions at the center of our work to enhance the resilience of alternative food systems in six informal urban settings in Colombia, Ecuador, Chile, and Cuba. We adopted a comparative action-research approach, including providing seed funds, technical expertise, and management support to **19 local** initiatives involving **123 community leaders.** We call these initiatives "**artefacts;**" a term that emphasizes the role of these supported initiatives as sources of change, spaces for concertation, and dynamic interfaces between individuals, the environment, resources, and culture. By studying the evolution of these artefacts for over four years, we were able to reveal how stakeholders represent food problems, identify solutions, prioritize viable interventions, and negotiate diverging objectives and tensions. To reinforce these results, we conducted **six case studies**, **133 interviews, 12 focus groups** and two surveys with **326 community members, 149 officers and representatives of formal organizations**, and **138 scholars and experts**.

Across all sites, leaders and communities adopted agroecological practices and other approaches that can be considered "alternative." These include home and vertical gardens, composting devices, organic fertilizers, bio-dehydrators, biodigesters, seed networks, short-circuit marketing strategies, and activities aimed at transferring knowledge about traditional food and environmental preservation. The artefacts were not created from scratch. Local actors anchored these initiatives in cultural practices, existing institutions, rituals, and ongoing struggles. Schools, for example, hosted several artefacts and learning activities to combat stigmas such as the expectation that young people in the area are all gangsters and drug addicts. In all cases, local people worked in collaboration with NGOs and community organizations created for addressing long-term challenges. Local universities played a crucial role in the process of implementing artefacts. They were a source of legitimacy for local leaders, articulated local and external resources and created spaces for dialogue, concertation, and translation between vernacular and technical knowledge. We call this result "**sustained conversation** within **triparty governance mechanisms.**"

We found that local agency in alternative food systems combines two components: one closely related to identities, meanings, and introspection, which we call "**acts of existence**;" and another linked to struggles in the face of social injustices, that we call "**acts of resistance**." Both are constantly mediated by **emotions, legitimacy, tensions, and concertation**. Artefacts created **spaces of care** for children, the elderly, and nature. They provided opportunities for women and girls to advance leadership goals, share daily struggles, and share knowledge about food, agriculture, and nature.

Building on these outcomes, we created a UNESCO-supported **International Diploma**, which is now a reference in South-South cooperation and knowledge sharing. We also produced **nine peer-reviewed articles, 17 conference presentations, and four policy briefs** and supported **18 graduate students** from the region. Based on these results, we created the **Identity–Struggle–Artefact Framework**, an analytical tool that IDRC, scholars, NGOs, governments, and international agencies can use to advance research and implementation in informal settings in the Global South.

## 2. The Research Problem—Beyond Food

*"Un proyecto que fortalezca las huertas urbanas y la soberanía alimentaria es un espacio de resistencia acá en Chile, donde la mentalidad dominante es que somos un país moderno, exitoso, donde todo se consigue rápido con un clic desde el celular."*

Community leader in Concepción, Chile

In 2019, Colombia reached a record production of 2,4 millions tons of *yuca* (Minagricultura, 2020), and the price of this product has risen steadily for many years. Yet most yuca growers can no longer make a living off the land. "Selling *yuca* is hard," explains Gabriela, a community leader in Colombia. "It takes almost a year [from planting to harvest] and a big investment; and then, buyers want to pay only half the price. My real motivation is that I love *el campo* (peasants' lifestyle) and harvesting my own food." (Lizarralde *et al.*, 2025c). Gabriela owns a small piece of land in Valdivia, a low-income settlement affected by the internal armed conflict in Colombia. She avoids the speed and stresses of an urban lifestyle and prefers to maintain rural traditions. Harvesting yuca is, for Gabriela and many others, a way to resist the rapid modernization of urban life and a way to connect to the land, her rural origins, and the agricultural rituals and traditions she cherishes. Gabriela and many other leaders inspired our work and led us to conduct this project.

In informal settings across Latin America and the Caribbean, everyday food practices (production, transformation, distribution, preparation, and disposal) operate under significant stress (Lizarralde *et al.*, 2025c). Common challenges include land tenure insecurity, insufficient infrastructure, frequent natural hazards, increasing climate change impacts, volatile prices, fragile supply chains, absence of the State, and lack of legitimacy among community leaders and food activists (UN Habitat, 2015). We started this project at the end of the COVID-19 pandemic and the beginning of the war in Ukraine, when food supply chains were radically disrupted, and lack of food had become a significant problem in informal settings in Latin America (Garcia-Ferrari *et al.*, 2022). We hypothesized that alternative food systems (AFS)

could stabilize food practices, overcome the problems of the agri-food regimes, and generate several health, social, cultural, and environmental benefits, from social cohesion to disaster risk reduction. We called our project **SUSTENTO**, a Spanish term that refers to the capacity of food to sustain not only physical life, but also culture, identities, social cohesion, and positive changes in the built environment.

Here, the term *informal settings* refers to times, places, and circumstances wherein people (individuals, households, and social groups) develop bottom-up mechanisms to access food, shelter, income, water, sanitation, and services in the face of poverty, marginalization and other hostile conditions (Smith *et al.*, 2022). Informality is an attribute and a way of doing things within a system of economic activities, governance structures, and construction processes (Smith *et al.*, 2022). It does not refer to legal status but to conditions that emerge from local agency. It intersects with ideas of artisan and manual work, self-help, and vernacular and indigenous solutions. It is therefore context specific and connected to culture and social norms (Nigar & Selim, 2026). This definition recognizes that total formality and informality are artificial abstractions. Informality in food systems typically co-exists with formal and institutionalized norms, plans and programs (Smith *et al.*, 2022).

Lockdowns, social distancing, and disruptions in supply chains during the COVID-19 pandemic fueled hopes that AFS could contribute to mitigating risks and major shocks. This idea seemed particularly pertinent in Latin America, where disasters are increasingly frequent and destructive (UNDRR, 2023) and the number of undernourished people increased by 9 million between 2015 and 2019 (FAO, 2020). This increase is often correlated with poverty. It is estimated that, from 2012 to 2019, the percentage of Latin Americans living in poverty went from 28.7% to 30.8% and those in extreme poverty from 8.2% to 11.5%. This means that during the same period, about 25 million additional people became “extremely poor.” United Nation agencies report that food insecurity affects close to 187 million people in the region, mostly women (FAO *et al.*, 2018). Furthermore, close to 23% of Latin Americans suffer from obesity, a condition that, like many other vulnerability factors, affects more women than men (Garcia-Garcia, 2020). Diabetes afflicts 10% of the population (Lusting & Tommasi, 2020) and other preventable diseases have become increasingly common.

United Nations agencies have recently argued that this food problem was caused by “a successive series of crises: the COVID-19 pandemic, inequalities and persistent levels of poverty, the climate crisis, and the effects of the conflict in Ukraine” (FAO *et al.*, 2023, p. 51). They found that this problem is related to nearly 2,8 million deaths (FAO *et al.*, 2023), in addition to economic impacts. Between 2008 and 2018, $13 billion were lost because of drought-induced declines in crop and livestock production (UNDRR, 2023). The Latin American region has “the highest cost for a healthy diet compared to the rest of the world,” explains a 2023 UN Report (World Food Program, 2023, p. 1).

Given this context, we initially focused on the vulnerability of food systems in informal settings. We asked two questions: (1) How do climate variability and external shocks, such as pandemics and disasters, disrupt access to adequate, culturally-meaningful food? and (2) Which interventions can mitigate those disruptions? Our past work, including an IDRC project called ADAPTO (Smith *et al.*, 2022), revealed how social and environmental injustices in informal settings influence risks. Residents often experience racism, stigmatization, and crime (UN Habitat, 2015). Women suffer from patriarchal structures, violence, and sexual aggressions (Newell *et al.*, 2020). Communities often resent marginalization, segregation, the absence of the State, as well as corruption, nepotism, cronyism, radical capitalism, and neoliberal practices (Hardoy & Pandiella, 2009). A community leader Colombia, for instance, explains: “Urban expansion is destroying our territory […] we are losing our identity.” To build on this previous research, we asked: What are the consequences of social and environmental injustices in the functioning of AFS in informal settings, and how can they be redressed?

Social struggles are frequently connected to food in South America. *Via Campesina* and other movements have linked food to indigenous rights and the emancipation of *campesinos* (Wittman *et al.*, 2013). We took into account from the beginning of our project that food is essential to demands for social justice, rights, change in economic systems, and other forms of social activism. Although concepts such as food sovereignty, food justice and food rights (as opposed to "food security," for instance), resonated with most members of our team (Lizarralde *et al.*, 2025c), we quickly noticed that not all local individuals engaged in AFS had the same level of political agendas. We saw that they were all involved in a form of everyday struggle or resistance, but participants did not necessarily aim to replace the existing agro-industrial regimes, or macroeconomic systems. Many actions were rather pragmatic and focused on specific interventions with local impact—in some cases limited to the household level. We eventually defined the everyday, personal struggle, connected to individual introspection and existential thoughts, as "acts of existence."

**A political stance through daily existence**

"We do what we do, and we go through all of this, because our parents engaged in the fight and did what they did." It is in these terms that a young community leader in *La Lucha de Los Pobres* (literally, the Struggle of the Poor), an informal settlement in Ecuador, describes her motivations to engage in AFS. In fact, our work showed that engagement in AFS was for many an act of resistance. Across contexts, local agency in AFS in conditions of informality heavily relied on traditions, past experiences, and historically rooted cultural identities. In discussions about possible changes in living conditions, locals often referred to "where we come from," recalled their history and revived memories as a first step in communication. Almost every narrative started with locals recalling their origins, their past, and their cultural characteristics: "we are fisherfolk, so were our parents and grandparents;" "we come from the countryside," "we grew up in the countryside." We therefore decided to focus on how these identities are constructed, expressed, and negotiated in daily activities, rituals, and social practices.

Our previous research showed that emotions play a crucial role in local actions targeted at disaster risk reduction and climate adaptation (Lizarralde *et al.*, 2025a). In SUSTENTO we found that locals often explicitly expressed emotions (pride, fear, attachment, indignation, hope, etc.) in attempts to mobilize others to act and explain the social and environmental injustices that affect them. Community leaders often cried, laughed, and expressed feelings of anger, frustration, and hope in our meetings. We eventually found that emotions were another common tool to legitimize their struggle, explain injustices, and motivate others to act.

We chose to analyze local practices through empirical evidence. We reduced our initial normative view (what AFS *should* be) to reveal instead real-life dynamics (what AFS actually *are*). We found several tensions among stakeholders involved in food systems, and which require constant negotiation (Maletta & Maletta, 2011). Literature analysis had already demonstrated tensions among scholars and food experts (Leeuwis *et al.*, 2021). The tensions result from different definitions of "the food problem," and different emphases given to possible solutions (Béné *et al.*, 2019). Figure 1 illustrates the different approaches found in the literature, including the main concepts and emphases in competing schools of thought. Our empirical work confirmed that **conceptual differences in scholarship also manifest in diverging objectives and methods in practice**. Informal settings are not homogeneous or uniformly cohesive communities or settlements. Solidarity, strengths, and collective work coexist with vulnerabilities, conflict, and tensions. Individuals may support collective action while also competing for influence and scare resources (space, water, materials, funding, etc.). Different identities overlap and sometimes collide, and various struggles may align, but also contradict each other. Bottom-up efforts can simultaneously help unite people and create cohesion, while also excluding other people. We concluded that frictions around the use of space, power,

gender roles, and implementation strategies shape everyday governance as much as cooperation, solidarity, and empathy. By recognizing the complexity of these social relationships, we gained insight into why certain initiatives flourish, why others fail, and how communities negotiate and develop solutions in contexts of constant uncertainty.

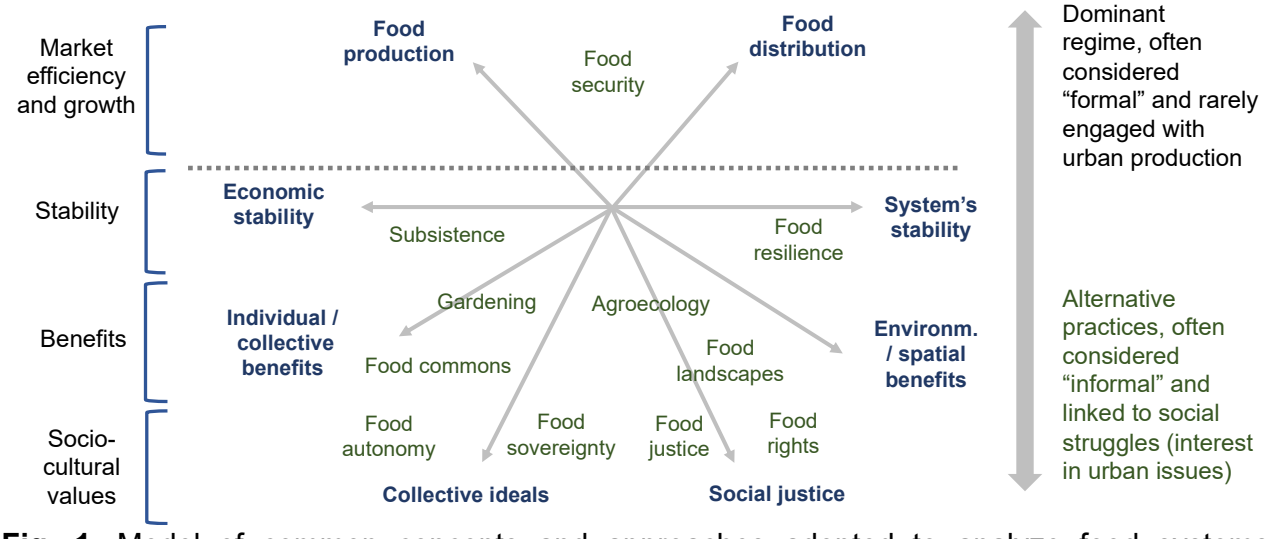



**Fig. 1**. Model of common concepts and approaches adopted to analyze food systems. Published in Lizarralde *et al.* (2025c).

## 3. Objectives—Strengthening AFS

> "*Debemos preguntarnos si la pobreza es solamente dinero o la pobreza es desarraigo. Yo creo que sí le estamos ganando a la pobreza, porque puede ser que los habitantes no tengan dinero, pero cuando vuelven a encontrarse consigo mismos después de esa violencia, la tierra empieza a sanarlos.*"
>
> Community leader in Siloé, Colombia

Our objective was **to facilitate the emergence, consolidation, and stability of culturally relevant alternative food systems (AFS) in informal urban settings** in Latin America and the Caribbean. We achieved this goal by supporting and studying 19 bottom-up initiatives (artefacts) that mobilized 123 community leaders. We documented conditions under which these interventions produce positive change and used this knowledge to consolidate training among leaders, officers, university students and citizens. We created a regional program where key actors learn about AFS and consolidated a network of leaders, activists, officers, and academics who can pursue this objective in the long term. Although we achieved meaningful impact in Colombia, Cuba, Ecuador, and Chile, our efforts were less effective in other countries, notably in Central America. We had four additional **sub-objectives**:

1. To explore how bottom-up solutions, particularly those initiated by women, interact with food systems and contribute to resilience. We achieved this objective and revealed the benefits of the adoption of agroecological practices and other alternative strategies, such as vertical gardens, composting, organic inputs, circular-economy devices (bio-dryers, biodigesters), and short-circuit commercialization. We produced a more refined understanding of how local, often women-led, initiatives interact with food systems.

2. To examine how urban systems influence the resilience and vulnerability of AFS in contexts of informality and climate change impact. We addressed this objective through longitudinal analysis of artefacts embedded in urban systems (schools, public facilities, municipal programs, and urban fringes). Evidence showed that the resilience or fragility of AFS is strongly conditioned by social and cultural dynamics, rather than technical characteristics. Alignment with school and other existing community organization timetables and activities proved to be

more important than the quality of infrastructure or technical processes. Common barriers to local initiatives included tenure insecurity, procurement and currency constraints (particularly in Cuba), changes in leadership, tensions among stakeholders, lack of engagement among stakeholders, and fragmented responsibilities.

3. To identify and analyze conditions for scaling impact, transferring results, and overcoming implementation barriers towards resilient AFS, including alignment with policy and urban planning. We partially achieved this objective. The original emphasis on "scaling impact" was progressively reframed as a concern with ethical translation and challenges in stabilization. Empirical evidence showed that large-scale replication was rarely realistic. Instead, small interventions anchored in existing institutions (schools, neighborhood organizations, and community-based organizations) showed greater impact. We found that the enabling conditions for translation include legitimacy, women and youth custodianship, administrative legibility, sustained engagement by local leaders, and clear responsibilities. Alignment with urban planning and policies was only partially achieved. We contributed evidence that can inform planning debates but could not create city-wide AFS programs or major policy reforms.

4. To develop capacity among stakeholders, particularly local leaders, to overcome barriers and reduce challenges that inhibit the emergence, consolidation, and stability of culturally relevant AFS in informal urban settings. This objective was largely achieved. We pursued capacity development through three strategies. First, we developed the UNESCO-supported International Diploma on vulnerability, disasters, and climate change, with strong emphasis on food systems and informality. Second, we led workshops and design studios where we connected students, professors, community members, leaders, and representatives of public institutions. And finally, we offered targeted training of local leaders, particularly women, on agroecology, organizational skills, leadership, food transformation, and basic management.

## 4. Methodology—Four Main Strategies

"*Las mujeres jugaron un papel muy fundamental; la participación de las mujeres aquí, al menos en la Lucha de los Pobres, siempre fue importante*."

Community leader in Ecuador

SUSTENTO was conducted between 2021 and 2025 by an international research group, in partnership with five local research teams. We brough together 25 researchers from the disciplines of ecology, geography, architecture, urban planning, engineering, social work, and sociology, as well as two officers from Corporación Presentes, a Colombian NGO involved in disaster risk reduction and climate adaptation in the region. We selected four countries with similar and different economic and political conditions, which allowed us to examine various cultural identities, governance systems, and forms of struggle. In Colombia, Ecuador, and Chile, we observed contexts affected by recent neoliberal practices. Cuba, in contrast, represented a case of a socialist government. This country has a long tradition of urban agriculture and benefits from a food rations program run by the State. Including Cuba in our study allowed us to explore the impact of governance and beyond-market conditions in food systems. We chose urban and peri-urban settlements that regularly experience disasters and are home to low-income families. These settlements are of informal origin or have a strong presence of informal construction, production, and economic activities. The six case studies are located in Quito (Ecuador), Nonguén (Chile), Cienfuegos (Cuba), and Siloé, Valdivia, and Usme (Colombia). See annexes 1 to 6 for specific reports of each location.

We chose places with diverse spatial configurations. Cienfuegos, for instance, is a more consolidated urban area, whereas Usme, Siloé, and Nonguén are areas of transition between cities (Bogotá, Cali, and Concepción respectively) and rural areas. Residents in all case studies

include immigrants from rural areas and international refugees, especially from Venezuela, Haiti, and Colombia. In all settlements, infrastructure, housing, and services are in a process of consolidation. They all face various risks, from landslides (Siloé, Valdivia, and La Lucha de los Pobres) to flooding (Cienfuegos, Nonguén) and extreme rain and/or drought (Usme, Cienfuegos). Table 1 summarizes some of the basic characteristics of these case studies.

**Table 1.** Characteristics of informal settings (Lizarralde *et al.* (2025c).

| City (Neighborhood) | Context | Estimated population | Demographic characteristics | Housing typology (average plot size) | Relation to water and common risks |
|---|---|---|---|---|---|
| **Quito (La Lucha de los pobres)** | Densely populated area | 38,000 | Mostly 2nd and 3rd generation of rural migrants | Masonry units, 2 to 3 story-high (180 m2) | Crossed by two water streams. Floods, landslides, and earthquake risks. |
| **Cienfuegos (Punta Gorda)** | Medium urban density (3300 hab/km2) | 13,000 | Local urbanities | Masonry houses, 1 to 3 story-high | Close to the sea. Flood and gradual sea level rise |
| **Concepción (Nonguén)** | Transition between city and protected areas | 10,000 | Mostly 2nd and 3rd generation of rural migrants | Masonry and wood units, 1 to 2 story-high (80 m2) | Crossed by an estuary. Flood and earthquake risks. |
| **Cali (Siloé)** | Densely populated area | 59,261 | Mostly 1st and 2nd generation of rural migrants. Presence of International refugees and Black communities | Masonry units, 1 to 3 story-high (48 m2) | Crossed by a water stream. Flood, earthquake, and landslide risks. |
| **Usme (La Requilina)** | Periphery, transition between city and rural areas | City: 17,000 Area: 365 | Mostly 1st and 2nd generation of rural migrants. Presence of International refugees | 150 m2 masonry and wood units, one story-high (2000 m2) | Crossed by water streams. Flood, earthquake, and landslide risks. |
| **Valdivia** | Small town | 14,596 | Mostly 1st and 2nd generation of rural migrants. Presence of International refugees, Black and indigenous communities | Masonry and wood units, 1 to 2 story-high (55 m2) | Near a major river. Flood, earthquake, and landslide risks. |

We adopted a mixed-methods and comparative approach that included four main tools:

1. Ethnography: Local professors and students conducted much of the ethnographic work. We were looking for what Hammersley and Atkinson (1994, p. 248) call an "explicit interpretation of the meanings and functions of human actions." We adopted Hammersley's (2015) approach to ethnographic work. This means that we wanted to both *do* ethnography and *use* ethnographic tools in our analysis of social dynamics. We focused on the interactions among citizens, leaders, authorities, officers, and representatives of non-profit organizations. Graduate students conducted participatory observation for more than a year and used mapping techniques to document changes in the space (see Table 2). We complemented observations and 4-year immersion within social groups with semi-directed interviews with leaders and community members. We conducted 12 focus groups, four of which included the scholars based in Canada. These focus groups lasted from 60 to 90 minutes and most of them were directed by a senior social worker at Corporación Presentes. Local researchers met regularly with community leaders and members and invited them to several academic exercises, meetings, and project presentations. Every year, local research teams produced reports that were discussed with researchers in Canada.

2. Surveys: We conducted surveys at two different moments: one in 2022 to understanding pre-implementation conditions, and one in 2025 at the end of the project. At each stage we surveyed three groups: (group A) residents and local leaders; (group B) officers and representatives of municipalities, regional governments, and NGOs; and (group C) scholars and national and international experts in food systems. The surveys included 25 questions that covered the same subjects but from the perspective of three different groups of respondents. Most questions were presented in the form of statements with Likert scales at 5 levels, such as: "The quality of food that is produced locally is: very poor (1) to very high (5). Other questions addressed household food practices and access; participation in production, composting, and related activities; perceptions of environmental change and common challenges; and interactions with programs and institutional stakeholders. Local teams contacted most officers, scholars, and experts via email. They contacted residents in person or through social media platforms, focus groups, and other group activities. In many cases, local people replied to the survey in person or on paper, while representatives of institutions and scholars filled out the questionnaires online. We tried to make the versions of the survey as similar as possible, but several questions had to be reformulated to respond to local vocabularies. This was particularly important in Cuba, where we modified questions to address the particularities of the socialist economic system, such as the government program of food ratios. We obtained full questionnaires from 326 individuals in group A, 149 from group B, and 138 from group C. We analyzed results descriptively and used cross-tabulations to detect differences between 2022 and 2025. See Table 2 for details about data collection strategies. We found consistent patterns in the distributions and rankings of Likert-scale responses in all case studies, indicating that changes in local conditions had minimal if any impact on perceptions of food systems.

3. International design studios and workshops: We organized eight design studios with students of architecture, engineering, and urban planning in Chile and Canada. These studios were research initiatives that combined data collection, data analysis, design activities, teaching, feedback by researchers and practitioners, and dialogue with local leaders and community members. They were incorporated in the professional curriculum, lasted one semester, and invited students to produce spatial analyses and alternative scenarios for positive change in informal settings. We also organized two shorter workshops in Cuba and Ecuador intended to produce rapid documentation, analysis, and validation of ideas with local stakeholders. Table 2 summarizes basic data about these activities and Figure 2 shows examples of student projects.

**Table 2.** International design studios and workshops

| | University | Number of students | Program | Number of projects | Main results |
|---|---|---|---|---|---|
| **Design studios (curriculum-based courses)** | Universidad del Bío-Bío, Chile | 90 (6 editions) | Taller de Barrios | 18 | Strengthened collaboration between community leaders, municipal staff, and the university. |
| | Université de Montréal, Canada | 24 (2 editions) | Lab Interfaces | 8 | Included AFS in curricula in architecture |
| **Workshops (short, intensive activities)** | Universidad Central, Cuba | 13 | Student Scientific Workshop | 4 | Strengthened undergraduate research skills on urban food issues and AFS, and supported students' thesis work. |
| | FLACSO, Ecuador | 32 | International Regeneration (intensive workshop) | 4 | Produced several regenerative and risk-prevention proposals. |

**Fig. 2.** Examples of student projects. Left and Right: International Regeneration Workshop in Quito; Center: *Taller de Barrios* (neighborhood studio) in Concepción.

4. Action-research: We aimed to reveal not only how citizens perceive food systems, but also to what extent they can effectively improve the systems. We therefore designed a research-action strategy (for more details see the following section on Implementation). The core of this initiative was to support local leaders' initiatives with funds from the IDRC grant. This strategy allowed us to follow implementation activities and beneficiaries of these funds (local leaders) during a period of four years. Following action-research methodologies, researchers constantly participated in implementation activities, such as community cooking, planting, exchanges of seeds, and the design, management, and construction of artefacts. Local scholars deeply engaged with community members and local leaders on the ground. In this way, they were not passive observers, but active agents in the bottom-up initiatives funded by IDRC. This engagement proved to be indispensable to gain local people's trust and overcome misconceptions about research and external funding. That said, we did not insist on forcing local initiatives to succeed at "at all costs." We adopted the approach by Westoby et al. (2020) to analyze both success and failures in local initiatives (Westoby *et al.*, 2021). We found that we could learn equally from positive results as from conflict, tensions, and negative outcomes. We focused not only on the factors that fostered the development of AFS, but also those that hindered them.

**Table 3.** Data collection strategies.

| City | Interviews | Focus groups | Local leaders involved | Replies to questionnaires | Researchers involved |
|---|---|---|---|---|---|
| Quito | 13 | 1 | 30 | 120 | 3 |
| Cienfuegos | 9 | 3 | 12 | 160 | 8 |
| Nonguén | 3 | 1 | 10 | 39 | 6 |
| Siloé | 47 | 3 | 22 | 95 | 3 |
| Usme | 51 | 3 | 12 | 75 | 3 |
| Valdivia | 10 | 1 | 37 | 124 | 2 |
| **Totals** | **133** | **12** | **123** | **613** | **25** |

The selection of local initiatives to be funded had to be done very carefully. We did not want to create additional tensions within social groups, and we also wanted to consolidate long-term engagements with leaders and communities. We initially focused on food production initiatives but eventually decided to include other related initiatives such as food education, distribution, consumption, and waste management. We set up an implementation committee (see next section) responsible for prioritizing initiatives. We asked community members and local leaders in each location to identify priorities that could be funded with a CAN$ 4,000 grant. We identified 19 initiatives (see Annex 09) which addressed different aspects of the food system and targeted several social groups. We then followed local leaders' activities and documented urban and spatial changes through drawings, photographs, and plans. We focused on identifying how local people define food problems, prioritize solutions, negotiate alternatives, manage funds, and coordinate efforts to overcome challenges and barriers. See examples of artefacts in Figure 3.

**Fig. 3.** Examples of artefacts. Left: *Aula del Sol* in Concepción. Center: *Biosecador* in Siloé. Right: *Innovaciones técnologicas* in Usme.

We then triangulated data, comparing responses to the questionnaires and ethnographic exercises with insights from effective interventions on the ground. In group meetings every six months, local researchers summarized the main motivations and barriers identified in each location. Next we discussed these motivations and barriers with other scholars in Canada and participants in the field, trying to contextualize them and identifying the variables that influenced them.

SUSTENTO faced **several methodological limitations and challenges**. The survey included a limited range of respondents. In order to generalize, or nuance, results, additional surveys are needed in other locations, countries, and among varied social groups, such as indigenous and Black communities (see our comments in GEI). Questionnaires, interview guides, and mapping techniques had to be adapted to local conditions (in terms of language, the way themes were introduced, and logistics). This means that, even though we tried to standardize tools, some differences in scientific interests and the way some subjects were addressed might have influenced the results. Finally, we did not select respondents, beneficiaries, and interviewees in a randomized manner. Instead, we focused on areas and social groups in which we had strong relationships with local leaders. This fact might have had an influence in our results. Although randomized selection of respondents is important for statistical generalizability, the implementation would have been impossible without the trust and local knowledge developed through our non-random connections. Our connections allowed us to develop local impact and contextual insight. Despite the lack of statistical generalizability, qualitative comparisons across contexts did allow for generalized insights.

## 5. Project Implementation and Management

> "*Aquí en Chile todavía no se ha logrado recuperar, post dictadura, el tejido social fuerte; y ahora estamos en procesos que tal vez terminen por matarlo, con miedo, desconfianza y gente que desde la casa y el celular se siente exitosa porque puede comprarlo todo*."
> Community leader in Concepción, Chile

SUSTENTO was coordinated by Université de Montréal and developed by university partners in Colombia, Ecuador, Chile, and Cuba. We organized three decision-making structures: The Scientific Committee in charge of research activities, the Implementation Committee, in charge of local initiatives and funding for local leaders; and the Postgraduate Committee, in charge of training and education. They all met regularly to evaluate initiatives, review applications, and make management decisions. The project stayed within its overall budget envelope and required an extension of four months. Universities, NGOs and other local organizations provided significant contributions to logistics on the ground and supported academic activities. We estimate that partners provided an in-kind contribution of about CAN$ 1,480,000 including access to university labs and rooms, internet connections, library resources, administrative support, software and databases, and salaries for professors and part-time teachers.

In the first year, we created the committees and finalized ethics and data protocols as well as the survey. We obtained an ethics clearance from Université de Montréal and five ethics certificates from universities involved in the project. We prepared and approved contracts and Memorandums of Understanding with local partners and finalized money transfers to them. In the second year, we organized neighborhood workshops and community meetings. We also refined monitoring tools and produced templates for reporting results. In the third year, we focused on cross-case learning and academic publications, and we launched the SUSTENTO International Diploma. In the final year, we focused on consolidating results and dissemination. These activities included finalizing the portfolio of 19 artefacts, standardizing reports and toolkits, and participating in 17 conferences in Canada, Cuba, Colombia, Chile, Ecuador, Spain, Türkiye, India, and Japan (See Annex 07).

Economic instability, lack of electric power, and lack of internet connection complicated logistics in Cuba and jeopardized transfers and local procurement. Changes in local currency, lack of gas, and Hurricane Rafael also disturbed some activities in Cuba, notably in years 3 and 4. In response, we adopted alternative methods, such as processing expenditures via Université de Montréal and Presentes Corporación, simplifying procedures, prioritizing locally serviceable components, and sequencing purchases. We also relied on social media platforms, online focus groups, and pre-recorded materials to maintain data collection and communication with students and professors in the island. It is worth noting that the Cuban team also mobilized its own cash and in-kind resources, which permitted the teams to conduct anticipated activities without compromising quality or schedules.

Coordinating multiple partners in different countries, often under remote-work constraints, remained challenging. The combination of centralized financial monitoring and local flexibility in implementation facilitated budgetary control while allowing initiatives to respond to specific local conditions. We used regular virtual meetings and visits to local teams (funded by other sources) to keep all partners informed. Social protests, violence, and electoral cycles were common sources of instability in Colombia, Ecuador, and Chile. Risk was reduced by working through local universities with long-standing relationships with municipal technical staff, local leaders, and civil-society organizations. Local universities leant legitimacy to the activities of informal leaders and acted as intermediaries between community members and government and municipal officials. This stable, structured communication among citizens, leaders, and officers proved essential for creating trust. We consider it both a method and an outcome, which we call **sustained conversation** within **triparty governance mechanisms.**

## 6. Gender Equality and Inclusion

> "*Las mujeres crecimos con la idea de depender de alguien. Aquí aprendimos a depender [solamente] de nosotras mismas.*"
>
> Community leader in Usme, Colombia

For many years, Gender Equality and Inclusion (GEI) has been central to our work. We know that roles, power, resources, and opportunities in informal settings are unevenly distributed according to gender, race, social status, ethnicity, and family origins. Our team is conscious that we still have **much to learn** from feminist, decolonial, and post-colonial approaches. Thus, from the beginning of the project, we included four new team members (Sara Latorre and Myriam Paredes from FLACSO; Anagret Mederos from Universidad Central; and Neidy Clavijo from Universidad Javeriana) who are experts in feminist perspectives and capable of accompanying us through this learning process. In year one, we organized a workshop on feminist approaches in FLACSO, Quito, aimed at reinforcing our own knowledge and developing common goals around GEI. We included organizations with explicit gender and care agendas, such as Presentes Corporación, and teams linked to networks on "cities and territories that care" with a gender approach (Walmsley & Chau, 2022). We also conducted five leadership

and sustainable practice workshops (three in Valdivia, one in Concepción, one in Usme), primarily targeting women, elderly and youth. These workshops aimed to strengthen local capacity to manage and sustain initiatives, and to consolidate women's roles as spokespersons and coordinators in their communities. We explicitly encouraged co-production of solutions with women leaders and care workers. Our International Diploma integrate gender, food sovereignty, climate change, and community action, as core learning subjects.

Our empirical evidence confirmed that women's initiatives and efforts are crucial for risk reduction, climate adaptation, and the safety of children and elderly. Women are also the ones who typically take care of the environment and secure access to water and food. Their efforts, however, are often undervalued and ignored. We decided not to conceptualize GEI as a separate thematic axis, but rather as an integral component of the political and relational structures that shape AFS in conditions of informality. We wanted women to be present as leaders, coordinators, and key interlocutors with authorities and we accomplished this goal in several cases. In Cienfuegos, women became visible reference points for community-based food initiatives. In Concepción and Usme, women teachers and community leaders played central roles in school-based gardens and pedagogical projects. One participant confirmed the benefit of the program: "I now feel more confident of speaking in public. I was afraid of doing it before." Cases such as "Collaborative Pedagogy for Gardens" in Concepción showed both resistance and gradual change: male community members who were initially reluctant to accept women in leadership roles progressively engaged in dialogue and accepted their coordination, although progress was slow and required sustained effort. In Siloé, new male teachers who initially resisted women's leadership later joined garden activities and endorsed plans. In Cuba and Ecuador, women's groups gained legitimacy with municipal actors; and in Chile, teachers began recognizing agroecological knowledge, traditionally coded as "domestic," as valid and essential to school-based learning. Several women-led initiatives gained visibility with local authorities, for example through collaborations with municipal programs and participation in regional events.

SUSTENTO contributed to addressing root causes of gender inequality, including patriarchal norms, care burdens, and limited institutional recognition. Several initiatives evolved into sustainable processes that strengthened women's agency and led to new leadership roles for girls, teenagers, and elderly. Several artefacts created "safe spaces of care" where food practices, emotional wellbeing, and intergenerational learning intersected. Interventions made visible the social, cultural, and affective labor that women were already performing to sustain households and communities. Some of them also challenged stigmas around women leaders in neighborhoods marked by crime, poverty, and violent territorial control. A key lesson from SUSTENTO is that **advances in GEI are more likely to endure when embedded in traditions, rituals, and social routines**, rather than depending on individual champions or campaigns.

We could have done more to address **intersectional challenges.** In Siloé, tensions between Venezuelan and Colombian residents highlighted how origins, migration status, and gender intersect in everyday conflicts around space, safety, and access to services. In Cienfuegos, scarcity of resources placed additional burdens on women, who were often responsible for negotiating access to inputs while maintaining household care routines. Future work should deepen intersectional perspectives and address compounded marginalization affecting Indigenous women, refugees (including Venezuelan women), and women in extreme poverty. **GEI transformation remains incomplete in the locations where we worked.** Future initiatives need sustained resourcing for women-led organizations, and continued attention to tensions in places where patriarchal structures and violence are common.

# 7. Project Outputs and Dissemination

*"La tierra es alimento que no es para vender, sino para reencontrarme y reconciliarme con eso que me quitaron."*

Community leader in Siloé, Colombia

Here we present our outputs organized according to the project's four implementation plans (A–D). Annex 16 provides a consolidated overview and a table comparing planned versus actual outputs across these plans.

**A. Knowledge and Dissemination:** We completed **six case studies** across four countries, plus a comparative synthesis. We funded a PhD project about food systems and communication of climate risk **in Guatemala**. We applied a **survey instrument at two different times** (2022 and 2025) and **provided 18 scholarships** (4 for undergraduate students, 10 for masters' students, and 4 for PhD students). We organized 4 internships within partner institutions, linking students to field-based projects and local organizations (Annex 08). In 2025, we conducted fieldwork activity in Medellín tied to this Diploma, and the next edition is planned for 2026 (Annex 12). Through these activities, **we trained more than 200 students and practitioners on food systems, risk, and climate change**. Mixed methods made it possible for our team to document not only what was done, but who sustained it, under which constraints, and with which social and emotional effects. Over time, this work was consolidated in **the Identity–Struggle–Artefact Framework,** (See Annex 17) which offers a structured way to analyze AFS in informal settings. We also produced **9 peer-reviewed articles, 17 conference presentations, and 18 student theses and research reports** (See Annex 07 for Publications and conferences and Annex 08 for Student outputs).

**B. Training and Learning Plan.** We implemented training and learning activities for students and community leaders through three components: (1) **International design studios and workshops** in Concepción (2021–2025), Quito (2022), Cienfuegos (2023), and Montréal (2021 and 2024) (Annex 10). (2) **Training sessions for local leaders:** we strengthened collective organization and leadership capacities across the artefacts by implementing training sessions for local leaders, including workshops on organizational leadership, teamwork, entrepreneurship, motivators and barriers for alternative food systems, conflict management and decision-making, assertive communication, and emotional self-care (Annex 11). (3) **Creation of a Latin American Graduate Program:** we did not formalize a master's program as initially intended; instead, we created an annual International Diploma whose themes are updated yearly (Annex 12).

**C. Implementation:** We completed 19 artefacts across six case studies (see Table 4). These initiatives include school and home gardens, composting and waste-to-value components, small processing units, pedagogical routes, seed-related initiatives, and agrotourism activities (See Annex 09). We produced 12 videos (and 11 shorts) that are now used in classes, symposia, and policy dialogues. They document the trajectories of communities, the testimonies of women leaders and youth, and the process of implementing initiatives in AFS (Annex 13).

**D. Networking and Impact:** We completed all networking activities (Annex 14), including:
Online kick-off workshop (2021): Here we established shared concepts, survey instruments, and case-study protocols and formalized our comparative agenda and roles.
First symposium (Quito, 2022): We brought together teams from the four countries plus a researcher from Nicaragua, local leaders, and other scholars to discuss preliminary findings.
Second symposium (Bogotá, 2023): Here we focused on tensions, governance, and community leadership. We also discussed how identities, struggles, and artefacts interact across sites.
Third symposium (Medellín, 2024): The third symposium was originally scheduled to take place

in Cuba. It had to be rescheduled due to Hurricane Rafael. We changed the venue to Medellín and presented artefacts, shared progress on the International Diploma, and discussed lessons. Closing event (online, 2025): We presented results, and local leaders explained their experiences and reflected on the project. We invited professor Malek Batal, an international expert in food systems, to reflect on our work and provide feedback.

**Table 4.** Initiatives (artefacts) implemented and their main objective.

| Case | Artefact | Objective |
|---|---|---|
| Cienfuegos, Cuba | Urban Agriculture Promoters *(Promotores de Agricultura Urbana)* | Promote urban agriculture |
| | "Good Practices" Communication Sheets *(Fichas de comunicación )* | Community spaces renewal |
| Concepción, Chile | Community Garden Workshop *(Cultivando Comunidad )* | Community environmental education |
| | Nonguén Food Sovereignty *(Soberanía Alimentaria)* | Strengthen food sovereignty |
| | Collaborative Pedagogy for Gardens *(Redes pedagógicas colaborativas)* | Collaborative environmental learning |
| | Solar Classroom *(Aula del Sol)* | Participatory environmental education |
| Valdivia, Colombia | Women's community harvest - Collective initiatives *(Cosecha de mujeres)* | Strengthen healing garden networks |
| | Healing Gardens - Individual initiatives *(Huertas que Sanan)* | Foster healing community gardens |
| Siloé, Colombia | Composting *(Sico)* | Community compost production |
| | Solar dryer *(Secador)* My Apothecary *(Mi Boticario )* | Sustainable solar drying |
| | Vertical gardens *(Terraplant)* | Recycled vertical gardens |
| Usme, Colombia | Co-creation of Knowledge *(Co-creación de conocimientos)* | Community agricultural leadership |
| | Origin and Productive Base *(Origen y base productiva)* | Sustainable food agrobiodiversity |
| | Feeding Our Soil *(Alimentando nuestro suelo)* | Community soil improvement |
| | Technological Innovations *(Innovaciones tecnológicas)* | Resilient agricultural innovation |
| Quito, Ecuador | Communication and Good Eating *(Comunicación y Buen Comer)* | Community food awareness |
| | Sovereignty and Struggle *(Soberanía y Lucha)* | Inclusive healthy gastronomy |
| | Ayriwa Community: Recycling, Green Spaces, and Youth *(Mi barrio verde)* | Youth environmental action |
| | Strengthening Our Land, Our Crops *(Fortaleciendo nuestros huertos)* | Agroecological urban agriculture |

**Our design studios and workshops connected** students, researchers, and local actors around concrete spaces and artefacts. The **training activities** led by Presentes Corporación strengthened organizational skills, communication, and emotional management among leaders—especially women and youth. Three outputs can be considered genuinely distinctive. **First, the Identity–Struggle–Artefact (ISA) Framework**, a conceptual and analytical tool that emerged from empirical work and that offers a structured way to understand who leads change (identity), why they do it (struggle), and how interventions materialize (artefacts). This framework is now being used in academic publications, in the International Diploma, and in conversations with public-institution stakeholders. These conversations are facilitated through, for instance, design-studio reviews involving municipal staff (*Taller de Barrios*, Chile) and inter-institutional meetings with city officers in Cali and Ecuador. **Second, we founded the UNESCO-supported International Diploma**, which provided a platform for South-South knowledge sharing and network consolidation. It also allows us to integrate findings in real time, harmonize methods, and train practitioners and students from different countries. **Third, we thoroughly documented and disseminated local narratives**. Local people's explanations and local knowledge have become a powerful tool for obtaining legitimacy, setting new

initiatives, and creating a better understanding of informality. These narratives and documented experiences have informed school-level decisions, such as changes in courses and the replanning of a school garden in Siloé's *Escuela Multipropósito*. They have also fed municipal and policy-oriented discussions, such as ongoing dialogue with the city-led program "*Cali ciudad de huertas,*" and meetings with government officers in Cali aimed at risk-management and territorial planning. We developed capacities in schools, community organizations, and municipal units, and made it easier for non-academic actors to use and adapt the tools we produced.

We are currently finishing **four policy briefs** that distil lessons on governance and legitimacy, GEI, climate adaptation in informal settings, knowledge partnerships and livelihoods into formats that are accessible to non-academics (Annex 15). We are currently working on a third **policy-oriented journal article,** which focuses on uncertainty and instability in AFS. We are also working **on a collective book titled *Identidades, resistencia y sistemas alimentarios alternativos***, coordinated by three editors and involving multiple co-authors from the SUSTENTO team.

## 8. Project Outcomes

In one of the concluding sessions, a local leader in Usme summarized beautifully: "This work is about rendering visible those who have engaged in a silent struggle that needs to be supported." Her comments capture our main method and outcome: to **render visible the work of community leaders and citizens** engaged in AFS in informal settings. This remark was voiced during a closing workshop in La Requilina (Usme) in May 2025. Leaders were explicit about how they intended to use this increased visibility. They framed it as new leverage to protect their territory and sustain community-led initiatives. During the project, leaders had raised concerns about urban expansion, land speculation, and disordered tourism, and requested continued academic collaboration to explore legal and administrative pathways for territorial defense. With the help of SUSTENTO they chose to strengthen the *Ruta Agroturística La Requilina*, an agritourist initiative that takes advantage of the natural landscape, highlights agroecological practices, and seeks to create new economic opportunities for residents. The initiative mobilized existing visibility of local actors and also increased it, notably among municipal and planning officers in Usme and Bogotá, environmental NGOs, and landowners and developers in the region.

In other places, making practices and narratives legible to external actors also **opened concrete opportunities**. In Siloé, we worked closely with a core group of 15 local leaders to build links with municipal and regional officers. This helped public actors recognize community-led artefacts as practical inputs for public action and planning in risk-prone areas. We also used project meetings, design activities, and artefact-based tasks to engage public and para-public institutions. In this way, local leaders connected with the municipal program *Cali, Ciudad de Huertas*, held technical exchanges with the regional environmental agency (DAGMA), and met four municipal and planning officers. In these meetings with authorities' community members focused on strengthening local initiatives and safety in informal settings. We also organized two workshops in November 2022 with community members and young leaders at the local school (*Institución Educativa Multipropósito*). In these workshops, researchers and community members explored responses to climate change, food insecurity and disaster risk. In front of several stakeholders, students from the school expressed their interest in changing people's perception of them. "We do not want to be stigmatized as gangsters and drug addicts," concluded one of the young leaders.

In Nonguén (Chile), the local school helped turn local narratives and empirical results into strategic decisions. When parents raised concerns about children's safety, we made changes to the *Aula del Sol* (an artefact that was under development at that moment). We designed

changes during a *minga*, or collective community workday. The school now uses this artefact as an open classroom and meeting space where it hosted eight workshops on food sovereignty.

In Cienfuegos (Cuba) we produced 14 theses (Annex 08- page 6) and four technical reports that link alternative food systems with urban planning tools—for example, work on aligning the city's urban plan with local food initiatives, and on creating synergies between food-system enterprises and urban management. We presented these results in eight workshops with 25 community leaders, many of whom also hold roles within the governing party, which helped community members to communicate their concerns directly to local decision-makers.

Across all six case studies, we delivered six training workshops to strengthen **community leadership** and sustain collective action. In Valdivia, we carried out 38 technical visits to homes and community groups, and supported 20 producers through 13 individual initiatives and two artefacts. We delivered five training sessions, focusing on the following themes: leadership, conflict management, decision-making, assertive communication, and emotional self-care. In Usme, we ran three training sessions in August 2023, where we focused on conflict resolution, assertive communication, and emotional management. These subjects were chosen by local leaders, who saw that these skills were particularly important to keep collective action going over time.

Together, these outputs led to concrete outcomes in capacities and institutional practices. Leaders strengthened their skills to sustain collective action and public and para-public stakeholders became more willing to treat community-led initiatives as valid inputs for planning and action in vulnerable areas. In some cases, artefacts and the documentation of local practices motivated groups to formalize their work and practices. In schools, for instance, urban agriculture activities stopped being anecdotic practices to become regular curriculum-based initiatives. Locals also created new partnerships with NGOs and municipal officers, and connected with several public agencies (notably environmental, food, and risk reduction institutions). Table 5 highlights selected outputs and outcomes. It provides additional evidence of changes in relationships, capacities, and institutional practices generated by SUSTENTO.

Table 5. Outputs and associated outcomes (selected examples)

| Outputs | Outcomes |
|---|---|
| Presentes Corporación implemented two community-led artefacts in Valdivia. It also delivered training sessions and technical support for local leaders in all six case studies. Finally, it produced cross-site documentation and guidelines based on this work. | In 2024, Presentes Corporación modified its strategic plan, adding climate change and food sovereignty as core priorities in disaster risk reduction. This change turned project learning into formal commitments and strengthened Presentes' mandate and legitimacy. |
| Universidad del Valle co-developed several artefacts with local partners in Siloé. These included Terraplant, a solar dryer, and other small prototypes and tools. The team linked them to AFS practices and local needs. It also ran demonstrations, tests and improved the artefacts through iterative design processes. The university organized several meetings with local and regional institutions. Finally, it documented key design and implementation choices through short technical notes and reports. | The artefacts strengthened participatory planning and environmental governance in Siloé. We created spaces for concertation between communities, institutions, and academia, and these exchanges generated proposals that can be replicated in other hillside territories in the region. Through the SATIC Program of the Bureau for Risk Management, we connected local knowledge with technical monitoring and strengthened prevention and emergency response. With DAGMA (the environmental authority), we implemented pilot actions aligned with the Urban Gardens and Urban Forests programs, linking ecological and productive dimensions in neighborhood planning. These strategies are now recognized as good practices and could be incorporated into local planning instruments. |
| In Quito, FLACSO used artefacts as learning-by-doing experiences and opportunities for network building. FLACSO partnered with UDLA (a private university) and its Gastronomy School, to develop | The learning generated through the artefacts strengthened both skills and legitimacy around healthier, culturally rooted food practices. This impact went beyond academic settings. After the training |

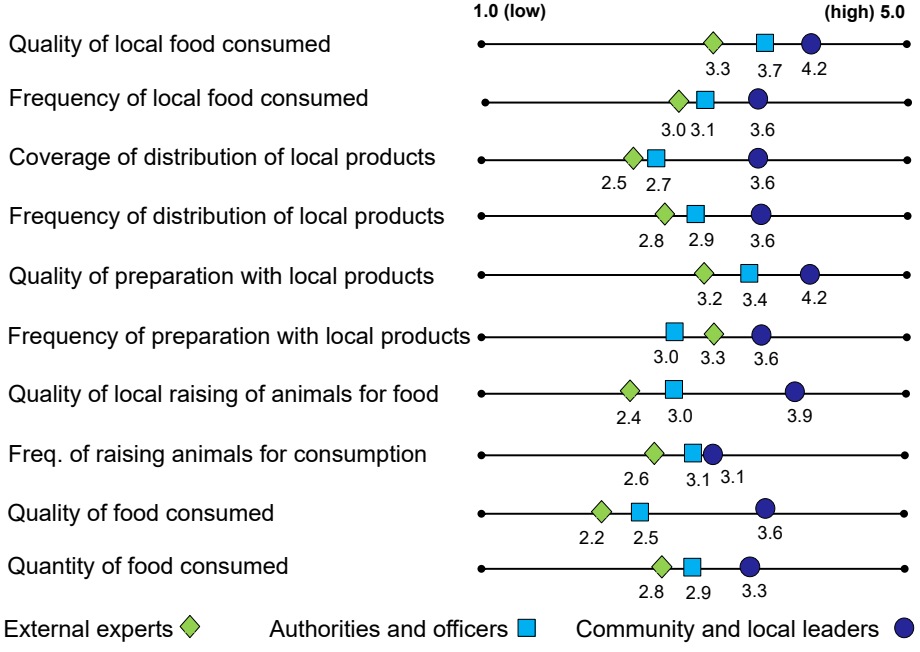
| Outputs | Outcomes |
|---|---|
| one of the artefacts. Building on this, the team trained community members on healthy eating practices, combining local stories, practical food knowledge, and intergenerational learning. At the same time, FLACSO supported four masters' students (Annex 08), who helped developed the artefacts. | experience linked to the artefacts, UDLA's School of Gastronomy consolidated a program of scholarships for older adults. The FLACSO–UDLA partnership expanded networks between community actors, social researchers, and culinary training institutions. It also helped create continuity through legally accredited training processes. |
| Between 2023 and 2025, Pontificia Universidad Javeriana and women leaders from *Mujer y Tierra* and the *Ruta Agroturística La Requilina* implemented four artefacts. The process benefitted 11 women and included three training sessions with an estimated 10 to 15 participants per session. It also documented tensions and emotions linked to territorial pressure, including uncertainty about land loss, workload strain, and climate-related impacts. | After implementation of the four artefacts, the local network gained visibility with external actors and used it as a tool for territorial management. At the closing workshop in La Requilina in 2025, women leaders said this visibility helps protect the territory, sustain their initiatives, and pursue legal and administrative activities in response to urban expansion, land speculation, and disordered tourism. SUSTENTO did not stop urban growth, but it helped strengthen the local narrative and facilitated that pubic officers understand why the territory matters, based on evidence from agro-food practices, "*campesino*" identity, and the benefits of local artefacts. It also facilitated dialogues about land-use and territorial protection with authorities and developers. |
| Instead of formalizing a Latin American master's program, as originally planned, SUSTENTO created an International Diploma as a regional platform for training and South-South knowledge sharing and learning. The Diploma updates its themes each year, including modules and training sessions on AFS, urban vulnerability, risk management, community action, leadership, climate change, communication, and conflict management. | The International Diploma received support from UNESCO and now runs every year as a platform that strengthens capacities among local leaders, students, and partner teams. It makes it possible to integrate SUSTENTO's learning in real time, strengthen local leadership, support South-South exchanges, and sustain a regional action-research agenda on AFS, risk, and governance in informal settings. |

We found that **not all participants engaged in AFS want to increase yields or produce more food.** Previous research suggests that people who engage in AFS often do it as part of a larger struggle and are not always seeking to solve food needs per se (Lizarralde *et al.*, 2025c). We found that adult women and the elderly typically engage in AFS in Latin America and the Caribbean for a variety of reasons that go beyond food. Common reasons include education, socialization, environmental protection, leisure, crime reduction, maintaining cultural traditions, and dealing with psychological distress and isolation. Involvement in food becomes therefore a way of transforming space and expressing normative principles though collective resistance. Related artefacts help reify values, (re)position individual identities, and build on people's experiences.

This result was surprising because we were expecting the quality of food obtained in local production to play a larger role. Our surveys produced knowledge that partially explains why nutrition and food are not the main engines for engagement in AFS. The study revealed that there are significant differences in the perception of food systems in informal settings among the three groups surveyed (local leaders and residents; officers of NGOs and institutions; and academics, and experts in food systems). In all case studies (including Cuba, where we had to adapt the survey to the specific economic and political conditions of the island) locals have a more positive perception of local food systems than officers of NGOs and institutions. These officers, in turn, have a more positive perception than academics and experts. This gap in perception of food systems between local and external stakeholders is consistent across different aspects of the system: quality of food, quantity of food, frequency in the consumption and production of local food, quality of distribution, etc. This gap is also consistent across the

two survey moments: the initial survey in 2022 and the follow-up in 2025 (see Table 6 for results of the 2025 survey on the perception of food systems). These results show that this gap in perception is not the result of post-pandemic conditions (a negative perspective exacerbated by the specific characteristics of the pandemic, for instance). It is instead a **structural difference in the way locals and externals perceive food systems in informal settings**.

**Table 6.** Perception of food systems among stakeholders in Colombia, Chile, and Ecuador.




In places where marginalization is common and the State is absent, there is little trust between authorities and citizens. Universities, however, are respected and seen as legitimate. This recognition allowed them to play **a key role as intermediaries between communities and government.** They were a source of legitimacy for local leaders, who were able to explain that their solutions had institutional and scientific validity. A clear example comes from Siloé (Colombia), where work coordinated by Universidad del Valle supported exchanges with the municipal program *Cali Ciudad de Huertas*, DAGMA (the regional environmental authority), and local government actors. These exchanges enabled local women leaders to present their initiatives to municipal authorities. Universities articulated local and external resources and created spaces for dialogue, concertation, and translation between vernacular and scientific knowledge. They created **sustained conversation** within **triparty governance mechanisms**. Several local scholars institutionalized capacity building practices that were tested in SUSTENTO, such as co-teaching, mentorship, studio workshops, and specialized courses. We also helped three young scholars in the region advance their careers, including receiving promotions and recent recognition from their universities.

An initial objective was to find how alternative food strategies could be scaled up. We found that because of the unstable nature of AFS, **scaling-up is difficult**. This challenge is related to local leaders' lack of interest in wider impact or recognition. Most women leaders were not seeking to scale-up their initiatives (by, for example, expanding to other locations). Neither were they looking for additional exposure or visibility. For them, engagement in AFS was more like an "artisan" work that only has **value in a specific time and space.** Given these results, we decided to apply concepts of Actor-Network Theory to reveal how innovation in AFS emerged and how could solutions succeed and, possibly, expand (see figure 4). By using these tools, we found that AFS rarely reach a stabilized condition. They are rather fragile and dynamic networks that depend on constant interactions between human and non-human agents. We saw that **instability was not necessarily a problem to be fixed, but an inherent characteristic of**

**systems** that are highly dynamic and constantly affected by uncertainty.

We found, as expected, that individuals and groups engaged in AFS tend to challenge rationales (the "why"), notions of space ("where"), mechanisms of production and distribution ("how") and people's roles ("who"). But we also found that their activities put to the test ideas about time ("when"). **Time is crucial** in the artefacts we studied. These artefacts require a coordination of different timelines: harvest seasons, electoral cycles, school calendars, university timelines, funding processes, etc. Contrary to other artefacts, AFS work with living entities. Plants require constant care and the respect of time cycles. This coordination of time sequences and constant engagement are difficult to obtain in social groups and contribute to the challenges to stabilize AFS. When asked about challenges in local activism, women leaders often referred to the difficulty of maintaining unity, engagement, and a common objective over time. Climate change was present as a background stressor, but local actors tended to frame their responses in terms of everyday social dynamics and collective struggle, rather than "climate" actions per se.

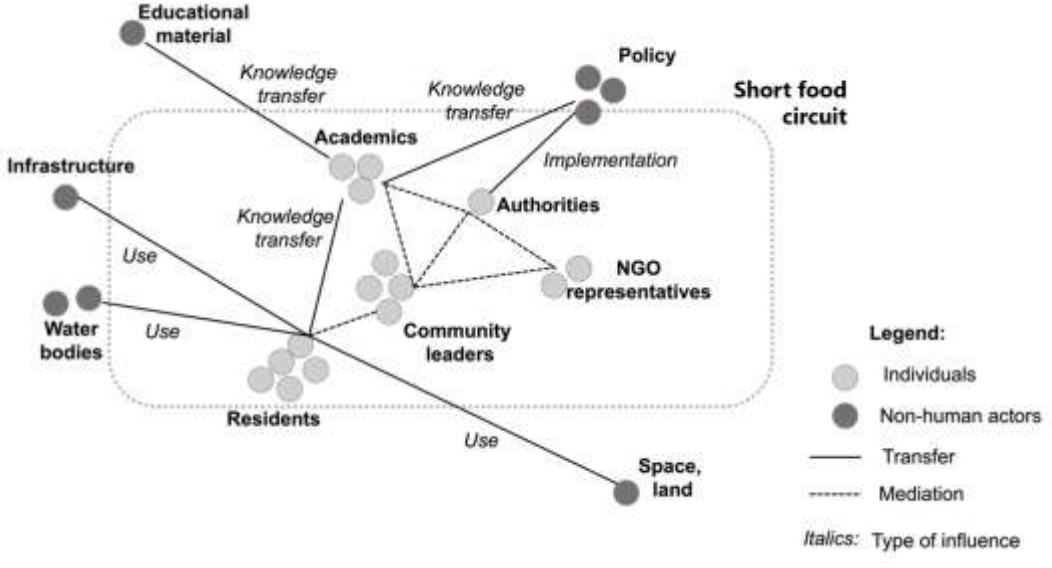



**Fig. 4.** AFS represented through Actor Network Theory. Lizarralde *et al.* (2025b).

Local efforts do not lead to a complete stabilization of AFS. Lack of stability is often linked to uncertainty about land tenure, availability of resources, weather, unclear governance structures, transport strikes, price spikes, political turmoil, economic crises, and crime conditions (Zurek *et al.*, 2022). In response, communities activate backup circuits and practices (collective cooking, pooled purchases, festivals, smaller gatherings, etc.) and rely on the **factors that produce certainty** such as culture, traditions, rituals, common practices, and ancient knowledge.

Despite significant contextual characteristics we found several cross-contextual patterns. For instance, in discussions about possible changes in living conditions, locals often relied on **identities, recalled their history,** and revived memories as a first step in communication. Almost every narrative started with locals referring to their origins, their past, and their cultural characteristics ("we are fisherfolk, so were our parents and grandparents;" "we come from the countryside," "we grew up in a certain place;" etc.). In discussions about local conditions and possibilities for change, locals also explicitly expressed **emotions** (pride, fear, attachment, indignation, hope, etc.) in attempts to mobilize others to act and explain the social and environmental injustices that affect them (Lizarralde *et al.*, 2025a). Community leaders often cried, laughed, and expressed feelings of anger, frustration, and hope in meetings. We eventually found that emotions were a common tool to legitimize their struggle, explain injustices, and motivate others to act.

Local leaders and citizens often expressed an ethos of **resistance** rooted in histories of injustice. They typically explained their struggle as a distinctive aspect of their experience, and a sense of purpose ("everything we have obtained in this neighborhood has been the result of a struggle," said one leader in *La Lucha de los Pobres* in Ecuador). But locals also relied on **acts of existence**, in which they reaffirmed their identities, their past, their origins, and other characteristics about who they are. Their bottom-up activities typically relied on a social fabric shaped and maintained by women. Through social activities they mobilize others to create local alliances and bring together efforts and resources. Finally, behind leaders' activism and practices, we found several **symbolic anchors**. Land, water, forests, the ocean, and other natural features, for instance, are integral components of collective memory and identities. These anchors manifest in objects, rituals, traditions, and activities that have value to community members. Figure 5 summarizes the main components we found in local agency.

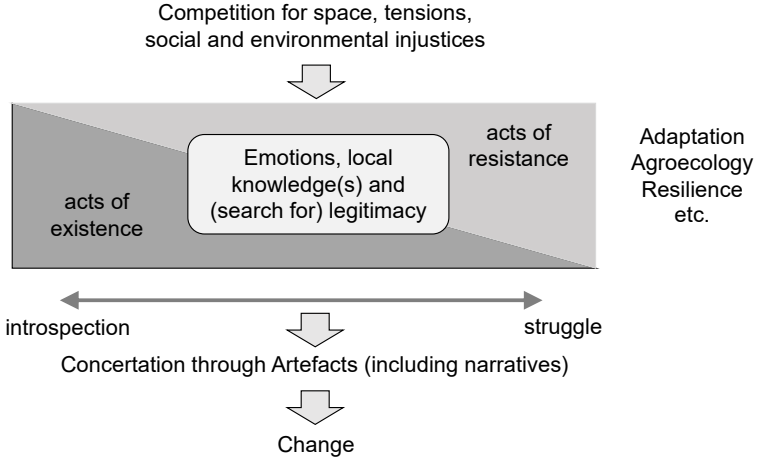



**Fig. 5.** Model of local agency in informal settings.

In several local practices related to food, traditional dichotomies used in policy, planning, and programs become irrelevant. Residents do not identify their practices as "informal," (as opposed to formal) or "urban" (as opposed to rural), or "alternative" (as opposed to regular). They rather see dynamic and fluid characteristics that we call **"spaces in between"** (Lizarralde *et al.*, 2025b). Practices, policy, and programs in the built environment must account for the intrinsic dynamic and fluid character of the "spaces in between" that characterize AFS. Interventions by government and agencies must recognize the challenges that exist in stabilizing alternative networks. They must avoid representations that "romanticize" alternative food practices and identifying instead effective ways to meet their challenges.

We generated a more realistic understanding of how AFS in informal settings are shaped, not so much by technical solutions to food production, transformation, and distribution, but by the social fabric that surrounds them. SUSTENTO shows that modest, well-documented artefacts, combined with trusted intermediaries (notably universities, schools, and community-based organizations), can gradually inform institutional programs without necessarily leading to rapid, city-wide scaling. We can point to a few concrete examples of how the artefacts and their documentation guided adjustments in programs and institutions. In Siloé (Colombia), the local team held five participatory workshops with women leaders and around twenty students from the *Institución Educativa Multipropósito* (in *Comuna* 20). These sessions clarified the main motivations for sustaining food initiatives while also surfacing the most persistent implementation barriers. This shared diagnosis helped build a common language and produced practical inputs. It documented concrete constraints (lack of space, time, and teamwork) as well as institutional bottlenecks (infrastructure, crime, scarce resources, and limited physical space). In turn, these insights can help orient programs and future projects in the area, including strengthening waste management practices, organic-waste valorization, and sustaining school-based activities. In Valle Nonguén (Chile), the Aula del Sol became part of the school's day-to-

day work within its *Entorno Educador*. Over time, the space also opened to nearby community activities, such as workshops linked to the school's community garden. In Usme (Colombia), Pontificia Universidad Javeriana used actor maps to help local leaders identify institutional contacts such as the Botanical Garden, the Office for Women, the Office of Health, IDARTES, the local Mayor's Office, the local Police Office, and the District Office of Planning. In parallel, the team left dissemination resources to sustain visibility (videos, cartography, and printed booklets), which have been used to promote the *Ruta Agroturística La Requilina*.

All these results led us to **create the Identity–Struggle–Artefact Framework**. This analytical tool is rooted in empirical evidence from SUSTENTO and builds on post-colonial and decolonial approaches, recognizing that analytical tools traditionally used in humanitarian and development practice—such as baseline assessments, logical frameworks, or imported diagnostic models—are often unable to grasp the dynamic social strengths, contradictions, tensions, and vulnerabilities that characterize these contexts. Externally developed tools tend to project onto individuals and communities in the Global South, categories, assumptions, and models of thought from the Global North. Many of these traditional tools, therefore, fail to reflect lived realities, local norms, values, rituals, and practices, and the multiplicity of mechanisms that shape territories where informality is frequent.

The framework avoids both a pejorative and a romanticized view of contexts of poverty and marginalization. It recognizes the strengths of people's actions, but also their vulnerabilities and the tensions and conflicts that emerge in complex social systems. It recognizes that informal settings are not homogeneous or uniformly cohesive communities or settlements. It helps us understand *why* and *how* solidarity, strengths, and collective work coexist with vulnerabilities, conflict, and tensions. The framework recognizes, for instance, that individuals may support collective action while also competing for influence and scarce resources (space, water, materials, funding, etc.). Informal settings can't be reduced to the label of "the community." These are places where different identities overlap and sometimes collide, where various struggles may align, but also contradict each other. Bottom-up efforts sometimes help unite some people and create cohesion among them, while excluding others. Frictions around the use of space, power, religion, gender roles, and implementation strategies shape everyday governance as much as cooperation, solidarity, and empathy do. By recognizing the complexity of these social relationships, the framework allows us to understand why certain initiatives flourish, why others fail, and how communities negotiate and develop solutions in contexts of constant uncertainty.

The ISA framework rejects the idea that informality simply represents absence, deficits, chaos, lack of resources, or disorder. Instead, it recognizes that alternative forms of organization and production co-exist, based on social, political, cultural, and spatial dynamics, even when they do not align with institutional models, codes, or norms. The ISA framework helps analyze local phenomena **as they are on the ground**, through the lenses of community-based values, norms, emotions, conflicts, identities, and forms of organization. Rather than prescribing or evaluating communities and their conditions according to external indicators, ISA begins by recognizing the value of situated knowledge, informal norms, vernacular institutions, narratives, traditions, rituals, and everyday practices that structure social groups and territories.

**Table 6.** Identity–Struggle–Artefact Framework.

| | IDENTITIES<br>Acts of existence | STRUGGLES<br>Acts of resistance | ARTEFACTS<br>Acts of influence |
|---|---|---|---|
| **LEGITIMATION**<br>Potential sources of legitimacy | Who are the people in place? Where do they come from? What cultural traits do they share? What ideas make them proud? In which way do they connect with the territory? How are identities legitimized? Who are the key actors who represent the social group? | How do people identify and define social and environmental injustices? How are identities legitimised? How are social causes justified? | How do people identify problems and potential solutions? How are potential solutions legitimised? How are priorities defined? |
| **EMOTIONS**<br>Potential engines of change | How do people feel about their own identity and other identities in place? How do people create a sense of collective identity? What emotions are important and why? | How do people feel about ongoing social and environmental injustices? How do people motivate others to participate in acts of resistance? | How do people feel about the identified problems and potential solutions? How do people motivate others to engage in specific acts of influence? |
| **AGENCY**<br>Potential actions | How do (and how can) people claim and reinforce their identities? What rituals and traditions are important and why? What actions make them proud? | How do (and how can) people claim and reinforce their struggle? What actions are key to engage others in acts of resistance? | How do (and how can) people claim and reinforce their perception of the problems and potential solutions? What rituals and traditions produce change in the territory? |
| **TENSIONS**<br>Potential barriers to action | Which identity groups clash, compete for recognition, or contest origin stories? Who claims the right to belong, and how do these tensions undermine mutual recognition, traditions, and collective action? | Which struggles compete or contradict each other? Which groups prioritize different injustices or emotional drivers? How do rivalries and internal fractures undermine mobilization, weaken collective resistance, and make some struggles unsustainable? | Which artefacts create exclusion or conflict? Who controls their placement, use, or meaning? Which competing projects clash? How do divergent interpretations turn artefacts into barriers rather than shared solutions? |
| **CONCERTATION**<br>Potential collective solutions | How do people negotiate identities? How do they solve conflicting ideas about who they are and where they come from? | How do people negotiate the definition of social and environmental injustices? How do they prioritize acts of resistance? | How do people negotiate possible changes? How do they prioritize specific interventions? How are common objectives defined? |
| | **Desired continuity**<br>What *should* remain | **Desired change**<br>What *should* change | **Possible change**<br>What *can* change |

# 9. Overall Assessment and Recommendations

Through **an ambitious research-action plan, SUSTENTO contributed to strengthening the resilience of AFS** in six informal settings in Colombia, Ecuador, Chile, and Cuba. It provided a significant contribution to common debates about food systems. Despite years of research, experts still do not know to what extent AFS can help reduce the "food problem" and poverty in the Global South. Organizations interested in solving these problems have often relied on the notion of food security. Critics of the food security notion, however, have argued that improving food conditions is connected to the political, social, cultural, and psychological benefits of AFS. SUSTENTO shows that **the capacity of AFS to reduce quantitative and qualitative deficits while also reducing vulnerability to major shocks is mediated by identities, struggles and artefacts, where emotions, legitimacy, tensions, and concertation play a crucial role.** AFS can reduce vulnerabilities, not only through the production of food itself, but by reinforcing social networks and creating spaces for both acts of existence and collective acts of resistance. It is in this way that engagement in AFS helps participants address risks and social injustices, including violence, crime, oppression, and patriarchal structures.

The local view of "the problem" and its "solution" contrast with authorities' approaches. Authorities tend to highlight food insecurity as a problem to be fixed by enhancing systems' efficiency, building infrastructure, bringing "development" to impoverished areas, and producing and distributing more food. But **local leaders and residents tend to have a more optimistic view of their own food systems when compared to external stakeholders**. This is perhaps one of the reasons why they put less emphasis on food yields and more on other benefits of alternative food systems, such as psychological, educational, and cultural outcomes. Different motivations and uncertainty create **tensions in both food programs and policy**. Food programs and urban policy must reflect the real struggles that exist in informal settlements and must consider the influence of constant tensions and conflicts. Local people producing food will not easily eliminate the food problem, but engagement in AFS helps transform space, define and express normative principles, reify identities and advance social struggles.

Interventions must **refrain from classifying and evaluating local initiatives according to external criteria**. They must start by revealing their internal logic, capacities, and coherence. They must start by understanding not only what individuals and social groups do, but why they do it, and how identities, emotions, legitimacy, and concertation shape the possibilities for continuity, resistance, and transformation. Future work must analyze space, tensions, time, emotions, legitimacy, and manifestations of acts of existence and acts of resistance in other places. It must also focus on understanding the role of traditions, rituals, and local knowledge in food systems. We invite food companies, NGOs, governments, and practitioners to shift their orientation: from delivering solutions to accompanying processes, from imposing frameworks to recognizing vernacular knowledge, and from treating informal settings as exclusively vulnerable to acknowledging local leaders and community members as capable, organized, and powerful actors. We invite them to remember that by the end of SUSTENTO a local leader in Usme concluded: "we have recovered knowledge from our grandparents… that was just about to get lost." This is the kind of knowledge that has sustained and can continue to sustain generations of people in Latin America and the Caribbean.

**Some key points to remember**

Local food production helps reduce risks, but not for the reasons most stakeholders think. AFS in urban and peri-urban informal settings in Latin America and the Caribbean are not necessarily about producing massive amounts of food, but about creating the social and cultural fabric that is needed to face tensions, uncertainty, hostile environments, and current and future risks.

Local leaders and residents in informal settings want some form of change, but they also value continuity, traditions, rituals, and culturally relevant practices.

There is a structural difference in the way local people and external stakeholders perceive food systems in informal settings. These differences help explain the functioning of AFS.

Urban agriculture programs and urban policy must address common tensions, conflicts, and sources of uncertainty that exist in informal settings.

GEI transformation remains incomplete in Latin America and the Caribbean. Future initiatives need sustained resourcing for women-led organizations, and continued attention to tensions in places where patriarchal structures and violence are common.

Artefacts are effective spaces of collaboration, concertation, and translation. They produce positive change in space, and several cultural, social, and environmental benefits. They provide ideal opportunities to engage with local leaders and citizens in informal settings.

AFS in informal settings rarely achieve stabilization, so scaling them is challenging.

To understand informal settings, listen before diagnosing; observe before prescribing; recognize emotional, symbolic, and social realities before developing technical ones; ground interventions in socio-cultural legitimacy rather than institutional categories; and treat local initiatives as constant processes of negotiation, identity, resistance, and collective learning.

Trust, legitimacy, emotions, tensions, and acts of existence and resistance are the key components of local agency in AFS.

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