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Maraisa Resende Braga, Izabela Marques dos Santos, Camila Alvez Islas, Mariana Oliveira Ramos, João Custódio Fernandes Cardoso; Djalma Roecker Júnior; Daniela Aparecida Pacífico, Ilyas Siddique

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Maráisa Resende Braga

bragamaraisa@gmail.com

Postgraduate Program in Agroecosystems (PGA), Center of Agrarian Sciences (CCA), Federal University of Santa Catarina (UFSC), Florianópolis, SC, Brazil

<https://orcid.org/0000-0003-3715-5447>

Izabela Marques dos Santos

Applied Ecology Lab, Center of Agrarian Sciences (CCA), Federal University of Santa Catarina (UFSC), Florianópolis, SC, Brazil

<https://orcid.org/0009-0001-5681-093X>

Camila Alvez Islas

Conservation Leader at The Nature Conservancy - Brasília, Brasil

<https://orcid.org/0000-0002-6797-8519>

Mariana Oliveira Ramos

Postgraduate Program in Agroecosystems (PGA), Center of Agrarian Sciences (CCA), Federal University of Santa Catarina (UFSC), Florianópolis, SC, Brazil

<https://orcid.org/0000-0003-2862-9882>

João Custódio Fernandes Cardoso

Postgraduate Program in Ecology, Conservation and Wildlife Monitoring, Federal University of Minas Gerais (UFMG), Belo Horizonte, MG, Brazil

<https://orcid.org/0000-0002-0411-8159>

Djalma Roecker Júnior

Postgraduate Program in Plant Genetic Resources (RGV), Center of Agrarian Sciences (CCA), Federal University of Santa Catarina (UFSC), Florianópolis, SC, Brazil

<https://orcid.org/0000-0003-1163-5768>

Daniela Aparecida Pacífico

Postgraduate Program in Agroecosystems (PGA), Center of Agrarian Sciences (CCA), Federal University of Santa Catarina (UFSC), Florianópolis, SC, Brazil

<https://orcid.org/0000-0002-7031-166X>

[Ilyas Siddique](#)

Center of Agrarian Sciences (CCA), Federal University of Santa Catarina (UFSC), Florianópolis, SC, Brazil

<https://orcid.org/0000-0002-0519-2086>

Abstract

Food sovereignty constitutes a counter-hegemonic paradigm that holistically links environmental, social, cultural, nutritional, economic, and political spheres. We propose a multidimensional and adaptable Food Sovereignty Assessment Tool (IASA – Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*) to analyze local realities while fostering autonomy and rights awareness—the cornerstones of food sovereignty. Developed through a literature review and collaborative validation with researchers, peasants, and social movements in Brazil, the IASA engages with the diverse agricultural systems of the Global South. It offers two versions: i) a Detailed version (172 indicators) for academic and technical research, and ii) a Summarized version (57 essential indicators) as a participatory tool for community self-assessment, featuring reflective exercises and collective debate. By bridging scientific and traditional knowledge, the IASA seeks to advance the debate and action on food sovereignty in three key areas: academia, critical reflection among farming families, and support for collective decision-making to strengthen family, peasant, and indigenous agricultures.

Key words: Agro-ecological systems, family farming, food and nutritional security, rural communities, traditional agricultural systems.

1. Introduction

Since the research and debates by Josué de Castro in Brazil, across Latin America and the wider Global South, the connection between food, economic policy, and the environment has become a matter of public health. Hunger can no longer be understood as a demographic issue since it stems from social inequality, which generates poverty and lack of access to healthy food (de Castro, 1954, 1984). de Castro's perspective on food issues in Global South countries is closely related to the paradigm of food sovereignty (FS), despite the latter having emerged 50 years after the publication of the seminal book *'The Geography of Hunger'* (Prato de Ciência, 2024). Both share an anti-colonial view regarding the origins and drivers of food and nutritional insecurity.

Food Sovereignty is defined as a set of rights relating to access to land, water, culturally appropriate food, seeds, and biodiversity. It defends the rights of Indigenous Peoples and Local Communities and implies socially equitable and environmentally viable relationships (La Via Campesina, 2007). It was established as a political, ecological, and social discussion that presents an alternative to the currently dominant, oppressive, and increasingly unequal food system. The development of this paradigm, led by La Via Campesina movement, focuses on peasant autonomy and social control of the agri-food system (Chappell and Schneider, 2016; La Via Campesina, 2007). Its current perspective values the origin of food and the engagement between urban and rural areas in local solutions, rejecting homogenization in both agriculture and food culture.

In Brazil, the Organic Law on Food and Nutritional Security (Brasil, 2006) consolidates its relationship with FS as a guiding principle for achieving Food and Nutritional Security (FNS). It includes, within the concept of FNS, FS's dimensions as its foundation: access and implementation of "health-promoting eating practices that respect cultural diversity and are environmentally, culturally, economically, and socially sustainable" (Bezerra, 2021). Many determinants of FNS lie in social and environmental domains, such as access to land, water, agricultural and environmental policies, sanitation, health, education, among others (Kepple and Segall-Corrêa, 2011; Lopes et al., 2022). Furthermore, access to heirloom seeds, agrobiodiversity, community organization and governance, and their production, processing, and marketing models are also key to ensuring the continuity of FNS in peasant communities. These combined elements form the FS paradigm (La Via Campesina, 1996, 2007, 2018), bringing these concepts closer from a Latin American perspective (Bezerra and Trench, 2015).

Peasant communities in Brazil and Latin America that embody dimensions of FS are recognized for maintaining biodiversity, reducing poverty, sharing land, and promoting FNS (Chappell and Schneider, 2016; Mota et al., 2021). The positive interactions they foster are studied to support their continuity, highlight them as successful initiatives, and inform public policies and programmes that address their complexity (Agência Senado, 2024; Chappell and Schneider, 2016; Hanspach et al., 2017; Wittman et al., 2017). Reconciling food and nutritional security with the human right to adequate food — while preserving nature, traditional knowledge, cultural diversity, and socially just relations — remains a challenge for social movements, indigenous peoples,

and local communities (La Via Campesina, 2018), as well as for public policies and legislation in some countries (Bezerra and Trench, 2015; Wittman and Blesh, 2017).

At the national level, FS risks being co-opted into narratives of national food self-sufficiency, reverting to an industrial agriculture logic (Mendes and Gonçalves, 2023; Waldmueller and Avalos, 2015). International FS assessment frameworks aim to stimulate political debate and provide standardized data for global movements (Binimelis et al., 2014). However, limitations persist in data availability on seed access, credit, social organization, culturally appropriate food, and entire dimensions such as Processing and Marketing, Production Models, and Governance (Binimelis et al., 2014; Ortega, 2010; Ruiz-Almeida and Rivera-Ferre, 2019).

Local FS assessments based on international indicators (Cândido and Sturza, 2018) often overlook themes relevant to rural families and communities. Conversely, participatory evaluations can effectively address local specificities, foster self-reflection, and empower grassroots movements to envision their FS (Badal et al., 2011; Binimelis et al., 2014). Yet their context-dependent nature limits the transferability of indicators across farming communities, as they prioritize local relevance over generalizability. Socio-cultural aspects — such as gender, cultural identity, food traditions, knowledge systems, and socially oppressive relationships — are frequently underaddressed in local FS, agroecosystem, or agroecology assessments (Jernigan et al., 2021; Cândido and Sturza, 2018; Petersen, 2021; Vallejo-Rojas et al., 2016; Waldmueller and Avalos, 2015).

Food and Nutrition Security assessments in Brazil primarily rely on the Brazilian Household Food Insecurity Scale (EBIA, in Portuguese) (Segall-Corrêa et al., 2014), which focuses on household income and food consumption (Lopes et al., 2022; Vilas Boas, 2023). Adapted versions of EBIA have been developed for traditional peoples and communities (Lopes et al., 2022) and Indigenous populations (Athila and Leite, 2020; Segall-Corrêa et al., 2014). These tools assess household food insecurity, emphasizing food access, including some questions on dietary diversity. Although the conceptual foundations of FNS align somewhat with the FS paradigm, a comprehensive FS perspective is needed to develop assessment tools that fully capture its multidimensional nature in both evaluative and reflexive terms.

Recognizing that FS is "a process that adapts to the people and places where it is put into practice" (La Via Campesina, 2018), and considering these evaluative contexts,

we identified a valuable opportunity to develop a robust assessment tool. We therefore developed the Food Sovereignty Assessment Tool (IASA – Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*) to collectively evaluate traditional, agro-ecological, organic, and/or conventional farming systems (and others) through the lens of FS. The IASA also serves as a formative and self-reflective instrument for these communities. It is a local-level FS assessment with a semi-structured qualitative-quantitative interview designed to encompass Brazil's diverse agricultural systems. In addition, the instrument is useful for application in any other location, providing standardization of methods and enabling comparison of results from different studies.

To develop the IASA, we created a conceptual framework based on the axes of FS, identified relevant indicators from the literature, and validated the tool with experts, including researchers, students, rural extension workers, farmers, and social movement representatives. Next, we applied the detailed version of the IASA with 29 families across 14 communities in three Brazilian states characterized by different sociocultural and ecological circumstances: Santa Catarina, Rio de Janeiro, and Minas Gerais states.

We presented the IASA in two formats. The Detailed IASA comprises 172 indicators and follows an extended structure designed for scientific research and technical studies seeking to capture and understand the complexity of FS. Additionally, we developed the Summarized IASA, with 57 indicators, as a participatory self-assessment tool for community meetings and simplified surveys. Both IASA versions address a gap in FS assessment methodology by combining a standardized evaluation with robustness derived from prior studies and flexibility to accommodate diverse agricultural systems.

2. Development of the Food Sovereignty Assessment Tool (IASA)

The conceptual foundations of the IASA are grounded in the peasant identity as defined by Desmarais (2008), who emphasized their connection to the land as "people of the earth", exemplified by a Canadian farmer's perspective. This includes terms such as "peasant, paysan, paysanne, campesino/a, small farmer, farmer, producer, rural worker, or Indigenous peasant" (Desmarais, 2008). We adopt the definition of food sovereignty (FS) from the Nyéléni Declaration:

"Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their

right to define their own food and agricultural systems." (La Via Campesina, 2007).

The development of the assessment tool followed six key stages (Figure 1). First, we conducted a literature review to establish the theoretical framework for our conceptual matrix. For the dimensions (or axes) of FS, we adopted the framework proposed by Ruiz-Almeida and Rivera-Ferre (2019), namely: Access to Resources and Services; Production Model, Processing and Commercialization, Food and Nutritional Security, Public Policies and Governance, and Sociocultural Aspects (Table 1). This final axis was broadened to include other key social and cultural dimensions of food sovereignty besides gender—including generation, cultural identity, traditions and ceremonies, traditional knowledge systems, conflicts, and rights violations.

We also conducted an in-depth review of key publications, including "Food Sovereignty: A Future Without Hunger" (La Via Campesina, 1996) and *Indicadores internacionales de Soberanía alimentaria: nuevas herramientas para una nueva agricultura* (Ortega, 2010), to establish guiding definitions for each axis, with a focus on local-level applicability (Table 1).

In these reference works, many aspects are claimed as people's rights, though this does not imply their full guarantee by nation states. Nevertheless, these remain crucial issues for advancing FS and can be assessed through examining access, autonomy in practice, or the effectiveness of implementation. Analyzing factors such as water access, territorial dispossession, gender equity, culturally appropriate food systems, and related dimensions provides critical insights into the fulfillment of established rights for communities (particularly women) and their ongoing violation or protection.

With the defined axes in place, we searched the literature for existing evaluation tools that investigated themes related to FS and focused on the local level. With this focus, we selected the following references:

- Agroecosystems in Brazil: Petersen (2021);
- Food sovereignty: Badal et al. (2011); Jernigan et al. (2021); Cândido and Sturza (2018); Vallejo-Rojas et al. (2016); and Waldmueller and Avalos (2015);
- Food and nutritional security in Brazil: Lopes et al. (2022) and Segall-Corrêa et al. (2014);
- Agroecological transition: FAO (2019).

In these studies, we identified 219 indicators and subsequently selected them based on the following criteria:

- i) Suitability for assessing FS in the Global South;
- ii) Indicator generality to encompass a wide diversity of agricultural systems;
- iii) Alignment with the established definitions for the axes of FS;
- iv) Focus on the local level;
- v) Complementarity and coverage within each axis, eliminating redundant indicators;
- vi) Avoidance of measurements or data collection methods that require data beyond dialogue with peasant families.

Through this process, we selected 60 indicators and established open-ended or fixed questions for data collection. After compiling the indicators, we developed the validation process for the IASA with experts (Figure 1, stages 3 and 4).

2.1 IASA Validation Process

The validation and adaptation process for the questions took place online in Portuguese between August 2022 and February 2023¹. For the validation, we employed the Delphi method, commonly used in studies involving experts to generate consensus, establish priorities, identify divergent viewpoints, or combine individual opinions (Marques and de Freitas, 2018; Varela-Ruiz et al., 2012). We developed a questionnaire asking experts to evaluate each IASA question regarding: 1) its "Importance within the axis", and 2) its "Appropriateness", i.e. how well they perceived the question could assess a specific indicator with peasant families. We used the semi-quantitative Likert scale for all questions (Dalmoro and Vieira, 2013). In this method, answers range between 1 and 5, where 1 = very poor, 5 = very good, with intermediate values denoting intermediate scores. Additionally, experts could provide open comments and suggestions for each question and axes.

The validation questionnaire was emailed to 287 specialists, including researchers, students, social movement activists, extension workers, and/or farmers, identified through Nongovernmental Organizations (NGOs), rural movements, research networks,

¹ Via the Google Forms questionnaire (accessible at: https://drive.google.com/file/d/1nn_XfgjhbUIBV5-ENS8qNMviZvTvE1UN/view?usp=sharing).

and agroecology and FS/security groups in Brazil and abroad. Recruitment also occurred via social media and the Applied Ecology Laboratory (LEAp) website at the Federal University of Santa Catarina, Brazil (<https://leap.ufsc.br/FS>). Participation required informed consent through a Free and Informed Consent Form².

We received contributions from 22 experts across diverse fields (food and nutritional security, agro-ecology, gender's studies, agroforestry systems, ecological restoration, food anthropology, rural education, production chains, agro-ecological gardens, medicinal plants, land reform, etc) working with various sociocultural groups of farmers (Indigenous Peoples, traditional communities, family farmers). Each axis received an average of 11 contributions (Access to resources and services N=10, Production models N=8, Processing and marketing N=11, Food and nutritional security N=14, Public policies and Governance N=12, Sociocultural aspects N=14), as respondents could select which axes to evaluate based on their expertise. We conducted individual follow-ups to clarify ambiguities and discuss suggestions until the final IASA format was reached.

Question Importance scores averaged above 4 (on the 5-point scale), meeting Delphi method standards (Marques and de Freitas, 2018), so all questions were retained. Seven questions scored below 4 for Appropriateness but had high Importance scores; these were reworded or split into multiple questions for better coverage, with expert input. Some validation suggestions were incorporated as open-ended questions to better capture complex multidimensional processes behind quantitative responses.

The Detailed IASA was then applied in interviews across 14 peasant communities in three Brazilian states (Santa Catarina, Rio de Janeiro, Minas Gerais), with results to be presented in a forthcoming paper (Figure 1, stages 5A-B). Field testing yielded improvements to question phrasing and alignment with adopted FS definitions. We subsequently developed the Summarized IASA version (Figure 1, stage 6A). Both versions will undergo community discussion phases to share FS evaluations and enable communities' self-assessment and reflection (Figure 1, stages 5C-6B).

² Approved by the Research Ethics Committee for Human Sciences at the Federal University of Santa Catarina (Ethical Approval Certificate No. 62721722.9.0000.0121).

3. Detailed IASA (Food Sovereignty Assessment Tool)

The Detailed IASA (Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*) contains 172 open- and closed-ended questions (Sup. Mat. A), organized thematically within each FS axis. Its primary purpose is enabling detailed FS assessments for research, technical studies, or other in-depth investigations (available in English, Portuguese, and Spanish in Suppl. mat. A).

Implementation requires interviewers/moderators to be familiar with the IASA methodology and perspective to conduct interviews coherently and reproducibly. The average administration time per family is 6 hours, which can be divided across multiple visits. Each question offers response options (Figure 2). Closed questions use categorical (yes/no) or semi-quantitative Likert scale responses from 1 to 5 points, regular or inverted to maintain a consistent relation with FS. The standard Likert scale responses assess five possibilities: a) Scores, where 1 and 5 indicate situations that are farthest and closest to FS, respectively; b) Frequency; c) Access/action; d) Quantity; and e) Evaluation (Table 2). The procedures for processing the Detailed IASA data are described in Suppl. mat. B. In field interviews (step 5A of Figure 1), we applied the Detailed IASA via the ZohoForms app. The form could be completed on mobile phones, facilitating data collection in areas without internet access.

From the perspective of social control over food systems, a cornerstone of FS is the study by Chappell and Schneider (2016), which examines issues such as using external inputs, seeds, and labour, prioritising the autonomy of families and communities. This is because reduced external dependencies and greater local decision-making capacity strengthen the exercise of FS. If applied in other countries, certain questions require adaptation to the local context, such as those on household income levels (2.4) or native vegetation conservation (2.34 and 2.35, referring to Brazil's Permanent Preservation Areas and Legal Reserves, protected by national law).

The issue of climate change was incorporated later, based on interview accounts and recent records of natural disasters affecting farmers, such as floods, droughts, hail, and cyclones. Although this topic was not part of the initial discussions on FS, it has been highlighted in recent literature (Martínez et al., 2024). It has become critical due to its threats to small farmers' ability to produce food and remain on their land.

4. Summarized IASA (Food Sovereignty Assessment Tool)

To enable community-level use, we developed the Summarized IASA (Figure 1, stage 6A). Facilitated by a moderator, this self-assessment tool takes ≤ 2 hours, which may be split into multiple sessions (see Suppl. mat. C). It was synthesized into 57 essential indicators for application in community meetings or focus groups, empowering participants to evaluate their own FS.

The Summarized IASA employs three phases: i) Opening ritual (*mística*); ii) Two self-assessment tool options; and iii) Reflective closing to inform community decision-making. As a participatory methodology, it creates space for oral and visual expression, positioning participants as active contributors to discussions and decisions (Geilfus, 2009).

4.1 Ritual Introduction to Food Sovereignty

The initial reflection on Sobal should begin through *mística*—a spiritual and political methodology ever-present in Via Campesina gatherings and rural social movements. To spark dialogue, we propose using art as a tool: participants will 'read' a watercolor painting, describing what they see and interpret. The painting depicts a map of Latin America and the Caribbean, with hands of diverse ethnicities offering a variety of beans (Figure 3). This imagery evokes both the collective building of Sobal by farmers, peasants, and Indigenous peoples, and the agrobiodiversity, traditional knowledge, and management practices embedded in it.

In the background, the presence of corn and squash blossoms complements the concept of the "Three Sisters," or more broadly, the *Milpa* system. This traditional polyculture farming system originated in Mesoamerica and may include other intercropped species (Fonteyne et al., 2023). *Milpa* has been increasingly underutilized due to socioeconomic pressures common to many peasant realities, leading to reduced food and nutritional security for families (Fonteyne et al., 2023). Within this context, we understand it as symbolic in the path toward food sovereignty - ensuring the reconciliation between food/nutritional security (FNS) and biocultural conservation in peasant, indigenous, and traditional agriculture.

After participants read the elements of the watercolor, the definition of Sobal can be read around the map in Portuguese by rotating it. This also evokes the decolonial concept associated with the term "*sulear*³." For use in other languages, the Sobal concept should accompany the watercolor as a separate text for reading at this moment. With the Sobal definition in mind, participants are invited to talk about their polycultures, crop mixtures, typical intercropping practices, and how these relate to their food sovereignty.

4.2 Implementation of the Summarized IASA

Two participatory tools were established for the FS self-assessment: Radar Charts and Interconnection Circles. Depending on the group's preference, these may be used separately or combined. An explanatory table of the Summarized IASA indicators is provided in Sup. Mat. C (available in English, Portuguese, and Spanish). The radar chart tool consists of one chart per axis with a 1 – 5 rating scale for each indicator (Figure 4, available in Portuguese and Spanish in Suppl. mat. D), where participants indicate how they assess these indicators in their community. In this methodology, a score of 1 and 5 represents the community's weakest and strongest exercise of FS for a given indicator, respectively. Each chart includes blank space to allow participants to add an indicator they consider important for axis evaluation. This tool enables clearer visualization of the community's FS practice.

For the interconnection circles tool (Figure 5, available in Portuguese and Spanish in Suppl. mat. E), we incorporate the perspective that "Food Sovereignty views food and agriculture, ecosystems and cultures as intrinsically linked – a rupture in one system will likely mean a rupture in another" (La Via Campesina, 2018). This instrument highlights interrelationships within and between FS axes, demonstrating their interdependence. The tool displays all 57 indicators in a circular format, allowing participants to draw

³ **The term *sulear*** refers to a geopolitical perspective on knowledge systems, challenging dominant North-South asymmetries through decolonial critique. By centring local epistemologies, the concept "paves the way for decolonising our systems of thought – in academia, schools, and daily life". **Source:** Escobar, Arturo. (2019). Desde abajo, por la izquierda, y con la Tierra: SUReando desde Abya Yala/Afro/Latino/América. **Revista Interdisciplinaria Sulear**. 2(2), 36-49.

connections they identify between FS indicators across the axes, forming a network. These connections between indicators may prove highly relevant to communities, representing widely recognized relationships or unexpected ones that generate new reflections. The presence (or absence) of connections, or any isolated indicators, may reveal existing problems or unresolved issues requiring attention.

In all cases, moderators should ideally conduct a prior study of the Detailed IASA to properly facilitate this participatory methodology, resolving doubts and providing guidance where needed. This preparatory work ensures the mediator can effectively support participants' engagement with the tool while maintaining methodological rigour.

4.3 Closing Session

To conclude the activity and consolidate reflections, we suggest posing the following questions to the group:

- i) What are the biggest challenges preventing FS in practice?
- ii) What actions could bring us closer to realizing greater FS?

Implementing both assessment tools – the Detailed IASA and Summarized IASA – should be preceded by an environmental-historical review of the community, region, or territory. This preparatory work should incorporate document analysis, review of prior research undertaken in the community or territory, and dialogues with local stakeholders. This approach enables researchers or facilitators to employ triangulation of methodologies (Verdejo, 2006) while ensuring a comprehensive understanding of the broader socio-ecological context in which FS is being examined.

5. Discussion

5.1 Context and Solutions Proposed by IASA

The challenge of developing FS assessments that capture the inherent multidimensionality is recognized in both international (Binimelis et al., 2014; Ortega, 2010; Ruiz-Almeida and Rivera-Ferre, 2019) and local studies (Badal et al., 2011; Jernigan et al., 2021; Martínez et al., 2024; Vallejo-Rojas et al., 2016). Local specificities of interests and situations form the foundation for global debates on FS (Desmarais, 2008). Research on peasant families and communities can address dimensions like culture, governance, production models, and local market systems more effectively. Culturally appropriate foods, women's participation, traditional knowledge and celebrations, heirloom seed use, autonomy, and network building are examples of issues that can be studied at this level with the relevance they hold for FS. This evaluative gap justifies developing tools capable of capturing these multiple dimensions while maintaining practical applicability.

Within this context, FS must be addressed inclusively, avoiding overspecialized questions that limit the assessment's broad, action-oriented application. The IASA was designed to bridge this gap, creating a robust yet accessible evaluation applicable to Brazil's (or any other) diverse peasant agricultural systems. We included only questions that do not require expert input, costly or technical measurements, such as food diaries, anthropometric assessment, soil analysis, land surveying, or species identification. Questions also aim to facilitate autonomous implementation while allowing researchers or extension workers to pursue deeper investigations based on IASA findings.

5.2 Methodological Considerations in Field Interviews

Interviews begin with an introductory question about the family's history in the area, aiding contextual understanding and fostering active listening (Louw et al., 2011). This approach and the interview duration build trust, enabling respondents to discuss sensitive issues such as conflicts, rights violations, or food shortages, which are critical themes for FS. To minimize research bias, we deliberately avoided direct questions about respondents' knowledge of FS in the Detailed IASA. However, prior disclosure of the research theme and consultation protocols remains essential.

Many Brazilian peasant communities lack awareness of FS debates, unless they are engaged with rural social movements. For instance, movements linked to La Vía Campesina, including the Landless Rural Workers' Movement (Movimento dos Trabalhadores Rurais Sem Terra – MST), the Small Farmers' Movement (Movimento dos Pequenos Agricultores – MPA), the Peasant Women's Movement (Movimento de Mulheres Camponesas – MMC), and other Brazilian agrarian movements research, train, and advocate this perspective (Santos, 2016; Souza and Schneider, 2023). Even within such movements, theoretical frameworks and political decisions take time and encounter challenges to consolidate practices across their member bases (Souza and Schneider, 2023). Thus, there is still a long way to go before FS is fully assimilated, both in the discourse and the actions of these movements' grassroots. This gap reinforces the importance of having an effective instrument for assessing FS in research involving peasant families and its potential as a formative tool.

The IASA includes questions aimed at peasant families, the community or settlement to which they belong, and the organizations they are involved in. Just as the situations experienced by families may reflect broader processes, interaction within and between communities (or the lack thereof), along with their organization and governance, also has implications for household-level FS.

During the interview, the selection of responses on the scale must be constructed collaboratively between the interviewer/mediator and the interviewed family, and should be adapted to each reality being assessed. For example, in the questions: “1.8) Is drinking water available throughout the year?” “1.9) Is water available for animals throughout the year?” and “1.10) And for irrigation?” In previous applications of the IASA, we have received answers stating that yes, water is available year-round. However, the garden and livestock must be kept small, water is prioritized first for human consumption, then for animals, and lastly for irrigation, and during dry months, water may be delivered by tanker trucks. This case demonstrates that many variables assessing FS are complex and not specifically linearly related to FS, thus rendering a linear interpretation of Likert scores or generic framing of questions insufficient, for instance, for water availability.

Thus, it is necessary to interpret reality alongside families to obtain more accurate, realistic, and contextualized responses. Open-ended questions involve how these

multidimensional variables with different characteristics relate to each other and the families. Addressing the inherent complexity of FS is fundamental to gaining a more comprehensive understanding and developing intervention strategies. This will require tools that allow the simple and intuitive summarization of such complex issues. For instance, Content Analysis enables the creation of response categories (Bardin, 2016). In addition, quantitative and qualitative data can be integrated through multivariate principal component approaches such as Factor Analysis of Mixed Data (FAMD) (Kassambara, 2013).

5.3 The Axes of Food Sovereignty and their Interconnections

The concept of multiple sovereignties (Iles and Montenegro de Wit, 2015) highlights the importance of networks among diverse actors in building more sovereign agrifood systems. In this proposal, the IASA maps these actors without including them directly in the interviews. When applied with a territorial focus, the instrument can facilitate the investigation of these networks across different communities. Future research could expand this approach by developing specific modules to assess interactions with governmental actors, social organizations, and forums.

Certain topics within IASA could arguably be placed under different axes or questions reorganized under alternative themes. For example, the Governance axis includes themes such as autonomy in determining crops and the management of common natural goods, which are also related to the Production model and Access to resources axes, respectively. Food source autonomy (which refers to the sources of family food, i.e. produced, collected, buying from the market, etc) and year-round food sufficiency, though also related to Governance, were addressed under the Food and Nutritional Security axis. This makes it possible to highlight the interconnections among the issues explored and demonstrates that crosscutting analyses can inform transdisciplinary action toward greater FS.

The Circle of Interconnections methodology is a tool that illustrates the diverse possibilities of interaction between variables and breaks away from the 'boxes' of the FS axes, which serves to help systematize all the themes that need to be assessed from the FS perspective.

Governance relates to the “power over food being controlled by those most involved in and affected by its production, distribution, and consumption,” as well as to local self-organization and the networks in which communities interact (Dekeyser et al., 2018). This critical dimension of FS is often treated under Civil Society Organization, which we have chosen to emphasize. Based on this perspective, we proposed Governance as a standalone axis, encompassing internal organization and management within communities, internal and external collaboration networks, and various aspects of autonomy. Food autonomy, seed autonomy, and input autonomy were addressed in the Food and Nutritional Security and Access to Resources and Services axes, respectively.

As for the format of responses, we opted to use closed-ended questions with Likert scale answers. The TAPE method (FAO, 2019), which characterizes the agroecological transition, uses a smaller set of questions and provides a more complex 0 to 4 scale, where each score corresponds to specific conditions. We believe that the 1 to 5 scale, or the semi-quantitative options we adopted, are more intuitive for both interviewers and interviewees, reducing complexity and allowing further analyses.

5.4 The Importance of Socio-environmental and Political Contexts for Local Food Sovereignty

With its focus on the local level, the IASA stands out for its capacity to capture the socio-environmental processes faced by peasant families in their territories. Issues such as conflicts, access to land and water, rural exodus, and difficulties accessing public policies highlight the impact of socio-environmental and political contexts on these communities. Patel (2009) reinforces that FS requires social change so that everyone can actively participate in shaping food policy, going beyond formal legal rights.

In Brazil, the National Policy on Food and Nutritional Security (SAN) aligns with the principles of FS, with the National Council on Food and Nutritional Security (CONSEA in Portuguese) playing a key role in monitoring and proposing public policies (Recine, 2023). However, under the Bolsonaro’s government (2019 – 2023), the dismantling of CONSEA and programs such as the Food Acquisition Program (PAA in Portuguese), along with the halting of indigenous land demarcation, worsened food and nutritional insecurity, leading Brazil to return to the Hunger Map in 2022 (PENSSAN, 2022). This

scenario illustrates how the influence of agribusiness political elites dismantled vital policies within a few years.

McKay and colleagues (2014) argue that FS develops when progressive states and social actors collaborate to restructure control and access to resources and political spaces. In Brazil, spaces such as the Brazilian Forum on Food and Nutritional Sovereignty and Security (FBSSAN in Portuguese) enable civil society participation. Still, they remain limited to already-engaged groups such as researchers and social activists. Additionally, there are municipal councils, many of which are consultative and lack decision-making power over public policies or budgets, limiting their effectiveness (de Azevedo et al., 2020).

The construction of FS must begin at the grassroots level, overcoming cultural and power-related barriers that hinder the inclusive participation of the diverse agricultural systems. Although influencing public policy is challenging in countries with less inclusive political systems, dismantling colonial power relations and promoting a more participatory democracy are essential steps towards consolidating FS by fulfilling its political component.

As a developing paradigm, FS contains practical-conceptual contradictions. For example, peasants may be sovereign in their decisions, but not all forms of production necessarily align with the principles of FS (Dekeyser et al., 2018). Self-determination, the appreciation of traditional knowledge, and governance are fundamental for constructing FS. These must be grounded in their use, management, and coexistence with nature, ensuring sustainable options for the future that are free from any form of human or environmental degradation (McElwee et al. 2020).

The IASA provides an assessment in which agroecological practices, the presence of conserved areas with native vegetation, protected zones, and the conservation of rivers, streams, freshwater springs, and soil management align with FS, as they promote healthier coexistence with the environment. Many of the less sustainable environmental and cultural “choices” made by peasants are, in fact, responses to the technological and cultural homogenization of agricultural systems (Toledo and Barrera-Bassols, 2015) and the pressures of a neoliberal consumer lifestyle. They may also reflect climate vulnerability or pressure from large-scale developments. Thus, pointing to the above principles as guidelines is crucial in building FS.

5.5 Potential and Future Proposals for the IASA

We do not expect this set of interview indicators to exhaust all possibilities within each axis, but rather that it will serve as a starting point for continued discussion and development of the instrument. Contributions from researchers, extension workers, farmers, and adaptations based on specific contexts can all help to mature the IASA. Likewise, developing complementary modules, as previously mentioned, could be valuable.

For instance, the IASA was not initially designed to focus on indigenous societies. Nonetheless, it includes questions relevant to family, peasant, and indigenous agriculture, such as land conflicts, preservation of traditions, and autonomy over seeds and crops. As such, it can be partially adapted, and future research could refine the framework to capture the cultural and political contexts of Indigenous peoples more effectively. Additionally, IASA applications can provide feedback to support its ongoing refinement.

In Catalonia, Badal and colleagues (2011) developed context-specific indicators. One of their functions was to promote self-reflection on FS in the participating communities and to help design future strategies (Binimelis et al., 2014). As Paul Nicholson stated in an interview: “what is now clear to La Via Campesina is that we must distinguish between spaces for reflection and debate and for organic articulation of these strategies” (Nicholson, 2022). In this sense, we hope the Summarized version of the IASA can foster practices aligned with FS and equip families and communities with a viable tool to reflect and evaluate their FS's most consolidated or fragile aspects and support them in devising actions. A self-assessment guided by a mediator can generate internal debate within the community, which is a path to self-organization and the formation of collective visions about how participants relate to key variables of FS. Thus, spaces using this tool can engage other communities within participating networks, thereby strengthening them further. They also help to highlight important collaborations with partners, institutions, and social organizations, reinforcing recognition, which is vital for the multiscale relationships that FS depends on.

We believe that the IASA gives materiality to the FS paradigm and reaffirms the ideas of Josué de Castro by supporting counter-hegemonic agricultural models that

promote access to land and FNS. It prioritizes people's autonomy over food and traditions through socioeconomically and environmentally healthy relationships. We hope peasant communities can strengthen their way of life and find the solutions they need using these tools on their path to FS.

6. Conclusions

The construction and effectiveness of Food Sovereignty (FS) in decision-making must begin at the grassroots level, just as this assessment tool was built. For this reason, we consider the focus of this instrument on peasant families and communities to be of great importance. A tool dedicated to assessing FS must responsibly combine rigorous scientific research with FS's conceptual and political alignment, a paradigm that questions the hegemonic agricultural system. Hence, this research took an academic approach, aiming to translate a field with a complex correlation of forces into the material reality of thousands of farming families.

The IASA materializes the dimensions of FS by linking theory and practice within local contexts. Capturing the full multidimensionality of FS is a challenge that led this instrument to pursue depth and interconnection among its dimensions, as well as the effort to translate these into practical situations that promote FS and can be assessed without the need for complex technical measurements. The interview questions are accessible to peasant families and communities and are guided by the autonomy principle. This does not negate the need for public policies, but equips farmers to claim their rights based on their FS.

The possibility for traditional and agro-ecological farming families and communities to use the IASA to initiate or strengthen their vision of autonomy over agricultural systems does not negate the need for national perspectives on FS. This should not mean the production of large quantities of food through monocultures with land and income concentration, but rather a household and community sovereignty focused on the FS of traditional, Indigenous, peasant, and resettled communities, and agroecological agricultural systems supported by structural national policies and aimed at producing healthy food for the population. We hope the IASA encourages the construction and discussion of FS among multiple actors and supports further research

in Latin America and beyond, testing the adaptability of IASA in different Global South contexts.

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Author contribution

M. R. B. and I.S. conceived the study; M. R. B., I. M. S. and M. O. R. projected the images, I. M. S. produced the figures, M. R. B. wrote the manuscript, M. R. B. painted the watercolor. All authors reviewed the manuscript.

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Competing interests

The authors declare no competing interests.

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Tables

Table 1: Conceptual framework outlining the six axes of Food Sovereignty (FS) and their operational definitions guiding the development of Food Sovereignty Assessment Tool (IASA – Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*).

Food Sovereignty axes	Food Sovereignty entails
Access to resources and services	<ul style="list-style-type: none"> - Access and usage rights to natural resources, particularly land, communal areas, water, seeds, foraging zones, extractive areas, hunting grounds, fishing waters, and livestock rearing spaces; - Independence in accessing agricultural inputs; - Access to basic and public services.
Production model	<ul style="list-style-type: none"> - Care, management, and preservation of natural resources, soils, biodiversity, and livestock; - Degrading production models, the use of agrochemicals, and monocultures; - Decent employment with fair wages and labor rights; - Diversification of production and food cultivation through ecologically appropriate methods to the local environment, using traditional or agro-ecological farming systems.
Processing and marketing	<ul style="list-style-type: none"> - Control over food and processed product marketing, exercised transparently by farmers themselves, ensuring fair income; - Prioritization of production for self-consumption, with commercialization as a secondary objective; - Prioritization of local and national economies and markets, through direct sales with reduced intermediary merchant control.
Food and nutrition security	<ul style="list-style-type: none"> - Access to safe food in sufficient quantity and quality for healthy and culturally appropriate nutrition; - Control over one's own food and nutrition; - Focus on food self-sufficiency.
Public Policies and Governance	<ul style="list-style-type: none"> - Access to and effectiveness of agrarian and agricultural policies (housing, land, water conservation, protection of natural areas, rural credit, rural education...); - Capacity building for peasant and family farming, artisanal fisheries, and pastoralism, with technical assistance when required; - Local self-help and social organization; - Autonomy in defining their own food and agricultural systems and managing their material, natural, and spiritual heritage.

Sociocultural aspects	<ul style="list-style-type: none">- Gender equality in access to public policies, land, credit, and decision making;- Inclusion of future generations and their interests;- Social relations free from all forms of oppression, discrimination, and violence;- Security of permanence in the territories of origin and self-determination of ethnic, religious and gender identity;- Valuing culture and traditional knowledge, ways of living and cultivating crops.
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Source: adapted from the following references: Food Sovereignty: a future without hunger (La Via Campesina, 1996), Declaration of Nyéléni (La Via Campesina, 2007), and Indicadores internacionales de Soberanía Alimentaria: Nuevas herramientas para una nueva agricultura (Ortega-Cerdà and Rivera-Ferre, 2010).

Table 2 - Likert scale used for semi-quantitative responses in the Detailed Food Sovereignty Assessment Tool (IASA – Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*).

Type of scale	← Further from FS		Closer to FS →		
Likert scale					
Ascending Scores	1	2	3	4	5
Positive Frequency	Never	Rarely	Sometimes	Often	Always
Access or Action	No	Little	Somewhat	A lot	Completely
Quantity	Nothing	Little	Half	Almost everything	Everything
Evaluation	Very bad	Bad	Fair	Good	Excellent
Inverted Likert scale					
Descending Scores	5	4	3	2	1
Negative Frequency	Always	Often	Sometimes	Rarely	Never
Negative Access or Action	Completely	A lot	Somewhat	Little	No
Negative Quantity	Everything	Almost everything	Half	Little	Nothing
Negative Evaluation	Excellent	Good	Fair	Bad	Very bad

Figures

Figure 1: Stages in the development of the Food Sovereignty Assessment Tool (IASA – Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*)

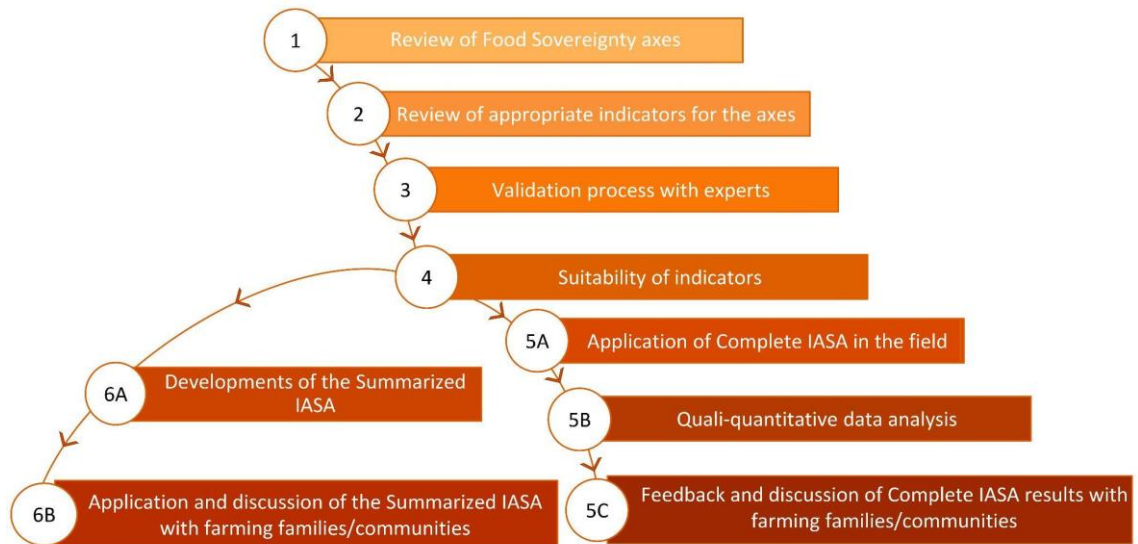


Figure 2 - Screenshot of part of the Detailed IASA structure (complete spreadsheet of all questions of all axes in Suppl. mat. A). (IASA – Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*)

Food Sovereignty Assessment Tool - IASA Detailed (from the Portuguese acronym) with the interview questions and their answer options, organized by themes within the six axes of Food Sovereignty.

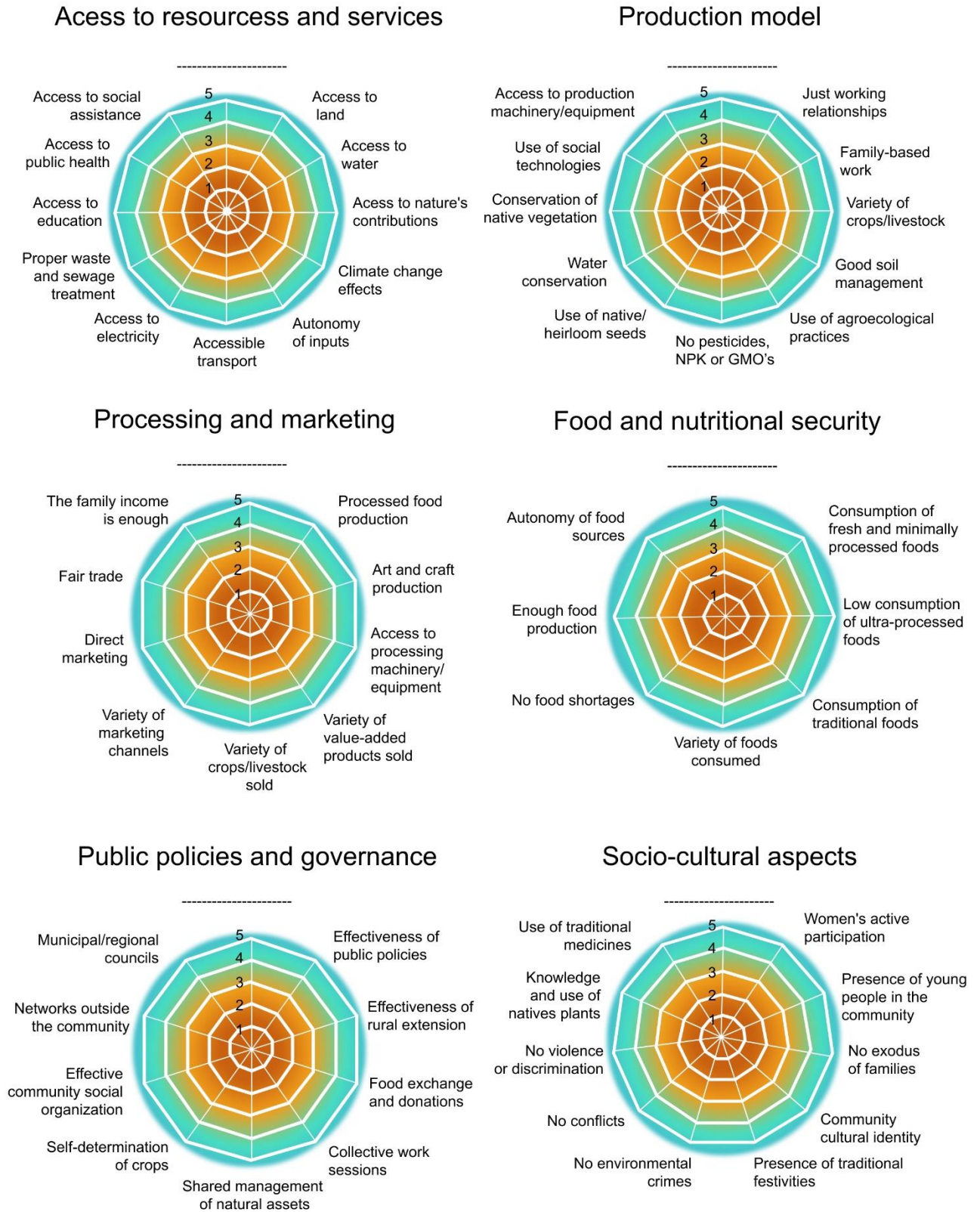
Axis 1 - Access to resources			
Theme	NO.	Questions	Answer options
Access to land	1.1	How did you access the land?	Table 1 (at the end of this document)
	1.2	Do you have enough access to land to produce food for the whole family?	Totally insufficient/ A little/ More or less/ Quite a lot/ Totally sufficient
	1.3	Are there shared plots of land in the community?	Table 1
	1.4	Have there ever been conflicts over land due to access or collection of a resource with adjacent neighbors, private or public works, mining, exploitation of natural resources, conservation units...?	Never/ Rarely/ Sometimes/ Often/ Always
	1.5	If so, have these conflicts affected the way you cultivate or treat your livestock?	No/ A little/ More or less/ Quite a lot/ Completely
	1.6	Did it affect the permanence on the land, did some families have to leave?	No/ A little/ More or less/ Quite a lot/ Completely
	1.7	Please tell us how it happened.	Open
Access to nature's contributions	1.8	Water availability	
		a) Is drinking water available all year round?	No/ A little/ More or less/ Quite a lot/ Completely
		b) Is water available for the animals all year round?	No/ A little/ More or less/ Quite a lot/ Completely
		c) And for irrigation?	No/ A little/ More or less/ Quite a lot/ Completely
		d) Where does your water supply come from?	Open
Climate change	1.9	Are there any plants or other elements of nature that the family needs or visits that are now outside your community's land?	No/ A little/ More or less/ Quite a lot/ Completely
	1.10	Which ones?	Open
	1.11	Has the family been affected by floods, hail, cyclones, or prolonged and extreme droughts?	Never/ Rarely/ Sometimes/ Often/ Always
	1.12	Has this threatened their ability to remain on the land or produce food?	Never/ Rarely/ Sometimes/ Often/ Always
	1.13	Has the family prepared or adapted their practices in any way? If so, how?	Open

Figure 3. Watercolor map used to introduce the Food Sovereignty (FS) concept during the opening ritual (*mística*) of the Summarized IASA participatory methodology. (IASA – Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*)



Source: "Abya Yala in Full Food Sovereignty". Watercolor on 300 gsm Canson paper, Van Gogh and Kog i Noor paints. Watercolor by Maraísa Resende Braga.

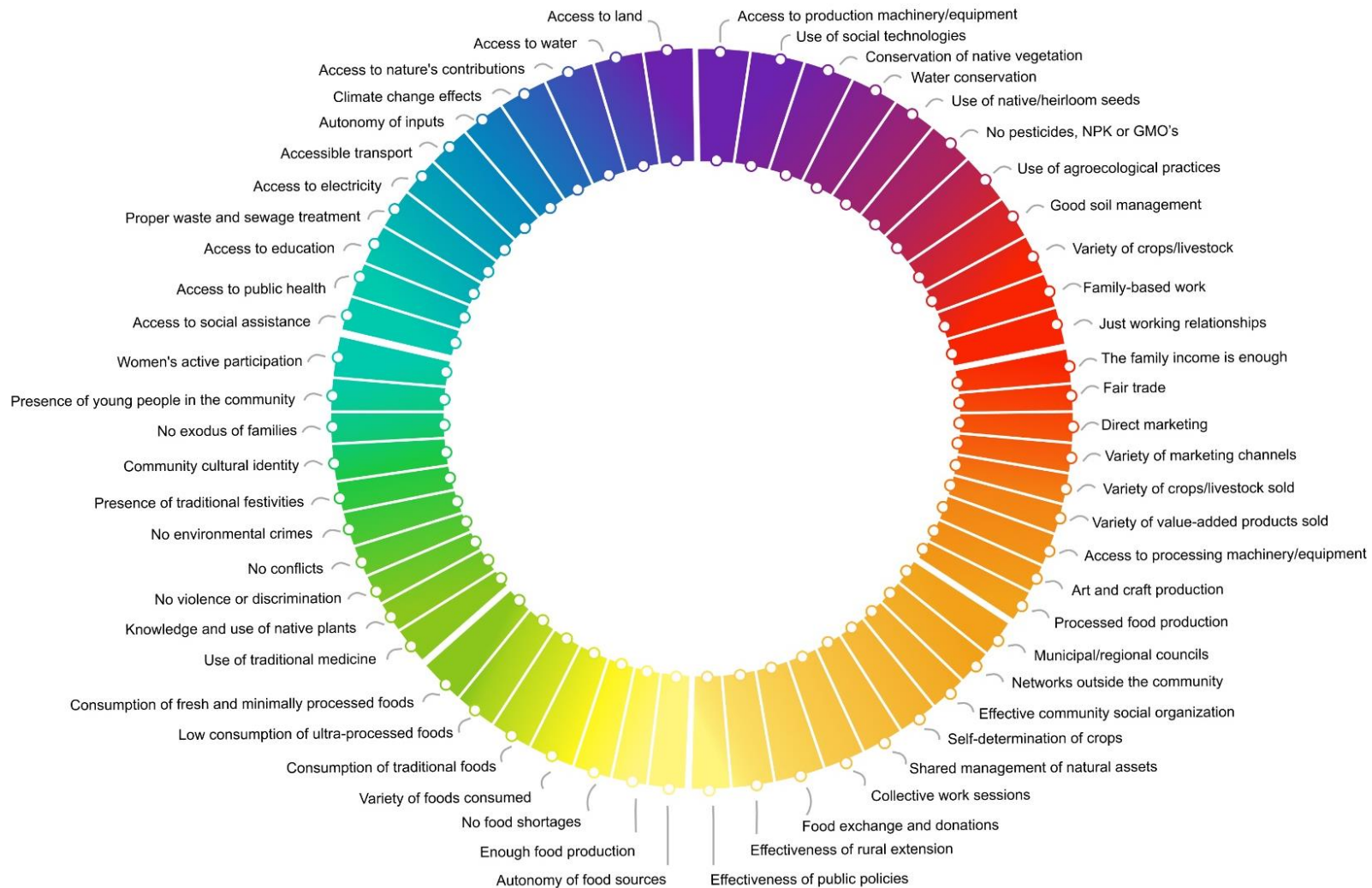
Figure 4. Food Sovereignty Assessment Tool – Summarized IASA (Radar Chart Version), a participatory methodology for local-level community self-assessment. (IASA – Portuguese abbreviation for *Instrumento de Avaliação da Soberania Alimentar*)



Legend: Indicators are evaluated as: 1 = Very low FS; 2 = Low FS; 3 = Moderate FS;
4 = High FS; 5 = Very high FS.

Figure 5. Food Sovereignty Assessment Tool - Summarized IASA (Interconnection Circle): A participatory methodology with peasant families for understanding interrelationships between Food Sovereignty indicators at the local level. (IASA – Portuguese abbreviation for

Instrumento de Avaliação da Soberania Alimentar)



Legend: Participants draw the connections themselves, revealing a network of relationships within their food sovereignty practice.

Supplementary material A
FOOD SOVEREIGNTY ASSESSMENT INSTRUMENT - IASA Detailed
English version

Identification of the interviewee and family:

Family code:

Date: / /

Names of the interviewees:

City/State:

Name of community/settlement/camp:

Name of property:

How do you identify yourself? () White, () Black, () Brown, () Indigenous, () Yellow

Religion:

Please tell us about your family's history in this place...

Food Sovereignty Assessment Tool - IASA Detailed (from the Portuguese acronym) with the interview questions and their answer options, organized by themes within the six axes of Food Sovereignty.

Axis 1 - Access to resources			
Theme	NO.	Questions	Answer options
Access to land	1.1	How did you access the land?	Table 1 (at the end of this document)
	1.2	Do you have enough access to land to produce food for the whole family?	Totally insufficient/ A little/ More or less/ Quite a lot/ Totally sufficient
	1.3	Are there shared plots of land in the community?	Table 1
	1.4	Have there ever been conflicts over land due to access or collection of a resource with adjacent neighbors, private or public works, mining, exploitation of natural resources, conservation units...?	Never/ Rarely/ Sometimes/ Often/ Always
	1.5	If so, have these conflicts affected the way you cultivate or treat your livestock?	No/ A little/ More or less/ Quite a lot/ Completely
	1.6	Did it affect the permanence on the land, did some families have to leave?	No/ A little/ More or less/ Quite a lot/ Completely
	1.7	Please tell us how it happened.	Open
Access to nature's contributions	1.8	Water availability	
		a) Is drinking water available all year round?	No/ A little/ More or less/ Quite a lot/ Completely
		b) Is water available for the animals all year round?	No/ A little/ More or less/ Quite a lot/ Completely
		c) And for irrigation?	No/ A little/ More or less/ Quite a lot/ Completely
		d) Where does your water supply come from?	Open
	1.9	Are there any plants or other elements of nature that the family needs or visits that are now outside your community's land?	No/ A little/ More or less/ Quite a lot/ Completely
1.10	Which ones?	Open	
Climate change	1.11	Has the family been affected by floods, hail, cyclones, or prolonged and extreme droughts?	Never/ Rarely/ Sometimes/ Often/ Always
	1.12	Has this threatened their ability to remain on the land or produce food?	Never/ Rarely/ Sometimes/ Often/ Always
	1.13	Has the family prepared or adapted their practices in any way? If so, how?	Open
Autonomy of seeds, seedlings and offspring	1.14	Where does the family get the seeds and seedlings they need to plant?	
		a) Rural Workers' Union	Never/ Rarely/ Sometimes/ Often/ Always

Theme	NO.	Questions	Answer options	
		b) Rural extension agency	Never/ Rarely/ Sometimes/ Often/ Always	
Autonomy of seeds, seedlings and offspring		c) City Hall	Never/ Rarely/ Sometimes/ Often/ Always	
		d) Farm stores or markets	Never/ Rarely/ Sometimes/ Often/ Always	
		e) NGOs	Never/ Rarely/ Sometimes/ Often/ Always	
		f) Cooperatives	Never/ Rarely/ Sometimes/ Often/ Always	
Seed autonomy		g) Reproduces its own seeds	Never/ Rarely/ Sometimes/ Often/ Always	
		h) Seed house	Never/ Rarely/ Sometimes/ Often/ Always	
		i) Seed keepers	Never/ Rarely/ Sometimes/ Often/ Always	
		j) Trading with neighbors or family members	Never/ Rarely/ Sometimes/ Often/ Always	
		k) Collectives or trade fairs	Never/ Rarely/ Sometimes/ Often/ Always	
Independence from inputs	1.15	How much does your family depend on these inputs to grow crops?		
		a) Chemical fertilizer	Never/ Rarely/ Sometimes/ Often/ Always	
		b) Agricultural limestone	Never/ Rarely/ Sometimes/ Often/ Always	
		c) Poisons/ pesticides	Never/ Rarely/ Sometimes/ Often/ Always	
		d) Fuel	Never/ Rarely/ Sometimes/ Often/ Always	
		e) Supplies for mixtures (Bordeaux mixture, sulphocalcic syrup, viçosa)	Never/ Rarely/ Sometimes/ Often/ Always	
		f) Manure	Never/ Rarely/ Sometimes/ Often/ Always	
		g) Biofertilizers (liquid humus, supermagro...)	Never/ Rarely/ Sometimes/ Often/ Always	
Public services	Transportation	1.16	Do you have transportation when you need it all year round?	No/ A little/ More or less/ Quite a lot/ Completely
		1.17	What problems do you face?	Open
	Garbage and sewage	1.18	Does the family have access to a public sewage and basic sanitation system?	Yes/No
		1.19	If you don't have access to the public system, how do you treat your sewage?	Ditch/ Direct to river/ Patent/ Septic tank/ Drain/ Root treatment/ Evapotranspiration basin/ Biodigester/ Banana cycle/ Dry toilet/ Other
		1.20	Is organic waste composted or does it go to the animals?	No/ A little/ More or less/ Quite a lot/ Completely
		1.21	Is dirty dry waste collected by truck or taken into town?	No/ A little/ More or less/ Quite a lot/ Completely
		1.22	Are dirty dry waste and recyclables burned?	No/ A little/ More or less/ Quite a lot/ Completely
		1.23	Is recyclable waste separated for recycling?	No/ A little/ More or less/ Quite a lot/ Completely

Theme	NO.	Questions	Answer options	
Public services	Electricity	1.24	How do you access electricity?	Social or rural tariff/ Residential tariff/ Solar energy/ Wind energy/ Biomass and biogas/ Small power plant/ Generator or diesel gasoline
		1.25	Does the family have uninterrupted electricity?	No/ A little/ More or less/ Quite a lot/ Completely
		1.26	Do you have alternative sources other than the municipal electricity grid?	Yes/No
		1.27	Which ones?	Open
		1.28	Have you ever lost food due to a power outage?	No/ A little/ More or less/ Quite a lot/ Completely
	Teaching	1.29	Do children and young people in the community have access to schools or education systems?	Yes/No
		1.30	If so, how far?	1 - more than 50 km, 2 - from 30 to 50 km, 3 - from 15 to 30 km, 4 - up to 15 km, 5 - in the community
		1.31	To what level?	Elementary school 1st cycle/ Elementary school 2nd cycle/ High school/ Higher education
		1.32	Is it culturally oriented?	Yes/No
	Public health	1.33	Does the family have access to public health services?	Yes/No
		1.34	What is the quality of these health services?	
			a) Consultations	1/ 2/ 3/ 4/ 5
			b) Health tests	1/ 2/ 3/ 4/ 5
			c) Vaccines	1/ 2/ 3/ 4/ 5
			d) Medicines	1/ 2/ 3/ 4/ 5
			e) Specialized doctors	1/ 2/ 3/ 4/ 5
			f) Emergency	1/ 2/ 3/ 4/ 5
			g) Health agent	1/ 2/ 3/ 4/ 5
		1.35	What health problems does the family have?	Open
Social assistance	1.36	Does the family have access to social assistance?	Yes/No	
	1.37	What is the quality of social assistance services in your community?	1/ 2/ 3/ 4/ 5	

Axis 2 - Production model			
Theme	NO.	Questions	Answer options
Labor force and income	2.1	How many people in the family work in the agro-ecosystem?	Table 2 (at the end of this document)
	2.2	Is most of the work in the agro-ecosystem done by the family?	No/ A little/ More or less/ Quite a lot/ Completely
	2.3	How many people in the family work outside the agro-ecosystem on a regular basis?	NO.
	2.4	What is your family's income?	Less than 1 minimum wage/ 1 to 2 minimum wages/ 2 to 4 minimum wages/ 4 to 8 minimum wages/ More than 8 minimum wages
	2.5	What are the household's sources of income?	Open
	2.6	How many sources of income does the house have?	NO.
	2.7	Are labor relations fair?	
		a) Are labor rights guaranteed?	Never/ Rarely/ Sometimes/ Often/ Always
		b) Is the working environment safe, healthy and respectful?	Never/ Rarely/ Sometimes/ Often/ Always
	c) Are salaries fair and proportional to the work done?	Never/ Rarely/ Sometimes/ Often/ Always	
Wealth of production	2.8	List of crops, livestock and fruit trees grown - Crops for family consumption only, - Crops that are partly consumed and partly sold, - How much is sold (a little, half, almost all), - Crops that go entirely for sale, - Crops sold to which markets.	Table 3 (at the end of this document)
	2.9	Total crops/livestock produced.	Total number (Richness)
	2.10	Has the diversity of foods/herbs planted increased in the last 5 years?	Reduced a lot / Reduced a little / Remained the same / Increased a little / Increased a lot
	2.11	Why?	Open
	2.12	Have the types of crops the family uses changed from before?	Changed a lot/changed little
	2.13	What has changed?	Open

Theme	NO.	Questions	Answer options
Production model	2.14	Does your family plant or have planted transgenic varieties (Genetically Modified Organisms)?	Yes/No
	2.15	If so, which ones (e.g. corn, cotton, sugar cane, eucalyptus, beans, soybeans)?	Open
	2.16	What are the advantages and disadvantages?	Open
	2.17	Does your family use chemical fertilizers on their crops?	Yes/No
	2.18	If so, in which ones?	Open
	2.19	Who do you recommend?	Open
	2.20	Does the family use pesticides/ poisons on their crops?	Yes/No
	2.21	If so, in which ones?	Open
	2.22	Who recommends them?	Open
	2.23	Have you ever had any cases of poisoning or illness in your family due to the use of poisons?	Yes/No
	2.24	Have the seeds your family plants/uses changed over time?	No/ A little/ More or less/ Quite a lot/ Completely
	2.25	From 1 to 5, how much does your family use these practices?	
		a) Use of heirloom/landraces seeds	1/ 2/ 3/ 4/ 5
		b) Polycultures	1/ 2/ 3/ 4/ 5
		c) Use of biofertilizers	1/ 2/ 3/ 4/ 5
	d) Pest and disease control with agricultural mixtures (Bordeaux, sulphocalcic, viçosa)	1/ 2/ 3/ 4/ 5	
	e) Dead or living ground cover	1/ 2/ 3/ 4/ 5	
	f) Composting	1/ 2/ 3/ 4/ 5	
	g) Crop rotation	1/ 2/ 3/ 4/ 5	
	h) Agroforestry systems	1/ 2/ 3/ 4/ 5	
	2.26	If you do polycultures/consortia, how do they work?	Open

	2.27	How would you define your way of planting?	Conventional/ Traditional/ Organic/ Agroecological/ Agroforestry/ Other
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Theme	NO.	Questions	Answer options
Production model	2.28	How important is it for you to produce food in this way?	Open
	2.29	Does your family use or develop social technologies?	Yes/No
Machines and social technologies	2.30	Which ones?	Open
	2.31	Does the family have access to agricultural machinery and equipment when and if they need it?	Never/ Rarely/ Sometimes/ Often/ Always
	2.32	How is the soil managed for your crops?	Never/ Rarely/ Sometimes/ Often/ Always
Conservation of natural resources		a) Plowing and harrowing	Never/ Rarely/ Sometimes/ Often/ Always
		b) No-till farming	Never/ Rarely/ Sometimes/ Often/ Always
		c) Weeding	Never/ Rarely/ Sometimes/ Often/ Always
		d) Green manure	Never/ Rarely/ Sometimes/ Often/ Always
		e) Mulching	Never/ Rarely/ Sometimes/ Often/ Always
		f) Other...	Never/ Rarely/ Sometimes/ Often/ Always
	2.33	What is the vegetation like near springs, fountains, streams and/or rivers?	Open
	2.34	Are there any areas of native vegetation in your family's area?	
		a) Legally protected area.	Yes/No
		b) Area around springs and rivers.	Yes/No
		c) Native vegetation (scrubland) beyond the legally protected area.	Yes/No
	2.35	What is their state of conservation?	
		a) Legal reserve área.	Very bad/ Bad/ Fair/ Good/ Great
		b) Area around springs and rivers.	Very bad/ Bad/ Fair/ Good/ Great
		c) Native vegetation (scrubland) beyond the legally protected area.	Very bad/ Bad/ Fair/ Good/ Great
2.36	Does your family manage or use these areas?	Yes/No	
2.37	In what way?	Open	

Axis 3 - Processing and marketing			
Theme	NO.	Questions	Answer options
Processing	3.1	Does the family produce processed foods (jams, jellies, sausages, flour...)?	Yes/No
	3.2	If so, which ones? - Processed products produced only for family consumption.	Table 4 (at the end of this document)
	3.3	Does the family make handicrafts (clay utensils, straw, embroidery...)?	
	3.3	If so, which ones? - Crafts produced solely for the family's use.	Table 4
	3.4	Does your family use machinery to process food or handicrafts?	Yes/No
	3.5	Which ones?	Open
Marketing (crops, livestock and processed products)	3.6	Sale of food produced: How much is sold (little, half, almost all)?	Table 3
	3.7	What markets are the food products sold to?	Table 3
	3.8	Sale of processed products (processed food and handicrafts): - Processed products that is partly consumed and partly sold, - How much is sold (a little, half, almost all)? - Processed products that go entirely to sale.	Table 4
	3.9	Which markets are the processed products sold to?	Table 4
	3.10	How much of the family's income comes from selling the processed products?	Nothing/ 1/4 of income/ Half of income/ 3/4 of income/ All of income
	3.11	To what extent do you consider the value of selling your produce (fresh and processed) directly to consumers?	1/ 2 /3 /4 /5
	3.12	And what about intermediaries or traders?	1/ 2 /3 /4 /5
	3.13	And what about government programs (if any)?	1/ 2 /3 /4 /5
	3.14	If it's not fair, why isn't the relationship totally fair?	Open
	3.15	Has the family ever felt that its marketing has been hindered by competition from external products?	Yes/No

	3.16	Does your family sell or have sold your products through apps, websites or social networks?	Yes/No
	3.17	If so, how much has this tool improved your sales?	1/ 2 /3 /4 /5

Theme	NO.	Questions	Answer options
Marketing (crops, livestock and processed products)	3.18	Does your family participate in Communities Supporting Agriculture (CSAs)?	Yes/No
	3.19	If so, how much has this initiative improved your sales?	1/ 2 /3 /4 /5

Axis 4 - Food and nutrition security

Theme	NO.	Questions	Answer options
Processing and consumption	4.1	How many days a week does your family eat fresh or minimally processed food? E.g. rice, beans, legumes, vegetables, fruit, fermented, ground, frozen, dried foods (with little salt, sugar, fat...).	None/ 1x a week/ 2x a week/ 3x a week/ Every day
	4.2	What are these foods?	Open
	4.3	How many times a week does your family eat processed foods? E.g. preserves with vinegar and salt or in brine, salted preserves or in oil, candied fruit or fruit in syrup, breads, cheeses.	None/ 1x a week/ 2x a week/ 3x a week/ Every day
	4.4	Are these processed foods homemade or from industry?	
		a) Homemade	Never/ Rarely/ Sometimes/ Often/ Always
		b) Industrialized	Never/ Rarely/ Sometimes/ Often/ Always
	4.5	How many times a week does your family eat ultra-processed foods? E.g. snacks, cookies, soft drinks, noodles.	None/ 1x a week/ 2x a week/ 3x a week/ Every day
	4.6	What are these foods?	Open
Traditional food culture	4.7	Are there any recipes that you or your family knew from older people that you make today? What are they?	Yes/No; Open
	4.8	How often does your family eat traditional foods?	Never/ Rarely/ Sometimes/ Often/ Always
	4.9	What native/woodland foods do you know?	Open - list
	4.10	Which ones do you collect and eat these days?	Open
Food and nutrition security	4.11	In the last year, did the food run out before the family was able to produce or access more food?	Never/ Rarely/ Sometimes/ Often/ Always
	4.12	If so, how did the family solve it?	Open

	4.13	In the last year, did the family eat only a few types of food that they still had, because the food ran out before the family could produce or access more food?	Never/ Rarely/ Sometimes/ Often/ Always
	4.14	If so, what foods did you continue to eat?	Open

Theme	NO.	Questions	Answer options
Self-sufficiency and access to food	4.15	To what extent is the family's food production sufficient to meet their nutritional needs year-round?	Totally insufficient/ A little/ More or less/ Quite a lot/ Totally sufficient
	4.16	How much of the food your family consumes comes from these sources?	
		a) Produced by the family	Nothing/ Little/ Half/ Almost everything/ Everything
		b) Collected by the family	Nothing/ Little/ Half/ Almost everything/ Everything
		c) Produced by the community	Nothing/ Little/ Half/ Almost everything/ Everything
		d) Bought at the market	Nothing/ Little/ Half/ Almost everything/ Everything
		e) Purchased from the community market	Nothing/ Little/ Half/ Almost everything/ Everything
		f) Exchanges (between family members, neighbors)	Nothing/ Little/ Half/ Almost everything/ Everything
		g) Received from donations (family, neighbors or food baskets)	Nothing/ Little/ Half/ Almost everything/ Everything
h) Purchased from the city market or Ceasa	Nothing/ Little/ Half/ Almost everything/ Everything		
4.17	Are there resources that the family safely stores for the following year?	Yes/No	
4.18	If so, which ones?	Open	

Axis 5 - Public policies and governance

Theme	NO.	Questions	Answer options
Agrarian/agricultural policies	5.1	Does your family have access to any public agricultural policies?	Yes/No
	5.2	If so, which ones?	Table 4
	5.3	From 1 to 5, how effective were the policies you accessed for your needs?	1/ 2 /3 /4 /5
	5.4	If they weren't entirely sufficient, what were the problems?	Open
	5.5	In your opinion, what would need to change or improve for PP to meet your family's needs?	Open
	5.6	Does your family receive or has ever received technical assistance or rural extension?	Yes/No
	5.7	For what needs?	Open
	5.8	From 1 to 5, how useful do you think they are/were for your needs?	1/ 2 /3 /4 /5

Local and regional organization and management	5.9	Is there an association or some form of social organization within the community?	Yes/No
	5.10	Does the association play an active role?	No/ A little/ More or less/ Quite a lot/ Completely
	5.11	How satisfied are you with the functioning and decisions of the Association?	Very dissatisfied/ Somewhat satisfied/ Satisfied/ Very satisfied/ Totally satisfied
Theme	NO.	Questions	Answer options
Local and regional organization and management	5.12	If you're not satisfied, what do you think should change in the community organization?	Open
	5.13	Does your family participate in networks outside the community?	No/ A little/ More or less/ Quite a lot/ Completely
	5.14	Which ones?	Open
	5.15	Does anyone in the family participate in organizations such as municipal councils (health, agriculture...) or regional councils?	Yes/No
	5.16	Which organizations?	Open
Collaborative networks	5.17	How often do food exchanges and donations take place in your community?	Never/ Once a year (when someone needs it)/ Three times a year/ Once a week
	5.18	If so, how does your family participate?	
		- Donating	Yes/No
		- Receiving	Yes/No
	5.19	How often do you exchange work days and/or services with other people/families in the community?	Never/ Once a year (when someone needs it)/ Three times a year/ Once a week
	5.20	How often does collective work take place in the community?	Never/ Once a year/ Three times a year/ Once a week
Autonomy	5.21	From 1 to 5: To what extent is the following important in determining the family's crops?	
		a) the guidance of the agricultural technician	1/ 2/ 3/ 4/ 5
		b) for what it sells at Ceasa or PP	1/ 2/ 3/ 4/ 5
		c) what the family prefers to eat	1/ 2/ 3/ 4/ 5
		d) for what you already plant	1/ 2/ 3/ 4/ 5
		e) the season of the year	1/ 2/ 3/ 4/ 5
		f) the soil	1/ 2/ 3/ 4/ 5
		g) for what you sell at the fair or market	1/ 2/ 3/ 4/ 5
	h) other...	1/ 2/ 3/ 4/ 5	

Management of common goods	5.22	Are there natural resources in the community that are shared (common natural goods)?	Yes/No
	5.23	What are they and how is their use shared?	Open

Axis 6 - Socio-cultural aspects

Theme	NO.	Questions	Answer options
Gender	6.1	Division of labor by gender.	Table 5 (at the end of this document)
	6.2	Who in the family receives the PP payments and who made the decisions?	Table 5
	6.3	Who in the family takes part in decisions about common goods?	Table 5
	6.4	Who in the family participates in community organization?	Table 5
	6.5	Who in the family participates in municipal/regional councils?	Table 5
Generation	6.6	Division of labor by generation.	Table 5
	6.7	Have families been leaving the community in recent years?	No/ A little/ More or less/ Quite a lot/ Completely
	6.8	If so, for what reason?	Open
	6.9	Have young people been leaving the community in recent years?	No/ A little/ More or less/ Quite a lot/ Completely
	6.10	Have they returned to the community? Why?	Open
Identity	6.11	If not, what do you think should happen to encourage their return?	Open
	6.12	How does the family identify culturally (traditional community, quilombola - Maroon-descended community, indigenous, other)?	Open
Traditional beliefs and celebrations	6.13	How much do people in the community identify themselves in this way?	Nothing/ Little/ Half/ Almost everything/ Everything
	6.14	Do you and your family have faith in a higher existence (spiritual beliefs in entities, God, gods, orishas, sympathies, superstition...)?	Yes/No
	6.15	If so, do your beliefs influence your farming decisions? How?	Open
	6.16	How much do you agree with this statement: In nature there are things that are sacred or spiritual.	Strongly disagree/ Disagree/ Undecided/ Agree/ Strongly agree
	6.17	How much does your family use prayers or blessings to cure health problems?	Never/ Rarely/ Sometimes/ Often/ Always

	6.18	Are there any traditional festivals in your community or that you take part outside the community?	Yes/No
	6.19	Which?	Open
	6.20	Do you and your family take part?	Never/ Rarely/ Sometimes/ Often/ Always

Theme	NO.	Questions	Answer options
Knowledge of seeds and medicinal plants	6.21	How much does your family use traditional medicine and medicinal plants?	Never/ Rarely/ Sometimes/ Often/ Always
	6.22	What medicinal plants does your family grow at home?	Open - list
	6.23	What bush/woodland remedies, from native plants, do you know?	Open - list
	6.24	Which ones do you collect and use today?	Open - list
	6.25	Does your family know native/ heirloom seeds?	No/ A little/ More or less/ Quite a lot/ Completely
	6.26	What are the community's typical seeds?	Open - list
	6.27	Are they used frequently?	Never/ Rarely/ Sometimes/ Often/ Always
	6.28	Are there older people in the community who have traditional knowledge? Who are they?	Yes/No, Open
	6.29	Is there a loss of knowledge in the family of an adult or elderly person who hasn't had the opportunity to pass on their memories?	Little or no loss of knowledge / A lot of loss of knowledge
Violence, oppression and inequality	6.30	Are there conflicts in the community?	No/ A little/ More or less/ Quite a lot/ Completely
	6.31	What kind?	Open
	6.32	Have there ever been cases of discrimination against anyone in the community?	No/ A little/ More or less/ Quite a lot/ Completely
	6.33	What kind?	Open
	6.34	If so, have your beliefs ever suffered any kind of prejudice or repression?	Yes/No
	6.35	Have there ever been cases of environmental crime against the community?	No/ A little/ More or less/ Quite a lot/ Completely
	6.36	What kind (use of poisons, fires...)?	Open
	6.37	Have there ever been situations of violence in the community?	No/ A little/ More or less/ Quite a lot/ Completely

	6.38	What kind of violence?	Open
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Table 1. Access to land and other natural spaces (question 1.11).

Land plot	Form of access*	Municipality	Distance from plot to home (km)	Plot size (ha)	Land title Y/N	Who is the legal owner of the land?
1						
2						
3						
4						
5						
6						
Total area (ha):						

Source: Adapted from Petersen (2021)

*Form of access to land:

(1) owned, (2) possession, (3) lease, (4) sharecropping, (5) partnership, (6) assignment, (7) loan for use, (8) right of use, (9) community use, (10) camp, (11) settlement, (12) other.

Table 2. Family Composition and Work (question 2.1).

No.	Name	Relationship ¹	Gender ²	Year of birth	Lives here?	Time dedicated ³	Occupation outside the agroecosystem ⁴
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Source: Adapted from Petersen (2021)

Legend:

¹Relationship: (a) Spouse; (b) Son/daughter; (c) Cousin; (d) Brother/sister; (e) Mother; (f) Father; (g) Grandparent; (h) Uncle/aunt; (i) Dependent; (j) Others

²Adult Woman - AW, Young Woman - YW, Adult Man - AM, Young Man - YM, Child - C

³Time dedicated to the agroecosystem: (a) Full-time; (b) Part-time; (c) Does not work; (d) Person with work limitations

⁴Occupation outside the agroecosystem: II = informal work, FW = formal work

Table 3. List of crops, livestock, fruit trees, hunting, gathering, extractivism, fishing – food diversity produced (2.8), sale of food produced (3.36), and markets (3.37).

2.8	3.36			3.37
For family consumption	Part sold, part consumed	Intermediate quantity	For sale	Sold to whom?
		()l()h()na		1. Street Market
		()l()h()na		
		()l()h()na		2. Individually
		()l()h()na		
		()l()h()na		3. Government programs
		()l()h()na		
		()l()h()na		4. Local markets
		()l()h()na		
		()l()h()na		5. Pre-order
		()l()h()na		
		()l()h()na		6. Exchange networks/solidarity economy
		()l()h()na		
		()l()h()na		7. Donations
		()l()h()na		
		()l()h()na		8. Cooperative
		()l()h()na		
		()l()h()na		9. Supermarkets
		()l()h()na		
		()l()h()na		10. Other:
		()l()h()na		
		()l()h()na		
		()l()h()na		
		()l()h()na		
		()l()h()na		
		()l()h()na		
		()l()h()na		
		()l()h()na		
		()l()h()na		

Legend: l = little, h = half, na = nearly all

Table 4: Diversity of processed products – processed foods and handicrafts.

2.6		3.1		3.2
For family consumption	Part sold, part consumed	Intermediate quantity	For sale	Sold to whom?
		()l()h()na		1 Street Market
		()l()h()na		
		()l()h()na		2 Individually
		()l()h()na		
		()l()h()na		3 Government programs
		()l()h()na		
		()l()h()na		4 Local markets
		()l()h()na		
		()l()h()na		5 Pre-order
		()l()h()na		
		()l()h()na		6 Exchange networks/solidarity economy
		()l()h()na		
		()l()h()na		7 Donations
		()l()h()na		
		()l()h()na		8 Cooperative
		()l()h()na		
		()l()h()na		9 Supermarkets
		()l()h()na		
		()l()h()na		10 Other:
		()l()h()na		

Legend: l = little, h = half, na = nearly all

Table 5: Division of Labor and Decision-Making by Gender and Generation (questions 6.1 to 6.6).

Activity	Who works				Who decides			
	Woman	Man	Young woman	Young man	Woman	Man	Young woman	Young man
Market work and for self-consumption								
Swidden field								
Cattle								
Sheep/goats								
Poultry								
Pigs								
Backyard – garden, medicinal plants								
Orchard								
Processing								
Extractivism								
Sales								
Other activities								
Domestic and care work								
Fetch water and firewood								
Care for children								
Care for the elderly								
Cooking								
Public policies								
Social organizations								
Management								
Of common natural goods								
Community association								
Councils								
Rural extension and technical assistance								
Other activities								

Source: Adapted from Petersen (2021)

Material suplementar A

INSTRUMENTO DE AVALIAÇÃO DA SOBERANIA ALIMENTAR - IASA Detalhado

Versão em Português

Identificação da(o) entrevistada ou entrevistado e família:

Código da família:

Data: / /

Nomes das(os) entrevistadas(os):

Cidade/ Estado:

Nome da Comunidade/ assentamento/ acampamento:

Nome da propriedade:

Como você se identifica? () Branco, () Preto, () Pardo, () Indígena, () Amarelo

Religião:

Conte por favor a história de sua família neste lugar...

Instrumento de Avaliação da Soberania Alimentar (IASA Detalhado) com as perguntas da entrevista e suas opções de resposta, organizadas por temas dentro dos seis eixos da Soberania Alimentar.

Eixo 1 - Acesso a recursos			
Tema	Nº	Perguntas	Opções de respostas
Acesso à terra	1.1	Qual a forma de acesso à terra?	Tabela 1 (no final deste documento)
	1.2	Tem suficiente acesso à terra para produzir alimentação de toda a família?	Totalmente insuficiente/ Pouco/ Mais ou menos/ Bastante/ Totalmente suficiente
	1.3	Tem áreas de terras que são de uso compartilhado na comunidade?	Tabela 1
	1.4	Já aconteceram conflitos por terra devido ao acesso ou à coleta de algum recurso com vizinhos confinantes, obras particulares ou públicas, mineração, exploração de recursos naturais, unidades de conservação...?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	1.5	Se sim, esses conflitos afetaram a forma de cultivar ou tratar as criações?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	1.6	E afetou a permanência na terra, algumas famílias tiveram que ir embora?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	1.7	Conte, por favor, como aconteceu?	Aberta
Acesso às contribuições da Natureza	1.8	Disponibilidade de Água	
		a) Tem água para beber disponível o ano todo?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
		b) Tem água para os animais, disponível o ano todo?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
		c) E para a irrigação?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
		d) De onde vem seu abastecimento de água?	Aberta
	1.9	Existem plantas ou outros elementos da natureza que a família precisa ou visita que agora estão fora das terras da sua comunidade?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
1.10	Quais?	Aberta	
Mudanças climáticas	1.11	A família tem sofrido efeitos de enchentes, granizo, ciclones ou secas prolongadas e extremas?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	1.12	Isso ameaçou a permanência na terra ou a produção de alimentos?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	1.13	A família tem se preparado ou modificado suas ações de alguma forma? Se sim, qual?	Aberta

Tema	Nº	Perguntas	Opções de respostas	
Autonomia de sementes e mudas	1.14	A partir de onde a família obtêm as sementes e mudas que necessita para plantar?		
		a) Sindicato de Trabalhadores Rurais	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		b) Agência de extensão rural	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		c) Prefeitura	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		d) Lojas agropecuárias ou mercados	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		e) ONGs	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		f) Cooperativas	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		g) Reproduz as próprias sementes	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		h) Casa de sementes	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		i) Guardiões de sementes	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		j) Troca com vizinhos ou familiares	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		k) Coletivos ou feiras de trocas	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
Independência de insumos	1.15	Quanto sua família depende desses insumos para plantar?		
		a) Adubo químico	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		b) Calcário	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		c) Venenos/ agrotóxicos	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		d) Combustível	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		e) Insumos para caldas (bordalesa, calda sulfocálcica, viçosa)	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		f) Esterco	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
		g) Biofertilizantes (húmus líquido, supermagro...)	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
Serviços públicos	Transporte	1.16	Tem transporte quando precisa ao longo de todo o ano?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		1.17	Quais problemas enfrenta?	Aberta
	Lixo e esgoto	1.18	A família têm acesso a sistema público de esgoto e saneamento básico?	Sim/ Não
		1.19	Se não tem acesso ao sistema público, de que forma trata o esgoto?	Vala/ Direto no rio/ Patente/ Fossa séptica/ Sumidouro/ Tratamento com raízes/ Bacia de evapotranspiração/ Biodigestor/ Ciclo de bananeiras/ Banheiro seco/ Outro
		1.20	O lixo orgânico é compostado ou vai para os animais?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
		1.21	O lixo seco sujo é recolhido pelo caminhão ou levado na cidade?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
		1.22	O lixo seco sujo e o reciclável são queimados?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
1.23	O lixo reciclável é separado para a reciclagem?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente		

Tema	Nº	Perguntas	Opções de respostas
Serviços públicos	Energia elétrica	1.24 De que forma acessa a energia elétrica?	Tarifa social ou rural/ Tarifa residencial/ Energia solar/ Energia eólica/ Biomassa e biogás/ Pequena Central Elétrica/ Gerador a diesel gasolina
		1.25 A família tem energia elétrica sem ser interrompida?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
		1.26 Tem fontes alternativas ao abastecimento da rede elétrica municipal?	Sim/ Não
		1.27 Quais?	Aberta
		1.28 Já perdeu alimentos devido à falta de energia elétrica?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	Ensino	1.29 As crianças e jovens da comunidade têm acesso a escolas ou sistemas de ensino?	Sim/ Não
		1.30 Se sim, qual distância?	1 - mais de 50 km, 2 - de 30 a 50 km, 3 - de 15 a 30 km, 4 - até 15 km, 5 - na comunidade
		1.31 Até que nível?	Fundamental 1º ciclo/ Fundamental 2º ciclo/ Ensino médio/ Ensino superior
		1.32 É culturalmente orientada?	Sim/ Não
	Saúde pública	1.33 A família tem acesso a serviços de saúde pública?	Sim/ Não
		1.34 Qual a qualidade desses serviços de saúde?	
		a) Consultas	1/ 2/ 3/ 4/ 5
		b) Exames	1/ 2/ 3/ 4/ 5
		c) Vacinas	1/ 2/ 3/ 4/ 5
		d) Remédios	1/ 2/ 3/ 4/ 5
		e) Especialistas	1/ 2/ 3/ 4/ 5
		f) Emergência	1/ 2/ 3/ 4/ 5
	Assistência social	1.35 Quais problemas de saúde a família têm?	Aberta
		1.36 A família têm acesso à assistência social?	Sim/ Não
	1.37 Qual a qualidade dos serviços de assistência social na sua comunidade?	1/ 2/ 3/ 4/ 5	

Eixo 2 - Modelo de produção			
Tema	Nº	Perguntas	Opções de respostas
Força de trabalho e renda	2.1	Quantas pessoas da família trabalham/ se dedicam ao agroecossistema?	Tabela 2 (no final deste documento)
	2.2	A maior parte do trabalho no agroecossistema é realizado pela família?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	2.3	Quantas pessoas da família trabalham fora do agroecossistema regularmente?	Nº
	2.4	Qual a faixa de renda da família?	Menos de 1 salário mínimo/ De 1 a 2 salários/ De 2 a 4 salários/ De 4 a 8 salários/ Mais de 8 salários
	2.5	Quais são as fontes de renda da casa?	Aberta
	2.6	Quantas são as fontes de renda da casa?	Nº
	2.7	Relações de trabalho são justas?	
		a) Direitos trabalhistas estão assegurados?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		b) O ambiente de trabalho é seguro, saudável e respeitoso?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	c) Os salários são justos e proporcionais ao trabalho realizado?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
Riqueza da produção	2.8	Lista de cultivos, criações e frutíferas produzidos - Cultivos somente para o consumo da família, - Cultivos que parte é consumida e parte é vendida, - Quanto é vendido (pouco, metade, quase tudo), - Cultivos que vão totalmente para a venda, - Cultivos vendidos para quais mercados.	Tabela 3(no final deste documento)
	2.9	Total de cultivos/criações produzidos.	Nº total (Riqueza)
	2.10	A diversidade de alimentos/ ervas plantados aumentou nos últimos 5 anos?	Reduziu muito/ Reduziu pouco/ Se manteve a mesma / Aumentou um pouco/ Aumentou muito
	2.11	Por quê?	Aberta
	2.12	Os tipos de cultivos que a família usa mudaram de antigamente para hoje?	Mudaram muito/ mudaram pouco
	2.13	O que mudou?	Aberta

Tema	Nº	Perguntas	Opções de respostas
Modelo de produção	2.14	Sua família planta ou plantou variedades de transgênicos (Organismos Geneticamente Modificados)?	Sim/ Não
	2.15	Se sim, quais (Ex: milho, algodão, cana de açúcar, eucalipto, feijão, soja)?	Aberta
	2.16	Quais as vantagens e desvantagens?	Aberta
	2.17	Sua família usa fertilizantes químicos nos cultivos?	Sim/ Não
	2.18	Se sim, em quais?	Aberta
	2.19	Quem recomenda?	Aberta
	2.20	A família usa família usa agrotóxicos/ venenos nos seus cultivos?	Sim/ Não
	2.21	Se sim, em quais?	Aberta
	2.22	Quem recomenda?	Aberta
	2.23	Já teve algum caso de intoxicação ou doença na família por causa do uso de venenos?	Sim/ Não
	2.24	O que aconteceu?	Aberta
	2.25	De 1 a 5, quanto sua família costuma usar essas práticas?	
		a) Uso de sementes crioulas	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		b) Policultivos	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		c) Uso de biofertilizantes	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		d) Controle de pragas e doenças com caldas (bordalesa, sulfocálcica, viçosa)	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		e) Cobertura do solo morta ou viva	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		f) Compostagem	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	g) Rotação de culturas	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
	h) Sistemas agroflorestais	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre	
2.26	Se fazem policultivos/ consórcios, como funcionam?	Aberta	
2.27	Como você definiria a sua forma de plantar?	Convencional/ Tradicional/ Orgânica/ Agroecológica/ Agroflorestal/ Outra	

Tema	Nº	Perguntas	Opções de respostas
Modelo de produção	2.28	Qual a importância para você de produzir alimentos dessa forma?	Aberta
Máquinas e tecnologias sociais	2.29	Sua família utiliza ou desenvolveu tecnologias sociais?	Sim/ Não
	2.30	Quais?	Aberta
	2.31	A família tem acesso a máquinas e equipamentos agrícolas quando e se necessita?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
Conservação de recursos naturais	2.32	Como é feito o manejo do solo para seus cultivos?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		a) Aração e gradagem	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		b) Plantio direto	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		c) Capina	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		d) Adubação verde	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		e) Cobertura morta	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		f) Outra...	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	2.33	Como é a vegetação perto das nascentes, fontes, córregos e/ ou rios?	Aberta
	2.34	Na área da sua família, existem áreas de vegetação nativa?	
		a) Área de reserva legal	Sim/ Não
		b) Área de preservação permanente	Sim/ Não
		c) Vegetação nativa (mato) além da APP e RL	Sim/ Não
	2.35	Qual o estado de conservação delas?	
		a) Área de reserva legal	Muito ruim/ Ruim/ Razoável/ Bom/ Ótimo
		b) Área de preservação permanente	Muito ruim/ Ruim/ Razoável/ Bom/ Ótimo
	c) Vegetação nativa (mato) além da APP e RL	Muito ruim/ Ruim/ Razoável/ Bom/ Ótimo	
2.36	Sua família maneja ou usa essas áreas?	Sim/ Não	
2.37	De que forma?	Aberta	

Eixo 3 - Beneficiamento e comercialização

Tema	Nº	Perguntas	Opções de respostas
Beneficiamento	3.1	A família produz alimentos processados (compotas, geleias, linguiça, farinha...)?	Sim/ Não
	3.2	Se sim, quais? - Processados produzidos somente para o consumo da família.	Tabela 4 (no final deste documento)
	3.3	A família faz artesanato (utensílios de barro, palha, bordado...)?	
	3.3	Se sim, quais? - Artesanato produzido somente para a utilização da família.	Tabela 4
	3.4	Sua família utiliza máquinas para o beneficiamento dos alimentos ou artesanato?	Sim/ Não
	3.5	Quais?	Aberta
Comercialização (cultivos, criações e produtos beneficiados)	3.6	Venda de alimentos produzidos: Quanto é vendido (pouco, metade, quase tudo, tudo)?	Tabela 3
	3.7	Os alimentos são vendidos para quais mercados?	Tabela 3
	3.8	Venda de produtos beneficiados (alimentos processados e artesanato): - Beneficiados que parte é consumida e parte é vendida, - Quanto é vendido (pouco, metade, quase tudo)? - Beneficiados que vão totalmente para a venda.	Tabela 4
	3.9	Os produtos beneficiados são vendidos para quais mercados?	Tabela 4
	3.10	Quanto da renda da família vem da comercialização dos produtos beneficiados?	Nada/ 1/4 da renda/ Metade da renda/ 3/4 da renda/ Toda a renda
	3.11	Em que medida você considera justo o valor de venda da sua produção (frescos e processados) direto para consumidores?	1/ 2 /3 /4 /5
	3.12	E para atravessadores ou comerciantes?	1/ 2 /3 /4 /5
	3.13	E para programas do governo (qual)?	1/ 2 /3 /4 /5

Tema	Nº	Perguntas	Opções de respostas
Comercialização (cultivos, criações e produtos beneficiados)	3.14	Se não for justa, por qual razão a relação não é Totalmente justa?	Aberta
	3.15	A família já sentiu que sua comercialização foi prejudicada por concorrência de produtos externos?	Sim/ Não
	3.16	Sua família vende ou já vendeu seus produtos através de aplicativos, sites ou redes sociais?	Sim/ Não
	3.17	Se sim, o quanto esta ferramenta melhorou suas vendas?	1/ 2 /3 /4 /5
	3.18	Sua família participa de Comunidades que Sustentam a Agricultura?	Sim/ Não
	3.19	Se sim, o quanto esta iniciativa melhorou suas vendas?	1/ 2 /3 /4 /5
Eixo 4 - Segurança alimentar e nutricional			
Tema	Nº	Perguntas	Opções de respostas
Processamento e consumo	4.1	Quantos dias por semana sua família come alimentos in natura ou minimamente processados? Ex: arroz, feijão, legumes, verduras, frutas, alimentos fermentados, moídos, congelados, secos (com Pouco sal, açúcar, gorduras...).	Nenhuma/ 1x por semana/ 2x por semana/ 3x por semana/ Todos os dias
	4.2	Quais são estes alimentos?	Aberta
	4.3	Quantas vezes por semana sua família come alimentos processados? Ex. conservas com vinagre e sal ou em salmoura, conservas salgadas ou em óleo, frutas cristalizadas ou em calda, pães, queijos.	Nenhuma/ 1x por semana/ 2x por semana/ 3x por semana/ Todos os dias
	4.4	Estes alimentos processados são caseiros ou da indústria?	
		a) Caseiros	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
		b) Industrializados	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	4.5	Quantas vezes por semana sua família come alimentos ultra processados? Ex. salgadinhos, bolacha recheada, refrigerante, macarrões tipo miojo.	Nenhuma/ 1x por semana/ 2x por semana/ 3x por semana/ Todos os dias
	4.6	Quais são estes alimentos?	Aberta
Cultura alimentar tradicional	4.7	Existem receitas que você ou sua família conheceu através das pessoas mais velhas e que fazem hoje em dia? Quais são?	Sim/ Não; Aberta
	4.8	Com que frequência sua família consome alimentos tradicionais?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	4.9	Quais alimentos nativos/do mato você conhece?	Aberta - lista
	4.10	Quais vocês coleta e come hoje em dia?	Aberta

Tema	Nº	Perguntas	Opções de respostas
Segurança alimentar e nutricional	4.11	No último ano, a comida acabou antes que a família conseguisse produzir ou ter acesso a mais comida?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	4.12	Se sim, como a família solucionou?	Aberta
	4.13	No último ano, a família comeu apenas alguns tipos de alimentos que ainda tinha, porque os alimentos acabaram antes que a família conseguisse produzir ou ter acesso a mais comida?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	4.14	Se sim, quais foram estes alimentos que seguiram comendo?	Aberta
Autossuficiência e Forma de acesso aos alimentos	4.15	Quanto a produção de alimentos da família é suficiente para manter sua alimentação o ano todo?	Totalmente insuficiente/ Pouco/ Mais ou menos/ Bastante/ Totalmente suficiente
	4.16	Quanto dos alimentos consumidos pela sua família vem dessas fontes?	
		a) Produzidos pela família	Nada/ Pouco/ Metade/ Quase tudo/ Tudo
		b) Coletados pela família	Nada/ Pouco/ Metade/ Quase tudo/ Tudo
		c) Produzidos pela comunidade	Nada/ Pouco/ Metade/ Quase tudo/ Tudo
		d) Comprados na feira	Nada/ Pouco/ Metade/ Quase tudo/ Tudo
		e) Comprados do mercado da comunidade	Nada/ Pouco/ Metade/ Quase tudo/ Tudo
		f) Trocas (entre familiares, vizinhos)	Nada/ Pouco/ Metade/ Quase tudo/ Tudo
		g) Recebidos de doações (familiares, vizinhos ou cestas básicas)	Nada/ Pouco/ Metade/ Quase tudo/ Tudo
	h) Comprados do mercado ou Ceasa da cidade	Nada/ Pouco/ Metade/ Quase tudo/ Tudo	
4.17	Existem recursos que a família estoca de forma segura para o ano seguinte?	Sim/ Não	
4.18	Se sim, quais?	Aberta	

Eixo 5 - Políticas pública e Governança

Tema	Nº	Perguntas	Opções de respostas
Políticas agrárias/ agrícolas	5.1	Sua família tem acesso a alguma política pública agrárias/ agrícolas?	Sim/ Não
	5.2	Se sim, quais?	Tabela 5 (no final deste documento)
	5.3	De 1 a 5, quanto as políticas acessadas foram efetivas para sua necessidade?	1/ 2 /3 /4 /5
	5.4	Se não foram totalmente suficientes, quais foram os problemas?	Aberta

Tema	Nº	Perguntas	Opções de respostas
Políticas agrárias/ agrícolas	5.5	Na sua opinião, o que precisaria mudar ou melhorar para as PP atenderem as necessidades da sua família?	Aberta
	5.6	Sua família recebe ou já recebeu assistência técnica ou extensão rural?	Sim/ Não
	5.7	Para quais necessidades?	Aberta
	5.8	De 1 a 5, quanto você acha elas são/ foram úteis para sua necessidade?	1/ 2 /3 /4 /5
Organização e gestão local e regional	5.9	Dentro da comunidade existe uma associação ou alguma forma de organização social?	Sim/ Não
	5.10	A associação é atuante?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	5.11	A comunidade participa de redes externas à comunidade?	Muito insatisfeito/ Um pouco satisfeito/ Satisfeito/ Muito Satisfeito/ Totalmente satisfeito
	5.12	Se não estão satisfeitos, o que vocês acham que deveria mudar na organização comunitária?	Aberta
	5.13	A família participa de redes externas à comunidade?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	5.14	Quais espaços?	Aberta
	5.15	Alguém da família participa de espaços como conselhos municipais (de saúde, de agricultura...) ou regionais?	Sim/ Não
	5.16	Qual(is) conselhos?	Aberta
Redes de colaboração	5.17	Existem trocas e doações de alimentos na sua comunidade, com qual frequência?	Nunca/ Uma vez por ano (quando alguém precisa)/ Três vezes por ano/ Uma vez por semana
	5.18	Se sim, como sua família participa?	
		- Doando	Sim/ Não
		- Recebendo	Sim/ Não
	5.19	Há troca de dias de trabalho e/ou serviços com outras pessoas/ famílias da comunidade, com qual frequência?	Nunca/ Uma vez por ano (quando alguém precisa)/ Três vezes por ano/ Uma vez por semana
	5.20	Na comunidade têm trabalhos coletivos, com qual frequência?	Nunca/ Uma vez por ano/ Três vezes por ano/ Uma vez por semana

Tema	Nº	Perguntas	Opções de respostas
Autonomia	5.21	De 1 a 5: Em que medida o que segue é importante para determinar os cultivos que a família planta?	
		a) pela orientação do técnico agrícola	1/ 2/ 3/ 4/ 5
		b) pelo o que vende no Ceasa ou PP	1/ 2/ 3/ 4/ 5
		c) pelo que a família prefere comer	1/ 2/ 3/ 4/ 5
		d) pelo que já costuma plantar	1/ 2/ 3/ 4/ 5
		e) pela época do ano	1/ 2/ 3/ 4/ 5
		f) pelo solo	1/ 2/ 3/ 4/ 5
		g) pelo que vende na feira ou no mercado	1/ 2/ 3/ 4/ 5
	h) outro...	1/ 2/ 3/ 4/ 5	
Gestão de bens comuns	5.22	Na comunidade existem recursos da natureza que são de uso compartilhado (bens naturais comuns)?	Sim/ Não
	5.23	Quais são e como seu uso é compartilhado?	Aberta

Eixo 6 - Aspectos socioculturais

Tema	Nº	Perguntas	Opções de respostas
Gênero	6.1	Divisão do trabalho por gênero.	Tabela 5
	6.2	Quem da família recebe os pagamentos da PP e quem tomava decisões?	Tabela 5
	6.3	Quem da família participa das decisões dos bens comuns?	Tabela 5
	6.4	Quem da família participa da organização comunitária?	Tabela 5
	6.5	Quem da família participa dos conselhos municipais/ regionais?	Tabela 5
Geração	6.6	Divisão do trabalho por geração.	Tabela 5
	6.7	As famílias têm ido embora da comunidade nos últimos anos?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	6.8	Se sim, por qual motivo?	Aberta
	6.9	Nos últimos anos, os jovens têm ido embora da comunidade?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	6.10	Eles têm retornado para a comunidade? Por quê?	Aberta
	6.11	Se não, o que você acha que deveria acontecer para incentivar seu retorno?	Aberta
Identidade	6.12	Como a família se identifica culturalmente (comunidade tradicional, quilombola, indígena, outras)?	Aberta

Tema	Nº	Perguntas	Opções de respostas
Identidade	6.13	Quanto as pessoas da comunidade se identificam desta forma?	Nada/ Pouco/ Mais ou menos/ Bastante/ Totalmente
Crenças e comemorações tradicionais	6.14	Você e sua família tem fé em uma existência superior (crenças espirituais em entidades, Deus, Deuses, Orixás, simpatias, superstição...)?	Sim/ Não
	6.15	Se sim, suas crenças influenciam as decisões sobre os cultivos? Como?	Aberta
	6.16	Quanto vocês concordam com esta afirmação: Na natureza existem coisas que são sagradas ou espirituais.	Discordo totalmente/ Discordo/ Não estou decidido/ Concordo/ Concordo totalmente
	6.17	Quanto sua família usa rezas ou benzimentos para curar problemas de saúde?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	6.18	Existem festas tradicionais da comunidades ou que participam fora da comunidade?	Sim/ Não
	6.19	Qual/ quais?	Aberta
	6.20	Você e sua família participam?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
	Conhecimentos sobre sementes e plantas medicinais	6.21	Quanto sua família usa medicina tradicional e plantas medicinais?
6.22		Quais plantas medicinais sua família tem plantadas em casa?	Aberta - lista
6.23		Quais remédios do mato, de plantas nativas você conhece?	Aberta - lista
6.24		Quais você coleta e usa hoje em dia?	Aberta - lista
6.25		Sua família conhece sementes nativas/ crioulas?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
6.26		Quais são as sementes típicas da comunidade?	Aberta - lista
6.27		São usadas frequentemente?	Nunca/ Raramente/ Às vezes/ Muitas vezes/ Sempre
6.28		Na comunidade, existem pessoas mais velhas detentoras de conhecimentos tradicionais? Quem são?	Sim/ Não, Aberta
6.29		Existe perda de conhecimentos na família de algum adulto/ idoso que não teve oportunidade de transmitir suas memórias?	Pouca ou nenhuma perda de conhecimento/ Muita perda de conhecimento
6.30		Existem conflitos na comunidade?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
6.31		De que tipo?	Aberta
Violência, opressão e iniquidade	6.32	Já aconteceram casos de discriminação contra alguém da comunidade?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	6.33	De que tipo?	Aberta
	6.34	Se sim, suas crenças já sofreram algum tipo de preconceito ou repressão?	Sim/ Não

Tema	Nº	Perguntas	Opções de respostas
Violência, opressão e iniquidade	6.35	Já aconteceram casos de crimes ambientais contra a comunidade?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	6.36	De que tipo (uso de venenos, incêndios...)?	Aberta
	6.37	Já aconteceram situações de violência na comunidade?	Não/ Pouco/ Mais ou menos/ Bastante/ Totalmente
	6.38	Qual tipo de violência?	Aberta

Tabela 1. Acesso à terra e outros espaços naturais (questão 1.11).

Área	Forma de acesso*	Município	Distância da área para a casa (Km)	Dimensão (ha)	Título da terra S/N	Está no nome de quem?
1						
2						
3						
4						
5						
6						
Área total (ha)						

Fonte: Adaptado de Petersen, 2021.

*Forma de acesso à terra: (1) própria, (2) posse, (3) arrendamento, (4) meação, (5) parceria, (6) cessão, (7) comodato, (8) direito de uso, (9) uso comunitário, (10) acampamento, (11) assentamento, (12) Outro.

Tabela 2. Composição familiar e trabalho (questão 2.1).

N°	Nome	Parentesco ¹	Sexo ²	Ano de nascimento	Reside?	Tempo dedicado ³	Ocupação fora do agroecossistema ⁴
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Fonte: Adaptado de Petersen (2021).

Legenda:

¹Parentesco: (a) Esposo/a; (b) Filho/a; (c) Primo/a; (d) Irmão/ã; (e) Mãe; (f) Pai; (g) Avô/ó; (h) Tio/a; (i) Agregado/a; (j) Outros

² Mulher adulta - MA, Mulher Jovem - MJ, Homem Adulto - HA, Homem Jovem - HJ, Criança - C

³ Tempo dedicado ao agroecossistema: (a) Integral; (b) Parcial; (C) Não Trabalha (D) Pessoa com limitação para trabalhar.

⁴ Ocupação fora do agroecossistema: TI: trabalho informal, CA: carteira assinada.

Tabela 4: Listar Diversidade de produtos beneficiados: alimentos processados e artesanatos.

2.6	3.1			3.2
Beneficiados que vão totalmente para a alimentação/ uso da família	Beneficiados que parte é vendida e parte é para família	Quantidade intermediária (do que é vendido)	Beneficiados que vão totalmente para a venda	É vendido para quem?
		() p () m () qt		1 - Feira Livre
		() p () m () qt		
		() p () m () qt		2 - Porta a porta na cidade
		() p () m () qt		
		() p () m () qt		3 - PNAE ou PAA
		() p () m () qt		
		() p () m () qt		4 - Supermercados e mercearias locais
		() p () m () qt		
		() p () m () qt		5 - Sob encomenda na cidade
		() p () m () qt		
		() p () m () qt		6 - Redes de trocas/ economia solidária
		() p () m () qt		
		() p () m () qt		7 - Doações
		() p () m () qt		
		() p () m () qt		8 - Mercado Nacional
		() p () m () qt		
		() p () m () qt		9 - Mercado Internacional
		() p () m () qt		
		() p () m () qt		10 -Outra:
		() p () m () qt		
		() p () m () qt		

Legenda: p = pouco, m = metade, qt = quase toda

Tabela 5: Divisão do trabalho e decisões por gênero e geração (questões 6.1 à 6.6)

Trabalho mercantil e para autoconsumo	Quem trabalha				Quem toma decisões			
	Mulher	Homem	Mulher Jovem	Homem Jovem	Mulher	Homem	Mulher Jovem	Homem Jovem
Roçado								
Roçado diversificado								
Bovinos								
Ovinos/caprinos								
Aves								
Porcos								
Quintal – horta, medicinais								
Pomar								
Beneficiamento								
Extrativismo								
Comercialização								
Outras atividades								
Trabalho doméstico e cuidados								
Pegar água e lenha								
Cuidar das crianças								
Cuidar dos idosos								
Fazer comida								
Limpar a casa								
Lavar a louça								
Outras atividades								
Políticas públicas								
Organizações sociais								
Gestão								
De bens naturais comuns								
Associação comunitária								
Conselhos								
Extensão rural e assistência técnica								
Outras atividades								

Fonte: Editado de Petersen (2021).

Material suplementario A
INSTRUMENTO DE EVALUACIÓN DE LA SOBERANÍA ALIMENTARIA - IASA Detallado
Versión en Español

Identificación del entrevistado y su familia:

Código de la familia:

Fecha: / /

Nombres de los entrevistados:

Nombre de la propiedad:

Nombre de la comunidad/asentamiento/campamento:

Ciudad/Estado:

¿Cómo te identificas? () Blanco, () Negro, () Marrón, () Indígena, () Amarillo

¿Cuál es tu religión?

¿Pueden (ustedes) contar un poco de la historia de su familia en este lugar?

Herramienta Detallada de Evaluación de la Soberanía Alimentaria - IASA Detallado (del acrónimo Portugués) con las preguntas de la entrevista y sus opciones de respuesta, organizadas por temas dentro de los seis ejes de la Soberanía Alimentaria.

Eje 1 - Acceso a los recursos			
Tema	NO.	Preguntas	Opciones de respuesta
Acceso a la tierra	1.1	¿Cómo accede tu familia a la tierra?	Cuadro 1 (al final de este documento)
	1.2	¿Tienes suficiente acceso a la tierra para producir alimentos para toda la familia?	Totalmente insuficiente/ Un poco/ Más o menos/ Bastante/ Totalmente suficiente
	1.3	¿Disponen de terrenos compartidos en la comunidad?	Cuadro 1
	1.4	¿Ha habido alguna vez conflictos por la tierra debido al acceso o la recolección de un recurso con vecinos colindantes, obras privadas o públicas, minería, explotación de recursos naturales, unidades de conservación...?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	1.5	En caso afirmativo, ¿han afectado estos conflictos a su forma de cultivar o criar animales?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	1.6	¿Han afectado estos conflictos a la permanencia en la tierra? ¿Alguna familia tuvo que mudarse?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	1.7	Si la respuesta es sí, por favor, díganos cómo sucedió esa situación.	Respuesta abierta
Acceso a los aportes de la naturaleza	1.8	Disponibilidad de agua	
		a) ¿Hay agua potable disponible todo el año?	No/ Un poco/ Más o menos/ Bastante/ Completamente
		b) ¿Hay agua disponible para los animales durante todo el año?	No/ Un poco/ Más o menos/ Bastante/ Completamente
		c) ¿Hay agua disponible para el riego todo el año?	No/ Un poco/ Más o menos/ Bastante/ Completamente
		d) ¿De dónde procede su suministro de agua?	Respuesta abierta
	1.9	¿Hay plantas u otros elementos de la naturaleza que su familia necesite o visite y que ahora estén fuera de los terrenos de su comunidad?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	1.10	¿Si la respuesta es sí, dime cuáles?	Respuesta abierta

Tema	NO.	Preguntas	Opciones de respuesta
Cambio climático	1.11	¿La familia ha sufrido los efectos de inundaciones, granizo, ciclones o sequías prolongadas y extremas?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	1.12	¿Esto ha amenazado su permanencia en la tierra o la producción de alimentos?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	1.13	¿La familia se ha preparado o modificado sus acciones de alguna manera? Si es así, ¿de qué forma?	Respuesta abierta
	1.14	¿Dónde consigue su familia las semillas y los plantones que necesita para plantar?	Respuesta abierta
Autonomía de semillas, plántulas y descendientes		a) Sindicato de Trabajadores Rurales	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		b) Agencia de extensión rural	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		c) Ayuntamiento	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		d) Tiendas o mercados agrícolas	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		e) ONG	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		f) Cooperativas	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		g) Reproducen sus propias semillas	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		h) Semillero	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		i) Semilleros	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		j) Comercializan con vecinos o familiares	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		k) Colectividades o ferias	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
Independencia de las entradas	1.15	¿En qué medida depende su familia de estos insumos para cultivar?	
		a) Abono químico	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		b) Caliza	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		c) Venenos/plaguicidas	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		d) Combustible	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		e) Suministros para jarabes (mezcla bordelesa, jarabe sulfocálcico, viçosa)	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		f) Estiércol	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		g) Biofertilizantes (humus líquido, supermagro...)	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	h) Plántulas	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	

Tema	NO.	Preguntas	Opciones de respuesta
Servicios públicos	Transporte	1.16 ¿Su familia tiene transporte cuando lo necesita durante todo el año?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		1.17 ¿Si no, qué problemas enfrentan?	Respuesta abierta
	Basuras y aguas residuales	1.18 ¿Tiene la familia acceso a un sistema público de alcantarillado y saneamiento básico?	Sí/No
		1.19 Si no tiene acceso a la red pública, ¿cómo depura sus aguas residuales?	Acequia/ Directo al río/ Patente/ Fosa séptica/ Desagüe/ Tratamiento de raíces/ Balsa de evapotranspiración/ Biodigestor/ Ciclo del plátano/ Retrete seco/ Otro
		1.20 ¿Los residuos orgánicos se compostan o se dan como alimento a los animales?	No/ Un poco/ Más o menos/ Bastante/ Completamente
		1.21 ¿La basura sucia y seca es recogida por un camión o se lleva a la ciudad?	No/ Un poco/ Más o menos/ Bastante/ Completamente
		1.22 ¿Se queman la basura sucia y seca y los materiales reciclables?	No/ Un poco/ Más o menos/ Bastante/ Completamente
		1.23 ¿Se separan los residuos reciclables para su reciclaje?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	Electricidad	1.24 ¿Cómo se accede a la electricidad?	Tarifa social o rural/ Tarifa residencial/ Energía solar/ Energía eólica/ Biomasa y biogás/ Pequeña central eléctrica/ Generador o gasóleo gasolina
		1.25 ¿Dispone la familia de electricidad ininterrumpida?	No/ Un poco/ Más o menos/ Bastante/ Completamente
		1.26 ¿Dispone de fuentes de suministro alternativas a la red eléctrica municipal?	Sí/No
		1.27 ¿Cuáles?	Respuesta abierta
		1.28 ¿Alguna vez ha perdido comida o productos por un corte de luz?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	Enseñanza	1.29 ¿Los niños y jóvenes de la comunidad tienen acceso a escuelas o sistemas educativos?	Sí/No
		1.30 En caso afirmativo, ¿A qué distancia está de la comunidad?	1 - más de 50 km, 2 - de 30 a 50 km, 3 - de 15 a 30 km, 4 - hasta 15 km, 5 - En la comunidad
		1.31 ¿Hasta qué nivel educativo llega la escuela?	Enseñanza primaria / Enseñanza secundaria / Enseñanza superior
		1.32 ¿La escuela tiene una orientación cultural?	Sí/No
	Salud pública	1.33 ¿Tiene la familia acceso a los servicios sanitarios públicos?	Sí/No
1.34 ¿Cuál es la calidad de estos servicios sanitarios?			
a) Consultas		Califique 1/ 2/ 3/ 4/ 5	
b) Exámenes	Califique 1/ 2/ 3/ 4/ 5		

Tema	NO.	Preguntas	Opciones de respuesta
Servicios públicos		c) Vacunas	Califique 1/ 2/ 3/ 4/ 5
		d) Medicamentos	Califique 1/ 2/ 3/ 4/ 5
		e) Especialistas	Califique 1/ 2/ 3/ 4/ 5
		f) Urgencia	Califique 1/ 2/ 3/ 4/ 5
		g) Agente de salud	Califique 1/ 2/ 3/ 4/ 5
		1.35	¿La familia tiene personas con problemas de salud? ¿En caso afirmativo qué problemas de salud tiene la familia?
Asistencia social	1.36	¿Tiene la familia acceso a asistencia social?	Sí/No
	1.37	¿Cuál es la calidad de los servicios de asistencia social en su comunidad?	1/ 2/ 3/ 4/ 5

Eje 2 - Modelo de producción

Tema	NO.	Preguntas	Opciones de respuesta
Población activa e ingresos	2.1	¿Cuántas personas de la familia trabajan en el agroecosistema?	Cuadro 2 (al final de este documento)
	2.2	¿La mayor parte del trabajo en el agroecosistema lo realiza la familia?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	2.3	¿Cuántas personas de la familia trabajan fuera del agroecosistema de forma habitual?	NO.
	2.4	¿Cuál es la renta de tu familia?	Menos de 1 salario mínimo/ De 1 a 2 salarios/ De 2 a 4 salarios/ De 4 a 8 salarios/ Más de 8 salarios
	2.5	¿Cuáles son las fuentes de ingresos del hogar?	Respuesta abierta
	2.6	¿Cuántas fuentes de ingresos tiene la casa?	NO.
	2.7	¿Son justas las relaciones laborales?	
		a) ¿Se garantizan los derechos laborales?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		b) ¿El entorno de trabajo es seguro, saludable y respetuoso?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	c) ¿Los salarios son justos y proporcionales al trabajo realizado?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
Riqueza de producción	2.8	Lista de cultivos, ganado y árboles frutales cultivados - Cultivos destinados únicamente al consumo familiar, - Cultivos que se consumen en parte y se venden en parte, - Cuánto se vende (un poco, la mitad, casi todo), - Cultivos que se destinan íntegramente a la venta, - Cultivos que se venden en qué mercados.	Cuadro 3 (al final de este documento)
	2.9	Total de cultivos/ganado producidos.	Número total (Riqueza)

Tema	NO.	Preguntas	Opciones de respuesta
Riqueza de producción	2.10	¿Ha aumentado o disminuido la diversidad de alimentos/hierbas plantadas en los últimos 5 años?	Se redujo mucho / Se redujo un poco / Se mantuvo igual / Aumentó un poco / Aumentó mucho
	2.11	¿Por qué?	Respuesta abierta
	2.12	¿Los tipos de cultivos que usa la familia han cambiado con el tiempo?	Ha cambiado mucho/ha cambiado poco
	2.13	¿Qué ha cambiado?	Respuesta abierta
	2.14	¿Su familia planta o ha plantado variedades de organismos modificados genéticamente (OMG)?	Sí/No
	2.15	En caso afirmativo, ¿cuáles (por ejemplo, maíz, algodón, caña de azúcar, eucalipto, judías, soja)?	Respuesta abierta
	2.16	¿En su opinión, cuáles son las ventajas y los inconvenientes de usar este tipo de organismo?	Respuesta abierta
	2.17	¿Tu familia utiliza abonos químicos en sus cultivos?	Sí/No
	2.18	En caso afirmativo, ¿en cuáles?	Respuesta abierta
	2.19	¿A quién recomienda?	Respuesta abierta
Modelo de producción	2.20	¿Utiliza la familia pesticidas/venenos en sus cultivos?	Sí/No
	2.21	En caso afirmativo, ¿en cuáles?	Respuesta abierta
	2.22	¿Quién recomienda ese uso?	Respuesta abierta
	2.23	¿Ha tenido algún caso de envenenamiento o enfermedad en su familia debido al uso de pesticidas/venenos?	Sí/No
	2.24	¿Han cambiado con el tiempo las semillas que planta/utiliza su familia?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	2.25	Del 1 al 5, ¿en qué medida utiliza su familia estas prácticas?	
		a) Utilización de semillas criollas	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		b) Policultivos	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		c) Uso de biofertilizantes	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		d) Control de plagas y enfermedades con jarabes (bordelés, sulfocálcico, viçosa)	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	e) Cubierta vegetal viva o muerta	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
	f) Compostaje	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
	g) Rotación de cultivos	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
	h) Sistemas agroforestales	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
2.26	Si hace policultivos/consorcios, ¿cómo funcionan?	Respuesta abierta	

Tema	NO.	Preguntas	Opciones de respuesta	
Modelo de producción	2.27	¿Cómo definiría su forma de plantar?	Convencional/ Tradicional/ Ecológico/ Agroecológico/ Agroforestal/ Otros	
	2.28	¿Qué importancia tiene para usted producir alimentos de esta manera?	Respuesta abierta	
Máquinas y tecnologías sociales	2.29	¿Su familia utiliza o desarrolla tecnologías sociales?	Sí/No	
	2.30	¿Cuáles?	Respuesta abierta	
	2.31	¿Tiene la familia acceso a maquinaria y equipos agrícolas cuando y si los necesita?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
Conservación de los recursos naturales	2.32	¿Cómo se gestiona el suelo para sus cultivos?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
		a) Arado y grada	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
		b) Siembra directa	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
		c) Deshierbe	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
		d) Abono verde	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
		e) Mantillo	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
		f) Otros...	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre	
		2.33	¿Cómo es la vegetación cerca de manantiales, fuentes, arroyos y/o ríos?	Respuesta abierta
		2.34	¿Hay zonas de vegetación nativa en la zona donde vive su familia?	
			a) Zona protegida por la ley	Sí/No
			b) Zona alrededor de manantiales y ríos.	Sí/No
			c) Vegetación nativa (matorral) más allá de la protegida por la ley	Sí/No
		2.35	¿Cuál es su estado de conservación?	
			a) Zona protegida por la ley	Muy malo/ Malo/ Regular/ Bueno/ Estupendo
			b) Zona alrededor de manantiales y ríos.	Muy malo/ Malo/ Regular/ Bueno/ Estupendo
		c) Vegetación nativa (matorral) más allá de la protegida por la ley	Muy malo/ Malo/ Regular/ Bueno/ Estupendo	
	2.36	¿Su familia gestiona o utiliza estas zonas?	Sí/No	
	2.37	¿En qué sentido?	Respuesta abierta	

Eje 3 - Transformación y comercialización			
Tema	NO.	Preguntas	Opciones de respuesta
Tratamiento	3.1	¿Produce la familia alimentos procesados (mermeladas, jaleas, embutidos, harina...)?	Sí/No
	3.2	En caso afirmativo, ¿cuáles? - Productos transformados producidos únicamente para el consumo familiar.	Cuadro 4 (al final de este documento)
	3.3	¿La familia hace artesanía (utensilios de barro, paja, bordados...)?	
	3.3	En caso afirmativo, ¿cuáles? - Artesanía producida exclusivamente para uso familia.	Cuadro 4
	3.4	¿Utiliza tu familia maquinaria para procesar alimentos o artesanía?	Sí/No
	3.5	¿Cuáles?	Respuesta abierta
Comercialización (cultivos, ganado y productos transformados)	3.6	Venta de los alimentos producidos: ¿Cuánto se vende (poco, la mitad, casi todo)?	Cuadro 3
	3.7	¿A qué mercados se venden los alimentos?	Cuadro 3
	3.8	Venta de productos transformados (alimentos y artesanía): - Productos beneficiados que una parte se consume y otra se vende, - ¿Cuánto se vende (un poco, la mitad, casi todo)? - Productos beneficiados que se destinan íntegramente a la venta.	Cuadro 4
	3.9	¿A qué mercados se venden los productos beneficiados/procesados?	Cuadro 4
	3.10	¿Qué parte de los ingresos de la familia procede de la venta de los productos transformados?	Nada/ 1/4 de los ingresos/ La mitad de los ingresos/ 3/4 de los ingresos/ Todos los ingresos
	3.11	¿En qué medida considera justo el valor de venta de su producción (frescos y procesados) cuando se vende directamente a consumidores?	1/ 2 /3 /4 /5
	3.12	¿Y en el caso de intermediarios o comerciantes?	1/ 2 /3 /4 /5
	3.13	¿Y para programas gubernamentales (si existen)?	1/ 2 /3 /4 /5

Tema	NO.	Preguntas	Opciones de respuesta
Comercialización (cultivos, ganado y productos transformados)	3.14	Si no es justo, ¿por qué ustedes entienden que no es justa la relación?	Respuesta abierta
	3.15	¿Ha sentido alguna vez la familia que su comercialización se ha visto perjudicada por la competencia con productos externos?	Sí/No
	3.16	¿Su familia vende o ha vendido sus productos a través de aplicaciones, sitios web o redes sociales?	Sí/No
	3.17	En caso afirmativo, ¿en qué medida ha mejorado esta herramienta sus ventas?	1/ 2 /3 /4 /5
	3.18	¿Participa su familia en Comunidades de Apoyo a la Agricultura (CSA)?	Sí/No
	3.19	En caso afirmativo, ¿en qué medida ha mejorado esta iniciativa sus ventas?	1/ 2 /3 /4 /5

Eje 4 - Seguridad alimentaria y nutricional

Tema	NO.	Preguntas	Opciones de respuesta
Transformación y consumo	4.1	¿Cuántos días a la semana come tu familia alimentos frescos o mínimamente procesados? Por ejemplo, arroz, alubias, legumbres, verduras, fruta, alimentos fermentados, triturados, congelados, secos (con poca sal, azúcar, grasa...).	Ninguno/ 1 vez por semana/ 2 veces por semana/ 3 veces por semana/ Todos los días
	4.2	¿Cuáles de estos alimentos ustedes más comen?	Respuesta abierta
	4.3	¿Cuántas veces a la semana come tu familia alimentos procesados? Por ejemplo, conservas con vinagre y sal o en salmuera, conservas saladas o en aceite, fruta confitada o en almíbar, pan, queso.	Ninguno/ 1 vez por semana/ 2 veces por semana/ 3 veces por semana/ Todos los días
	4.4	¿Estos alimentos procesados son caseros o proceden de la industria?	
		a) Hecho en casa	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
		b) Industrializados	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	4.5	¿Cuántas veces a la semana come tu familia alimentos ultraprocesados? Por ejemplo, papas fritas, galletas, refrescos, fideos.	Ninguno/ 1 vez por semana/ 2 veces por semana/ 3 veces por semana/ Todos los días
4.6	¿Qué alimentos son estos?	Respuesta abierta	
Cultura alimentaria tradicional	4.7	¿Hay alguna receta que tú o tu familia hayáis aprendido de personas mayores y que preparéis hoy en día?	Sí/No

Tema	NO.	Preguntas	Opciones de respuesta
Cultura alimentaria tradicional	4.7	¿Cuál/cuales son?	Respuesta abierta
	4.8	¿Con qué frecuencia come su familia comidas tradicionales?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	4.9	¿Qué alimentos nativos/del bosque conoces?	Respuesta abierta - lista
	4.10	¿Cuáles colectas y comes actualmente?	Respuesta abierta
Seguridad alimentaria y nutricional	4.11	En el último año, ¿se agotaron los alimentos antes de que la familia pudiera producir o acceder a más alimentos?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	4.12	En caso afirmativo, ¿cómo lo resolvió la familia esta situación?	Respuesta abierta
	4.13	En el último año, ¿comió la familia solo algunos tipos de alimentos de los que aún disponía, porque se agotaron antes de que la familia pudiera producir o acceder a más alimentos?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	4.14	En caso afirmativo, ¿qué alimentos siguió comiendo?	Respuesta abierta
Autosuficiencia y acceso a los alimentos	4.15	¿En qué medida la producción de alimentos de la familia es suficiente para su sustento durante todo el año?	Totalmente insuficiente/ Un poco/ Más o menos/ Bastante/ Totalmente suficiente
	4.16	¿Qué proporción de los alimentos que consume su familia procede de estas fuentes?	
		a) Producido por la familia	Nada/ Poco/ La mitad/ Casi todo/ Todo
		b) Recogida por la familia	Nada/ Poco/ La mitad/ Casi todo/ Todo
		c) Producido por la comunidad	Nada/ Poco/ La mitad/ Casi todo/ Todo
		d) Comprado en el mercado	Nada/ Poco/ La mitad/ Casi todo/ Todo
		e) Adquiridos en el mercado comunitario	Nada/ Poco/ La mitad/ Casi todo/ Todo
		f) Intercambios (entre familiares, vecinos)	Nada/ Poco/ La mitad/ Casi todo/ Todo
		g) Recibidos como donativos (de familiares, vecinos o paquetes de alimentos)	Nada/ Poco/ La mitad/ Casi todo/ Todo
	h) Comprado en el mercado municipal o en grandes mercados	Nada/ Poco/ La mitad/ Casi todo/ Todo	
4.17	¿Hay recursos que la familia haya guardado a buen recaudo para el año siguiente?	Sí/No	
4.18	En caso afirmativo, ¿cuáles?	Respuesta abierta	

Eje 5 - Políticas públicas y gobernanza

Tema	NO.	Preguntas	Opciones de respuesta
Política agraria/agrícola	5.1	¿Su familia tiene acceso a alguna política pública (PP) agraria/agrícola?	Sí/No
	5.2	En caso afirmativo, ¿cuáles?	Cuadro 4
	5.3	Del 1 al 5: ¿qué grado de eficacia han tenido las políticas a las que ha tenido acceso para satisfacer sus necesidades?	1/ 2 /3 /4 /5
	5.4	Si no eran del todo suficientes, ¿cuáles eran los problemas?	Respuesta abierta
	5.5	En su opinión, ¿qué tendría que cambiar o mejorar para que esa PP satisfaga las necesidades de su familia?	Respuesta abierta
	5.6	¿Recibe o ha recibido alguna vez su familia asistencia técnica o extensión rural?	Sí/No
	5.7	¿Para cuáles necesidades?	Respuesta abierta
	5.8	Del 1 al 5, ¿en qué medida cree que son/eran útiles para sus necesidades?	1/ 2 /3 /4 /5
Organización y gestión local y regional	5.9	¿Existe una asociación o algún tipo de organización social dentro de la comunidad?	Sí/No
	5.10	¿La asociación tiene un papel relevante?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	5.11	¿Cuál es su grado de satisfacción con el funcionamiento y las decisiones de la Asociación?	Muy insatisfecho/ Algo satisfecho/ Satisfecho/ Muy satisfecho/ Totalmente satisfecho
	5.12	Si no está satisfecho, ¿qué cree que debería cambiar en la organización comunitaria?	Respuesta abierta
	5.13	¿Participa la comunidad en redes externas u otros espacios colectivos?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	5.14	¿En caso afirmativo, de cuáles?	Respuesta abierta
	5.15	¿Participa alguien de la familia en organizaciones como consejos municipales (sanidad, agricultura...) o regionales?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	5.16	¿Qué consejo?	Respuesta abierta

Tema	NO.	Preguntas	Opciones de respuesta
Redes de colaboración	5.17	¿Con qué frecuencia se realizan intercambios y donaciones de alimentos en su comunidad?	Nunca/ Una vez al año (cuando alguien lo necesita)/ Tres veces al año/ Una vez a la semana
	5.18	En caso afirmativo, ¿cómo participa su familia?	
		- Donaciones	Sí/No
		- Recepción	Sí/No
	5.19	¿Con qué frecuencia intercambia jornadas de trabajo y/o servicios con otras personas/familias de la comunidad?	Nunca/ Una vez al año (cuando alguien lo necesita)/ Tres veces al año/ Una vez a la semana
	5.20	¿Con qué frecuencia trabajan juntos en su comunidad?	Nunca/ Una vez al año/ Tres veces al año/ Una vez a la semana
Autonomía	5.21	Del 1 al 5: ¿En qué medida lo que sigue es importante para determinar los cultivos de la familia?	
		a) la orientación del técnico agrícola	1/ 2/ 3/ 4/ 5
		b) por lo que se vende en mercado o PP	1/ 2/ 3/ 4/ 5
		c) qué prefiere comer la familia	1/ 2/ 3/ 4/ 5
		d) para lo que ya planta	1/ 2/ 3/ 4/ 5
		e) la época del año	1/ 2/ 3/ 4/ 5
		f) el suelo	1/ 2/ 3/ 4/ 5
		g) por lo que vendes en la feria o mercado	1/ 2/ 3/ 4/ 5
	h) otros...	1/ 2/ 3/ 4/ 5	
Gestión de bienes comunes	5.22	¿Existen en la comunidad recursos naturales compartidos (bienes naturales comunes)?	Sí/No
	5.23	¿Qué son y cómo se comparte su uso?	Respuesta abierta

Eje 6 - Aspectos socioculturales

Tema	NO.	Preguntas	Opciones de respuesta
Género	6.1	División del trabajo por sexos.	Cuadro 5 (al final de este documento)
	6.2	¿Quién de la familia recibe los pagos del PP y quién tomó las decisiones?	Cuadro 5
	6.3	¿Quién de la familia participa en las decisiones sobre los bienes comunes?	Cuadro 5
	6.4	¿Quién de la familia participa en la organización comunitaria?	Cuadro 5
	6.5	¿Quién de la familia participa en los consejos municipales/regionales?	Cuadro 5
Generación	6.6	División del trabajo por generaciones.	Cuadro 5
	6.7	¿Las familias están abandonando la comunidad en los últimos años?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	6.8	En caso afirmativo, ¿por qué razón?	Respuesta abierta
	6.9	¿Los jóvenes están abandonando la comunidad en los últimos años?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	6.10	¿Han vuelto a la comunidad? ¿Por qué?	Respuesta abierta
Identidad	6.11	Si no es así, ¿qué cree que debería hacerse para fomentar su regreso?	Respuesta abierta
	6.12	¿Cómo se identifica culturalmente la familia (comunidad tradicional, quilombola - comunidad afrodescendiente tradicional, indígena, u otra)?	Respuesta abierta
Creencias y celebraciones tradicionales	6.13	¿En qué medida también se identifican así los ciudadanos de la comunidad?	Nada/ Poco/ La mitad/ Casi todo/ Todo
	6.14	¿Tú y tu familia tenéis fe en una existencia superior (creencias espirituales en entidades, Dios, dioses, orishas, simpatías, superstición...)?	Sí/No
	6.15	En caso afirmativo, ¿influyen sus creencias en sus decisiones agrícolas? ¿Cómo influyen?	Respuesta abierta
	6.16	Hasta qué punto estás de acuerdo con esta afirmación: En la naturaleza hay cosas que son sagradas o espirituales.	Totalmente en desacuerdo/ En desacuerdo/ Indeciso/ De acuerdo/ Totalmente de acuerdo
	6.17	¿En qué medida utiliza tu familia oraciones o bendiciones para curar problemas de salud?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	6.18	¿Existen fiestas tradicionales de la comunidad o fiestas que se celebren fuera de ella?	Sí/No
	6.19	¿Cuál o cuáles?	Respuesta abierta
	6.20	¿Participan usted y su familia?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre

Tema	NO.	Preguntas	Opciones de respuesta
Conocimiento de semillas y plantas medicinales	6.21	¿En qué medida utiliza su familia la medicina tradicional y las plantas medicinales?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	6.22	¿Qué plantas medicinales cultiva su familia en casa?	Respuesta abierta - lista
	6.23	¿Qué medicinas del monte, de plantas autóctonas conoces?	Respuesta abierta - lista
	6.24	¿Cuáles colecta y utiliza actualmente?	Respuesta abierta - lista
	6.25	¿Su familia conoce las semillas autóctonas/criollas?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	6.26	¿Cuáles son las semillas típicas de la comunidad?	Respuesta abierta - lista
	6.27	¿Se utilizan con frecuencia?	Nunca/ Raramente/ As veces/ Muchas veces/ Siempre
	6.28	¿Hay personas mayores en la comunidad que posean conocimientos tradicionales? ¿Quiénes son?	Sí/No, Abierto
	6.29	¿Existe una pérdida de conocimientos en la familia de una persona adulta/anciana que no ha tenido la oportunidad de transmitir sus recuerdos?	Poca o ninguna pérdida de conocimientos / Mucha pérdida de conocimientos
Violencia, opresión y desigualdad	6.30	¿Hay conflictos en la comunidad?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	6.31	¿De qué tipo?	Respuesta abierta
	6.32	¿Ha habido casos de discriminación contra alguien en la comunidad?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	6.33	¿De qué tipo?	Respuesta abierta
	6.34	En caso afirmativo, ¿han sufrido sus creencias algún tipo de prejuicio o represión?	Sí/No
	6.35	¿Se han dado casos de delitos medioambientales contra la comunidad?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	6.36	¿De qué tipo (uso de venenos, incendios...)?	Respuesta abierta
	6.37	¿Ha habido alguna vez situaciones de violencia en la comunidad?	No/ Un poco/ Más o menos/ Bastante/ Completamente
	6.38	¿Qué tipo de violencia?	Respuesta abierta

Tabla 1. Acceso a la tierra y otros espacios naturales (questão 1.11).

Área	Forma de acesso*	Município	Distância da área para a casa (Km)	Dimensão (ha)	Título da terra S/N	Está no nome de quem?
1						
2						
3						
4						
5						
6						
Área total (ha)						

Fuente: Adaptado de Petersen (2021).

*Forma de acesso à terra: (1) própria, (2) posse, (3) arrendamento, (4) meação, (5) parceria, (6) cessão, (7) comodato, (8) direito de uso, (9) uso comunitário, (10) acampamento, (11) assentamento, (12) Outro.

Tabla 2. Composición familiar y trabajo (questão 2.1).

Nº	Nome	Parentesco ¹	Sexo ²	Ano de nascimento	Reside?	Tempo dedicado ³	Ocupação fora do agroecossistema ⁴
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Fuente: Adaptado de Petersen (2021).

Leyenda:

¹Parentesco: (a) Esposo/a; (b) Filho/a; (c) Primo/a; (d) Irmão/ã; (e) Mãe; (f) Pai; (g) Avô/ó; (h) Tio/a; (i) Agregado/a; (j) Outros

² Mulher adulta - MA, Mulher Jovem - MJ, Homem Adulto - HA, Homem Jovem - HJ, Criança - C

³ Tempo dedicado ao agroecossistema: (a) Integral; (b) Parcial; (C) Não Trabalha (D) Pessoa com limitação para trabalhar.

⁴ Ocupação fora do agroecossistema: TI: trabalho informal, CA: carteira assinada,

Tabla 3. Lista de cultivos, crianza, frutales, caza, recolección, extracción, pesca – Diversidad de alimentos producidos (pregunta 2.8), Venta de alimentos producidos (pregunta 3.36) y para qué mercados (pregunta 3.37).

2.8	3.36			3.37
Cultivos que van totalmente para la alimentación de la familia.	Cultivos de los cuales una parte se vende y otra parte es para alimentación.	Cantidad intermedia	Cultivos que van totalmente para la venta	¿A quién se le vende?
		() p () m () ct		1 - Feria libre
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		2 - Puerta a puerta en la ciudad
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		3 - Programas gubernamentales
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		4 - Tiendas locales
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		5 - Por pedido
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		6 - Redes de trueque / economía solidaria
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		7 – Donaciones
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		8 – Cooperativa
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		9 – Supermercados
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		10 - Otro:
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		
		() p () m () ct		

Fuente: Elaborado por los autores. Leyenda: p = poco, m = mitad, ct = casi todo

Tabla 4. Diversidad de productos procesados: alimentos elaborados y artesanías.

2.6	3.1			3.2
Processados que son totalmente para el consumo/uso de la familia	Procesados que se venden parcialmente y también son para la familia	Cantidad intermedia (de lo que se vende)	Procesados que se destinan totalmente a la venta	¿A quién se vende?
		() p () m () ct		1 - Feira Livre
		() p () m () ct		
		() p () m () ct		2 - Porta a porta na cidade
		() p () m () ct		
		() p () m () ct		3 - PNAE ou PAA
		() p () m () ct		
		() p () m () ct		4 - Supermercados e mercearias locais
		() p () m () ct		
		() p () m () ct		5 - Sob encomenda na cidade
		() p () m () ct		
		() p () m () ct		6 - Redes de trocas/ economia solidária
		() p () m () ct		
		() p () m () ct		7 - Doações
		() p () m () ct		
		() p () m () ct		8 - Mercado Nacional
		() p () m () ct		
		() p () m () ct		9 - Mercado Internacional
		() p () m () ct		
		() p () m () ct		10 -Outra:
		() p () m () ct		
		() p () m () ct		

Leyenda: p = poco, m = mitad, ct = casi todo

Tabla 5. División del trabajo y decisiones por género y generación (preguntas 6.1 a 6.6).

Actividad	Quem trabalha				Quem toma decisões			
	Mujer	Hombre	Mujer joven	Hombre joven	Mujer	Hombre	Mujer joven	Hombre joven
Trabajo comercial y para autoconsumo								
Cultivo (roza)								
Bovinos								
Ovinos/caprinos								
Aves								
Cerdos								
Patio – huerto, plantas medicinales								
Huerto frutal								
Procesamiento								
Extracción								
Comercialización								
Otras actividades								
Trabajo doméstico y de cuidado								
Buscar agua y leña								
Cuidar a los niños								
Cuidar dos ancianos								
Cocinar								
Limpiar la casa								
Lavar los platos								
Otras actividades								
Políticas públicas								
Organizaciones sociales								
Gestión								
De bienes naturales comunes								
Asociación comunitaria								
Consejos								
Extensión rural y asistencia técnica								
Otras actividades								

Fuente: Adaptado de Petersen (2021).

Supplementary Material B – Data Processing

- **Inverted Likert Scale**

Some questions required an inverted Likert scale after receiving responses because the phrasing of the question, when adapted to respondents, resulted in the scale's meaning being reversed. For example, Question 1.4: *"Have there ever been land conflicts due to access or collection of resources with neighboring properties, private or public construction, mining, natural resource exploitation, conservation units...?"* Or Question 2.20: *"Does your family use pesticides/poisons in their crops?"*. The Likert scale reversal should be applied prior to conducting any data analysis. These questions in the *Complete IASA* are as follows: 1.4, 1.5, 1.6, 1.11, 1.12, 1.14 a-e, 1.15 a-d, 1.22, 1.28, 2.32 a, 4.4 b, 4.5, 4.16 f-g, 5.21 b and g.

Seed autonomy (Question 1.14), a crucial aspect of food sovereignty, should be calculated considering seed acquisition sources that reduce family autonomy had their Likert scale inverted. This reduction in autonomy may occur due to:

1. Adjusting seeds to market availability,
2. Purchases or donations from external entities (e.g., municipalities or NGOs) that limit variety or genetic diversity,
3. Provision of seeds not adapted to local conditions and climate, or
4. Reduced ability to reproduce seeds for the following agricultural year.

Thus, seeds obtained from unions, rural extension agencies, municipal governments, agricultural stores, and NGOs (Questions 1.14 a-e) had their scale inverted. Seeds from cooperatives, self-production, seed houses, seed guardians, neighbor exchanges, collectives, and Seed Swap Fair (Questions 1.14 f-k) were considered autonomy-promoting sources. After scale adjustments, seed autonomy was calculated as the average of Questions 1.14a to 1.14k.

Similarly, the Self-sufficiency and Food Access question (4.16) required Likert scale inversion for food sources that reduce autonomy by:

1. Limiting variety (food items and nutritional sources) or
2. Reducing the use of seasonal, local, or traditional foods.

This applies to food received from donations and purchases from urban markets (Questions 4.16 f-g). Urban market purchases were included because they imply low self-sufficiency production (e.g., families relying on income from a few items, such as sugarcane liquor or

charcoal, leading to heavy external purchases). However, if market purchases only supplement nonreproducible items, their Likert score will be low in the interview but high after inversion for analysis.

- **Variables Calculated Using Central Tendency Measures**

- Land access: Average of Questions 1.4 to 1.6
- Water access: Average of Questions 1.8 to 1.10
- Seed autonomy: Average of Questions 1.14a to 1.14k
- Input independence: Average of Questions 1.15a to 1.15h
- Waste and sewage treatment: Average of Questions 1.20 to 1.23
- Electricity: Average of Questions 1.25 and 1.28
- Health: Average of Questions 1.34a to 1.34g
- Public services: Averages of Transportation (1.16), Waste/sewage (1.20–1.23), Electricity (1.25, 1.28), Education (1.30), Public health (1.34a–g), and Social assistance (1.37)
- Agro-ecological practices: Average of Questions 2.25a to 2.25h
- Soil management: Average of Questions 2.32a to 2.32e
- Conserved natural areas: Average of Questions 2.35a to 2.35c
- Food processing and consumption: Average of Questions 4.1, 4.4a, 4.4b, and 4.5
- Food source autonomy: Average of Questions 4.16a to 4.16g
- Crop self-determination: Average of Questions 5.21a to 5.21g

- **Labor and Gender Equity**

As a key component of Food Sovereignty (FS) assessment, we quantified gender equity in labor distribution using the following methodology (adapted from Petersen et al., 2021): All family labor was classified by gender across four dimensions: 1) Market-oriented production and self-consumption labor, 2) Domestic work, 3) Access to and utilization of public policies, and 4) Participation in community management spaces.

For each category, the proportion of tasks performed by each gender relative to the family's total tasks in that category should be calculated separately. Apply the formula:

$$\text{Gender Equity Score} = 1 - (|W - M| / T)$$

Where:

- W = Number of tasks performed by women in the category
- M = Number of tasks performed by men in the category
- T = Total tasks in the category performed by the family
- | | = Absolute value function (ensures non-negative result)

Scores range from 0 to 1, where:

- 0 = Complete gender inequity (all work performed by one gender)
- 1 = Perfect equity (equal work distribution)

- **Variables without linear correlation to food sovereignty**

The following questions have nonlinear relationships with FS (i.e., higher Likert scores do not mean greater food sovereignty) but remain important and may be cross-referenced:

- 1.24 How is electricity accessed?
- 2.4 What is the family's income range?
- 2.12 Have the types of crops changed over time?
- 2.24 Have the seeds your family uses changed over time?
- 2.27 How would you define your planting method?
- 4.3 How often does your family consume processed foods (e.g., preserves, canned fruit, bread, cheese)?
- 5.1 Does your family have access to agrarian/agricultural public policies?

Supplementary Material C - Description of the Food Sovereignty Assessment Instrument indicators (IASA - Portuguese abbreviation for Instrumento de Avaliação da Soberania Alimentar).

Explanatory Table of IASA - Summary Food Sovereignty Indicators - version in English

Axis 1 - Access to resources and services.	
Indicators	Explanation of the indicators to be evaluated.
Access to land	There is secure access to land, free from conflicts that threaten long-term occupancy or food production.
Access to water	There is access to water with year-round availability and quality for drinking, livestock, and irrigation.
Access to nature's contributions	There is access to ecosystems and biodiversity, including medicinal plants, native foods, timber, rivers, lakes, and cultural or sacred sites.
Climate change effects	Families have not suffered from floods, hail, cyclones, or prolonged and extreme droughts that threaten their ability to remain on the land or produce food.
Autonomy of inputs	On-site production of planting inputs, enabling nutrient recycling and reduced reliance on external resources.
Accessible transport	Affordable and frequent transportation to urban areas.
Access to electricity	Access to electricity without interruption. Alternative sources of electricity generation.
Proper waste and sewage treatment	Proper waste management: Separation of organic and recyclable waste, regular garbage collection, and treated sewage (not discharged into ditches or drains) or composting toilet.
Access to education	Proximity to culturally sensitive schools with accessible transportation services.
Access to public health	Access to quality healthcare (e.g., consultations, diagnostics, vaccinations, medicines, emergency care, specialists, and community health workers).
Access to social assistance	Psychosocial and legal support for families in need, including domestic violence prevention and aid for vulnerable groups.

Axis 2 - Production model

Indicators	Explanation of the indicators to be evaluated.
Just working relationships	All workers enjoy guaranteed labor rights, including safe conditions, respectful treatment, and fair wages.
Family-based work	Most of the work in agroecosystems is done by family members.
Variety of crops / livestock	There is a rich diversity of food grown, harvested, and raised.
Good soil management	Healthy soils containing abundant and diversity of organisms and invertebrates , are covered with mulch or cover crops, enriched with organic matter, and are uncompacted, managed without frequent or blanket plowing and harrowing.
Use of agroecological practices	These include the use of landrace/heirloom seeds, polycultures, biofertilizers, mulching, composting, crop rotation, agroforestry systems, etc.
No pesticides, NPK or GMO's	The families are seeking a gradual phase-out of the use of chemical fertilisers, pesticides, herbicides, chemical fungicides, and genetically modified crops (genetically modified organisms).
Use of native/heirloom seeds	Families produce, save, or exchange most of the seeds, preserving heirloom/landrace and other open-pollinated seeds or locally adapted varieties and reducing dependence on external sources.
Water conservation	Springs and watercourses remain protected, unpolluted and surrounded by native vegetation.
Conservation of native vegetation	The areas include reliably protected areas of conserved native vegetation within proximity of agricultural land (e.g., in the Brazilian legal context, Permanent Protection Areas, Legal Reserves).
Use of social technologies	Families have developed or adopted methodologies that improve their quality of life, such as solidarity economy, alternatives in sanitation, water tanks, marketing applications, artistic expressions...
Access to production machinery/equipment	Families have access to machinery and equipment for soil preparation, planting, management, harvesting, etc, where this significantly alleviates their workload or hazard, without causing substantial ecological or socioeconomic harm.

Axis 3 - Processing and marketing

Indicators	Explanation of the indicators to be evaluated.
Processed food production	Families or producer coops process food to extend shelf life and enhance nutritional or commercial value (e.g., preserves, jams, sausages, flour, etc.).
Art and craft production	Families create artistic objects or utensils using local materials like clay or fibers.
Access to processing machinery/equipment	Families have access to machinery and equipment for processing when this significantly alleviates their workload or hazard, without major ecological or socioeconomic harm.
Variety of value-added products sold	Higher diversity of value-added foods and/or art/craft regularly sold.
Variety of crops/livestock sold	Diversity of production (crops, wild harvesting, and livestock) regularly sold, avoiding single-product dependence and harnessing economies of scope.

Variety of marketing channels	Diversity of outlets through which products are regularly sold (including farmers' markets, CSA box schemes, wholesale intermediaries, etc).
Direct marketing	Products are preferably sold directly to consumers, reducing dependence on intermediaries..
Fair trade	Revenue from sales adequately covers production costs and labor.
The family income is enough	Sufficiency of family income to meet the basic needs of food not produced on farm and other family expenses and investments.

Axis 4 - Food and nutrition security

Indicators	Explanation of the indicators to be evaluated.
Consumption of fresh and minimally processed foods	High consumption of fresh foods such as vegetables, greens, and fruits, or minimally processed foods like fermented, ground, frozen, or dried items (low in salt, sugar, and fats).
Low consumption of ultra-processed foods	Low or no consumption of foods high in fat, salt, sugar, and preservatives (e.g., chips, cream-filled cookies, sodas, instant noodles).
Consumption of traditional foods	Use of traditional recipes developed over generations by families, incorporating local ingredients and specific techniques.
Variety of foods consumed	Families eat a varied and colorful diet, based on a high diversity of items.
No food shortages	Families have not faced shortages in the quantity and variety of food.
Enough food production	Household food production meets annual needs (except for essential items that are not viable to be produced locally).
Autonomy of food sources	Preference for homegrown, local, seasonal, and traditional foods, reducing reliance on public policy food programs, donations or external markets.

Axis 5 - Public policies and governance

Indicators	Explanation of the indicators to be evaluated.
Effectiveness of public policies	The agrarian and agricultural public policies accessed have met the families' needs.
Effectiveness of rural extension	The technical assistance received has addressed the family's needs.
Food exchange and donations	Families barter food or help each other when someone is in need
Collective work sessions	Exchanges of workdays and/or services with other individuals/families in the community alleviate workload and foster farmer-to-farmer learning (popularly called 'mutirões', 'mingas', 'tequios' in different parts of Latin America)
Shared management of natural assets	There are shared natural resources under collective management of their material, natural, and spiritual heritage.
Self-determination of crops	The families exercise self-determination and agency in shaping their food systems, with limited external interference.
Effective community social organization	The families participate in organisations and informal groups connecting within their community.
Networks outside the community	The community interacts and participates in networks that connect other communities and social movements for broader political leverage.

Municipal/regional councils	The community has representatives in municipal/regional councils (e.g., health, education, sustainable rural development councils).
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Axis 6 - Socio-cultural aspects

Indicators	Explanation of the indicators to be evaluated.
Women's active participation	Women actively participate in decision making spaces, ownership of or rights to land, autonomous access to resources, and training, with equitable division of labor.
Presence of young people in the community	Youth remaining in or returning to the community, with viable future prospects locally.
No exodus of families	Most families stay in the community, with long-term local livelihood opportunities.
Community cultural identity	A majority of families share and value a local cultural identity.
Presence of traditional festivities	The community has traditional festivities and celebrations, and most families participate.
No environmental crimes	No illegal or devastating deforestation, arson, wildlife trafficking, or improper waste/sewage disposal occurs.
No conflicts	Absence of internal or external conflicts over resource access, neighbour disputes, public/private projects, impactful mining, natural resource overexploitation, or conservation-induced displacements.
No violence or discrimination	No violence nor discrimination based on ethnicity, race, social class, gender, cultural identity, religion, or age.
Knowledge and use of native plants	The community holds deep knowledge of native medicinal and food plants, animals and microorganisms, including their use and management.
Use of traditional medicine	Ancestral healing systems exist, passed down through generations, combining plant knowledge, rituals, and integrative health among body, mind, spirit, and environment.

Tabela explicativa dos indicadores de soberania alimentar do IASA Resumido - versão em Português

Eixo 1 - Acesso a recursos e serviços	
Indicadores	Explicação dos indicadores a serem avaliados.
Acesso à terra	Existe acesso à terra de forma segura, livre de conflitos que ameacem a permanência na terra ou a produção de alimentos.
Acesso à água	Água é disponível e de qualidade o ano todo para alimentação, criações e irrigação.
Acesso às contribuições da natureza	Acesso a ecossistemas, biodiversidade, elementos da natureza como plantas medicinais, alimentos nativos, madeira, rios, lagos, lugares culturais e/ou sagrados.
Efeitos das mudanças climáticas	As famílias não têm sofrido efeitos de enchentes, granizo, ciclones ou secas prolongadas e extremas que ameacem a permanência na terra ou a produção de alimentos.
Autonomia de insumos	Os insumos utilizados para plantar são produzidos no local, reciclando nutrientes e reduzindo a dependência de fontes externas.
Transporte acessível	O transporte para a cidade tem valor acessível e boa frequência.
Acesso à energia elétrica	Existe acesso à energia elétrica sem ser interrompido. Possui fontes alternativas de geração de energia elétrica.
Tratamento do lixo e esgoto adequados	Há coleta de lixo. O lixo orgânico e reciclável são separados. O esgoto é tratado e não vai direto para o solo, como em valas e sumidouros, ou se usa banheiro de compostagem.
Acesso a ensino	Existem escolas próximas à comunidade, com transporte escolar e que são culturalmente orientadas.
Acesso à saúde pública	Existe acesso a serviços de saúde com qualidade, como consultas, exames, vacinas, remédios, emergência, especialistas e agentes de saúde.
Acesso à assistência social	Existe acesso à assistência psicossocial e jurídica para famílias necessitadas, incluindo prevenção de violência doméstica e ajuda a grupos vulneráveis.
Eixo 2 - Modelo de produção	
Indicadores	Explicação dos indicadores a serem avaliados.
Relações justas de trabalho	Todas/os trabalhadoras/es têm direitos trabalhistas assegurados, trabalho seguro, respeitoso e com salários justos.
Trabalho de base familiar	A maior parte do trabalho nos agroecossistemas é realizada pelos membros das famílias.
Variedade de cultivos/ criações	Existe uma alta diversidade de alimentos cultivados, coletados e das criações.
Bom manejo do solo	O solo tem uma abundante diversidade de organismos vivos, é coberto com matéria seca ou cultura de cobertura, possui matéria orgânica, não é compactado, é manejado sem aração e gradagem frequentes ou em larga escala.
Uso de práticas agroecológicas	A produção agropecuária é realizada com práticas agroecológicas, como uso sementes crioulas, policultivos, biofertilizantes, cobertura de solo morta ou viva, compostagem, rotação de cultivos, sistemas agroflorestais, etc.
Ausência de NPK, venenos e OGM	As famílias buscam uma eliminação progressiva do uso de fertilizantes químicos, pesticidas, herbicidas, fungicidas químicos e de cultivos transgênicos (organismos geneticamente modificados).

Uso de sementes nativas/crioulas	As famílias produzem, armazenam ou trocam a maioria das sementes, preservando variedades tradicionais (crioulas), outras sementes de polinização aberta ou cultivares adaptadas à região e reduzindo a dependência de fontes externas.
Conservação das águas	As nascentes e cursos d'água estão protegidos, não estão poluídos e têm vegetação nativa ao redor.
Conservação da vegetação nativa	As áreas incluem zonas de vegetação nativa conservada e adequadamente protegidas próximas a terras agrícolas (por exemplo Áreas de Preservação Permanente e Reservas legais).
Uso de tecnologias sociais	As famílias acessam ou desenvolveram metodologias que melhoram a qualidade de vida. Ex: economia solidária, alternativas de saneamento, cisternas, aplicativos para comercialização, expressões artísticas...
Acesso a máquinas/ equipamentos de produção	As famílias têm acesso a máquinas e equipamentos para preparo do solo, plantio, manejo, colheita etc., desde que isso alivie significativamente sua carga de trabalho ou riscos, sem causar danos ecológicos ou socioeconômicos substanciais.

Eixo 3 - Beneficiamento e comercialização

Indicadores	Explicação dos indicadores a serem avaliados.
Produção de alimentos processados	As famílias ou cooperativas de produtores beneficiam alimentos, aumentando seu tempo de conservação e agregando valor nutricional ou comercial (ex: conservas, geleias, linguiça, farinha, etc.).
Produção de trabalhos manuais	A família produz objetos artísticos ou utensílios com barro, fibras ou outros materiais do local.
Acesso a máquinas/ equipamentos para beneficiamento	Famílias têm acesso a máquinas e equipamentos para processamento quando isso alivia significativamente sua carga de trabalho ou riscos, sem causar grandes danos ecológicos ou socioeconômicos.
Variedade de beneficiados vendidos	Alta diversidade de itens beneficiados (alimentos ou artesanatos) que diversificam as possibilidades de agregação de valor.
Variedade de cultivos/ criações vendidos	A produção destinada à comercialização é diversificada (agrícola, extrativista e animal), sem focar em produtos exclusivos.
Variedade de canais de comercialização	As vendas são realizadas por diferentes canais, não se limitando a uma forma de escoar a produção.
Venda direta aos compradores	Os itens comercializados são preferencialmente vendidos diretamente aos consumidores, não dependendo de atravessadores.
Comércio justo	Os valores recebidos na comercialização são adequados aos gastos da produção e ao trabalho investido.
Renda familiar é suficiente	A renda familiar é suficiente para atender às necessidades básicas de alimentos não produzidos e outros gastos e investimentos familiares.

Eixo 4 - Segurança alimentar e nutricional

Indicadores	Explicação dos indicadores a serem avaliados.
Consumo de alimentos frescos e pouco processados	Alto consumo de alimentos frescos como legumes, verduras, frutas, ou pouco processados como alimentos fermentados, moídos, congelados, secos (com pouco sal, açúcar, gorduras).
Baixo consumo de alimentos ultra processados	Ocorre um baixo ou nenhum consumo de alimentos com alto teor de gordura, sal, açúcar e conservantes (ex. como salgadinhos, bolachas recheadas, refrigerantes, macarrões tipo miojo)

Consumo de comidas tradicionais	Existem receitas tradicionalmente utilizadas que foram desenvolvidas ao longo de gerações pelas famílias e que utilizam ingredientes locais e técnicas específicas.
Variedade de alimentos consumidos	As famílias têm uma alimentação variada e colorida, baseada em uma alta diversidade de itens.
Sem escassez de alimentos	As famílias não têm enfrentado escassez na quantidade e na variedade de alimentos.
Produção de alimentos suficiente	A produção de alimentos da família é suficiente em quantidade para manter sua alimentação o ano todo (exceto itens necessários que não se pode produzir no local).
Autonomia das fontes de alimentos	Preferência por alimentos de produções próprias, locais, da temporada e tradicionais, reduzindo a dependência de programas públicos de alimentação, doações ou mercados externos.

Eixo 5 - Políticas pública e Governança

Indicadores	Explicação dos indicadores a serem avaliados.
Efetividade das políticas públicas	As políticas públicas agrárias e agrícolas acessadas atenderam às necessidades das famílias.
Efetividade da extensão rural	A assistência técnica recebida atendeu às necessidades da família.
Trocas e doações de alimentos	As famílias trocam alimentos ou ajudam umas às outras quando alguém está precisando.
Troca de dias trabalho ou mutirões	Existem trocas de dias de trabalho e/ou serviços com outras pessoas/ famílias da comunidade que aliviam a carga de trabalho e promovem a aprendizagem entre agricultores.
Gestão compartilhada dos bens naturais	Existem bens naturais comuns e que têm uma gestão compartilhada sobre seu patrimônio material, natural e espiritual.
Autodeterminação dos cultivos	Autonomia na definição dos próprios sistemas alimentares e agrícolas, com pouca influência de agentes externos.
Organização social comunitária atuante	As famílias participam na organização ou em grupos informais que fomentam a organização comunitária.
Redes externas à comunidade	A comunidade participa de redes que conectam outras comunidades e movimentos sociais ampliando seu alcance político.
Conselhos municipais/ regionais	A comunidade tem representantes em conselhos municipais/regionais (ex. conselhos de saúde, educação, desenvolvimento rural sustentável).

Eixo 6 - Aspectos socioculturais

Indicadores	Explicação dos indicadores a serem avaliados.
Participação atuante das mulheres	As mulheres participam ativamente em espaços de tomada de decisão, na propriedade ou direitos sobre a terra, no acesso autônomo a recursos, bem como nas formações, com uma divisão equitativa do trabalho.
Presença de jovens na comunidade	Os jovens permanecem ou retornam à comunidade e têm perspectiva de futuro no local.
Ausência de êxodo de famílias	Uma grande parte das famílias permanece na comunidade e tem perspectiva de futuro no local.
Identificação cultural comunitária	Grande parte das famílias compartilha e valoriza uma identidade cultural local.
Presença de festas tradicionais	Existem festas e comemorações tradicionais na comunidade e grande parte das famílias participa.
Ausência de crimes ambientais	Ausência de desmatamento ilegal, queimadas criminosas, tráfico de animais, descarte irregular de lixo ou esgoto.

Ausência de conflitos	Ausência de conflitos internos ou externos sobre o acesso a recursos, disputas entre vizinhos, projetos públicos/privados, mineração impactante, sobre-exploração de recursos naturais ou deslocamentos induzidos pela conservação.
Ausência de violências ou discriminação	Sem violência nem discriminação com base em etnia, raça, classe social, gênero, identidade cultural, religião ou idade...
Conhecimento e uso de plantas nativas	A comunidade possui um profundo conhecimento sobre plantas medicinais e alimentares nativas, animais e microrganismos, incluindo seu uso e manejo.
Uso de medicinas tradicionais	Existem sistemas de cura baseados em saberes ancestrais, transmitidos por gerações dentro da comunidade, combinando conhecimentos sobre plantas, rituais e saúde integrativa entre corpo, mente, espírito e ambiente.

Tabla explicativa de los indicadores de soberanía alimentaria del IASA Resumido
- versión en Español

Eje 1 - Acceso a recursos y servicios.	
Indicadores	Explicación de los indicadores a evaluar
Acceso a la tierra	Hay acceso a la tierra de forma segura, libre de conflictos que amenacen la permanencia en la tierra o la producción de alimentos.
Acceso al agua	Existe acceso a agua con disponibilidad y calidad durante todo el año para consumo, cría y riego.
Acceso a las contribuciones de la naturaleza	Hay acceso a ecosistemas y a elementos de la naturaleza como la biodiversidad, plantas medicinales, alimentos nativos, madera, ríos, lagos, lugares culturales y/o sagrados.
Efectos del cambio climático	Las familias no han sufrido los efectos de inundaciones, granizo, ciclones o sequías prolongadas y extremas que amenacen su permanencia en la tierra o la producción de alimentos.
Autonomía de insumos	Los insumos utilizados para plantar son producidos localmente, reciclando nutrientes y reduciendo la dependencia de fuentes externas.
Transporte accesible	El transporte hacia la ciudad tiene un costo accesible y buena frecuencia.
Acceso a energía eléctrica	Hay acceso a energía eléctrica sin interrupciones. La comunidad dispone de fuentes alternativas de generación de energía eléctrica.
Tratamiento adecuado de basura y aguas residuales	Hay recolección de basura. La basura orgánica y reciclable se separa. Las aguas residuales son tratadas y no se vierten directamente al suelo, como en zanjas o pozos sépticos, o se usa un baño de compostaje.
Acceso a la educación	Existen escuelas cercanas a la comunidad, con transporte escolar y orientadas culturalmente.
Acceso a la salud pública	Hay acceso a servicios de salud de calidad como consultas, exámenes, vacunas, medicamentos, emergencias, especialistas y agentes comunitarios de salud.
Acceso a la asistencia social	¿Existe acceso a asistencia psicosocial y jurídica para familias necesitadas, incluyendo prevención de violencia doméstica y apoyo a grupos vulnerables?

Eje 2 - Modelo de producción

Indicadores	Explicación de los indicadores a evaluar
Relaciones laborales justas	Todas y todos los trabajadoras/es tienen derechos laborales asegurados, trabajo seguro, respetuoso y con salarios justos.
Trabajo basado en la familia	La mayor parte del trabajo en los agroecosistemas lo realizan los miembros de la familia.
Variedad de cultivos/crianzas	Existe una gran diversidad de alimentos cultivados, recolectados y de crianzas.
Buen manejo del suelo	El suelo tiene una abundante diversidad de organismos vivos, está cubierto con materia seca o cultivos de cobertura, posee materia orgánica, no está compactado y es manejado sin labranza ni gradaje frecuentes o a gran escala.
Uso de prácticas agroecológicas	La producción agropecuaria se realiza con prácticas agroecológicas, como uso de semillas criollas, policultivos, biofertilizantes, cobertura del suelo (muerta o viva), compostaje, rotación de cultivos, sistemas agroforestales...

Ausencia de NPK, venenos y OGM	Las familias buscan una eliminación progresiva del uso de herbicidas, insecticidas, fungicidas y otros plaguicidas, fertilizantes químicos y organismos genéticamente modificados (OGM).
Uso de semillas nativas/criollas	Las familias producen, almacenan o intercambian sus propias semillas, manteniendo variedades tradicionales, de polinización abierta y adaptadas a la región y reduciendo la dependencia de fuentes externas.
Conservación del agua	Las fuentes y cursos de agua están protegidos, no están contaminados y tienen vegetación nativa alrededor.
Conservación de la vegetación nativa	Las áreas incluyen zonas confiablemente protegidas de vegetación nativa conservada en proximidad a tierras agrícolas (ej.: en el contexto legal brasileño: Áreas de Preservación Permanente, Reservas Legales).
Uso de tecnologías sociales	Las familias acceden o han desarrollado metodologías que mejoran la calidad de vida. Ej.: economía solidaria, alternativas de saneamiento, cisternas, aplicaciones para comercialización, expresiones artísticas...
Acceso a maquinaria/equipos de producción	Las familias tienen acceso a maquinaria y equipos para la preparación del suelo, siembra, manejo, cosecha, etc., siempre que esto alivie significativamente su carga laboral o riesgos, sin causar daños ecológicos o socioeconómicos sustanciales.

Eje 3 - Procesamiento y comercialización

Indicadores	Explicación de los indicadores a evaluar
Producción de alimentos procesados	Las familias o cooperativas de productores procesan alimentos para prolongar su vida útil y mejorar su valor nutricional o comercial (ej.: conservas, mermeladas, embutidos, harinas, etc.)
Producción de trabajos manuales	La familia produce objetos artísticos o utensilios con barro, fibras o otros materiales locales.
Acceso a maquinaria/equipos para beneficio	Las familias tienen acceso a máquinas y equipos para el procesamiento cuando esto alivia significativamente su carga de trabajo o riesgos, sin causar graves daños ecológicos o socioeconómicos.
Variedad de productos procesados vendidos	Hay una diversidad de productos procesados (alimentos o artesanías) que diversifican las posibilidades de agregado de valor.
Variedad de cultivos/crianzas vendidos	La producción destinada a la venta es diversificada (agrícola, extractiva y animal), sin enfocarse en productos exclusivos.
Variedad de canales de comercialización	Las ventas se realizan por diferentes canales, no se limitan a una sola vía de comercialización.
Venta directa a los compradores	Los productos se comercializan preferiblemente de forma directa al consumidor, sin intermediarios.
Comercio justo	Los valores recibidos en la comercialización son adecuados a los costos de producción y al trabajo invertido.
Los ingresos familiares son suficientes	Los ingresos familiares son suficientes para cubrir las necesidades básicas de alimentos no producidos y otros gastos e inversiones familiares.

Eje 4 - Seguridad alimentaria y nutricional

Indicadores	Explicación de los indicadores a evaluar
Consumo de alimentos frescos y poco procesados	Alto consumo de alimentos frescos como verduras, frutas, hortalizas, o poco procesados como fermentados, molidos, congelados, secos (con poco sal, azúcar, grasa).
Bajo consumo de ultraprocesados	Ocurre bajo o ningún consumo de alimentos con alto contenido de grasa, sal, azúcar y conservantes (ej.: snacks, galletas rellenas, refrescos, fideos instantáneos).
Consumo de comidas tradicionales	Existen recetas tradicionalmente utilizadas y desarrolladas a lo largo de generaciones por las familias, con ingredientes cultivados localmente y técnicas específicas.
Variedad de alimentos consumidos	Las familias tienen una alimentación variada y colorida, basada en una gran diversidad de ítems.
Sin escasez de alimentos	Las familias no han enfrentado escasez en cantidad ni en variedad de alimentos.
Producción suficiente de alimentos	La producción de alimentos familiar es suficiente en cantidad para mantener la alimentación durante todo el año (excepto los ítems que no se pueden producir localmente).
Autonomía de las fuentes de alimentos	Preferencia por alimentos de producción propia, locales, de temporada y tradicionales, reduciendo la dependencia de programas públicos de alimentación, donaciones o mercados externos.

Eje 5 - Políticas públicas y Gobernanza

Indicadores	Explicación de los indicadores a evaluar
Efectividad de las políticas públicas	Las políticas públicas agrarias y agrícolas accedidas han atendido las necesidades de las familias.
Efectividad de la extensión rural	La asistencia técnica recibida ha atendido las necesidades de la producción de la familia.
Intercambio y donación de alimentos	Las familias intercambian alimentos o se ayudan mutuamente cuando alguien lo necesita.
Intercambio de días de trabajo o mingas	Existen intercambios de días de trabajo y/o servicios con otras personas/familias de la comunidad mitiga la carga de trabajo y fortalece el intercambio de conocimientos agrícolas.
Gestión compartida de bienes naturales	Existen bienes naturales comunes que tienen una gestión compartida sobre su patrimonio material, natural y espiritual.
Autodeterminación de los cultivos	Autonomía en la definición de los propios sistemas alimentarios y agrícolas, con poca influencia de agentes externos.
Organización social comunitaria activa	Las familias participan en organizaciones y grupos informales que fomentan la conexión comunitaria.
Redes externas a la comunidad	La comunidad participa en redes que conectan otras comunidades y movimientos sociales para ampliar su incidencia política.
Concejos municipales/regionales	La comunidad tiene representantes en los concejos municipales/regionales (ej.: concejos de salud, educación, desarrollo rural sostenible).

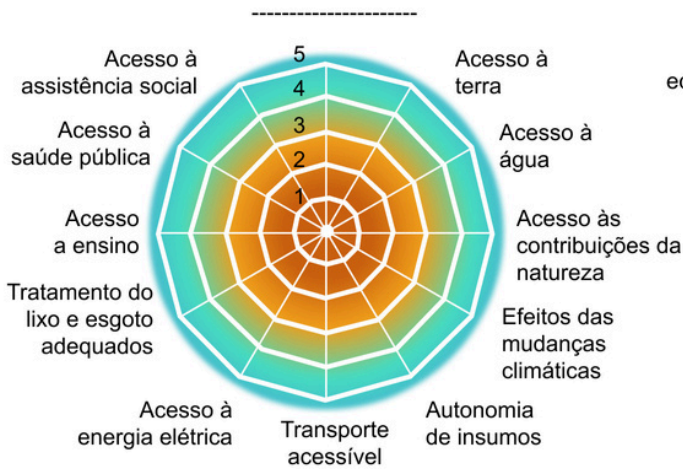
Eje 6 - Aspectos socioculturales

Indicadores	Explicación de los indicadores a evaluar
Participación activa de las mujeres	Las mujeres participan activamente en espacios de toma de decisiones, en la propiedad o derechos sobre la tierra, en el acceso autónomo a recursos, así como en la formación, con una división equitativa del trabajo.
Ausencia de éxodo de familias	Una gran parte de las familias permanece en la comunidad y tiene perspectiva de futuro en el lugar.
Presencia de jóvenes en la comunidad	Los jóvenes permanecen o regresan a la comunidad y tienen perspectiva de futuro en el lugar.
Identidad cultural comunitaria	Gran parte de las familias comparte y valora una identidad cultural local.
Presencia de fiestas tradicionales	Existen fiestas y celebraciones tradicionales en la comunidad y gran parte de las familias participa.
Ausencia de crímenes ambientales	Ausencia de deforestación ilegal, incendios criminales, tráfico de animales, descarte inadecuado de basura o aguas residuales.
Ausencia de conflictos	Ausencia de conflictos internos o externos sobre el acceso a recursos, disputas entre vecinos, proyectos públicos/privados, minería impactante, sobreexplotación de recursos naturales o desplazamientos inducidos por la conservación.
Ausencia de violencia o discriminación	Sin violencia ni discriminación basada en etnia, raza, clase social, género, identidad cultural, religión o edad.
Conocimiento y uso de plantas nativas	La comunidad domina el conocimiento, uso y manejo de muchas plantas medicinales y alimenticias nativas
Uso de la medicina tradicional.	Existen sistemas de sanación ancestrales, transmitidos a lo largo de generaciones, que combinan el conocimiento de las plantas, rituales y salud integrativa entre el cuerpo, la mente, el espíritu y el medio ambiente.

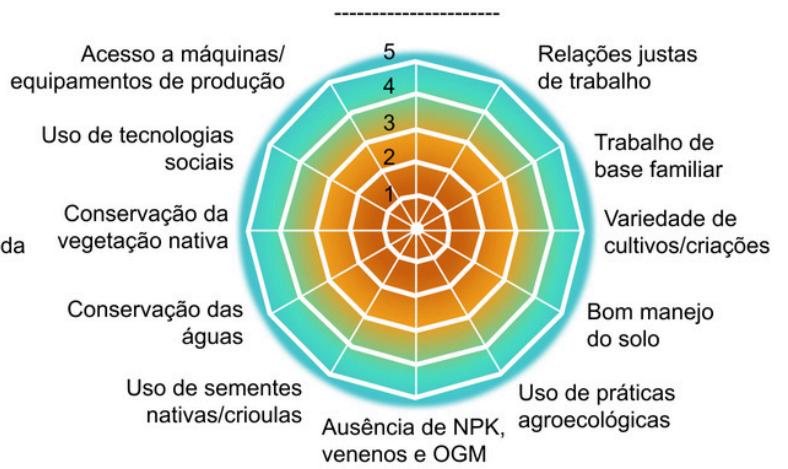
SUPPLEMENTARY MATERIAL D

RADAR CHART PORTUGUESE

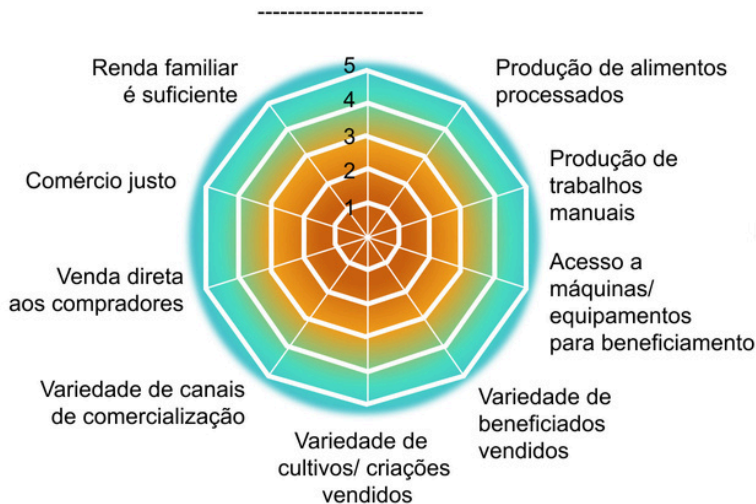
Acesso a recursos e serviços



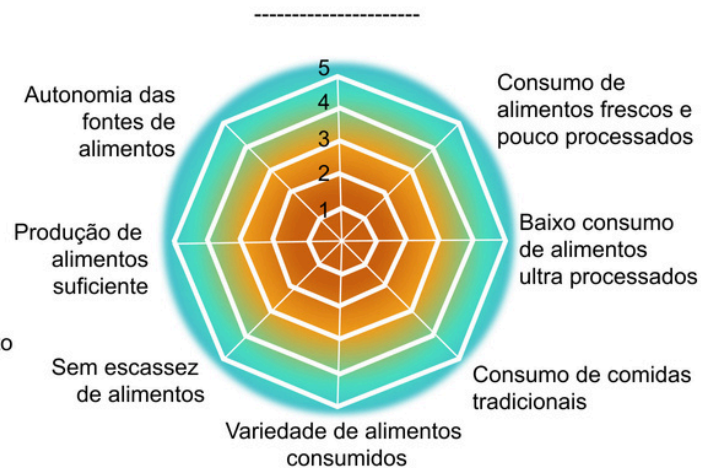
Modelo de produção



Beneficiamento e comercialização



Segurança alimentar e nutricional



Políticas pública e Governança



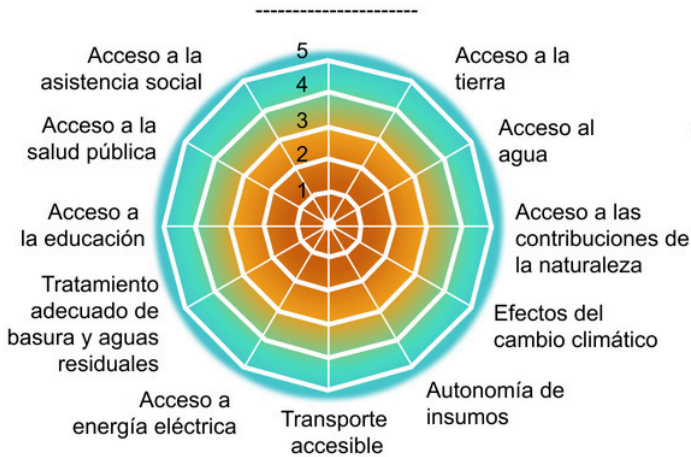
Aspectos socioculturais



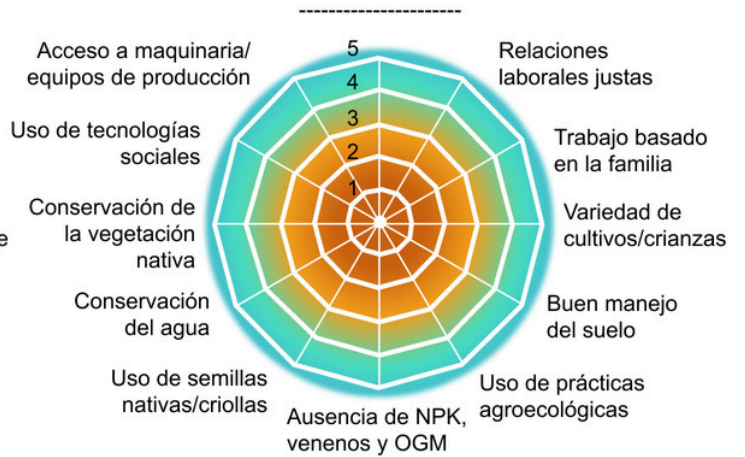
SUPPLEMENTARY MATERIAL D

RADAR CHART SPANISH

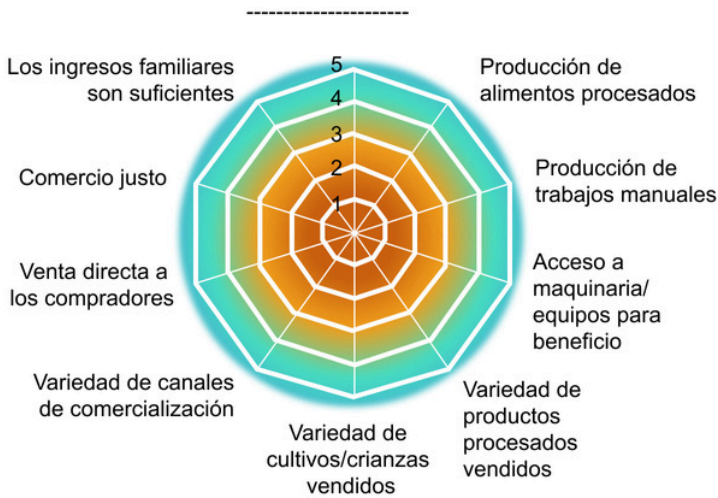
Acceso a recursos y servicios



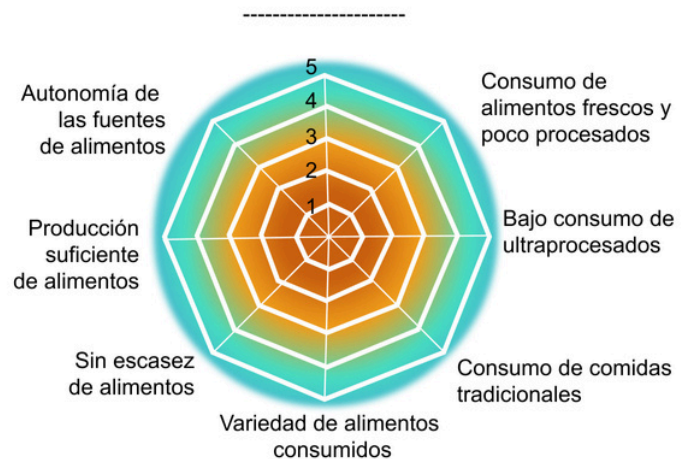
Modelo de producción



Procesamiento y comercialización



Seguridad alimentaria y nutricional



Políticas públicas y Gobernanza



Aspectos socioculturales



SUPPLEMENTARY MATERIAL E

INTERCONNECTION CIRCLE SPANISH



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