

Assessment of the facilitation process of establishing a living lab for co-creating locally-led climate action in Caquetá/Colombia

Thomas Falk¹, Luz A. Rodríguez², Martha Vanegas³, Ryan Nehring¹, Johana Calle⁴, Maria Lopez⁵

¹ International Food Policy Research Institute, ² Pontificia Universidad Javeriana, ³ Alliance Bioversity-CIAT, ⁴ University of Marburg, ⁵ Michigan State University



The authors: **Thomas Falk** is a Research Fellow at International Food Policy Research Institute (IFPRI), Germany; **Luz A. Rodríguez** is an Assistant Professor at Pontificia Universidad Javeriana, Colombia; **Martha Vanegas** is a Senior Research Associate at the Alliance of Bioversity and CIAT, Colombia; **Ryan Nehring** is a Research Fellow at IFPRI, USA; **Johana Calle** is a student at University of Marburg, Germany; and **Maria Lopez** is an Associate Professor at Michigan State University, USA.

Acknowledgement: This work has started under the CGIAR Research Initiative on Low- Emissions Food Systems (MITIGATE+) and was continued under the CGIAR Climate Action Program. We would like to thank all funders who support this research through their contributions to the CGIAR Trust Fund (www.cgiar.org/funders).

About Climate Action: The Climate Action Program aims to drive science, innovation, and collaboration to transform food, land, and water systems for a climate-resilient, net-zero, and equitable future. Through more resilient, low-emissions farms, landscapes, and aquatic systems, we will advance research across agri-food systems benefiting between 38 million vulnerable small-scale producers and value chain actors across 30 countries.

Copyright © 2025 International Food Policy Research Institute. This publication is licensed for use under a Creative Commons Attribution 4.0 International License (CC BY 4.0). To view this license, visit <https://creativecommons.org/licenses/by/4.0>.

Disclaimer: Responsibility for editing, proofreading, layout, opinions expressed, and any errors lie with the authors and not the institutions involved. The boundaries shown on the maps, names and designations used do not imply official endorsement or acceptance by IFPRI, CGIAR, our partner institutions, or donors.

Photo credits: Front cover: Luz A. Rodríguez; Back cover: Juliana Buitrago.

Introduction

One of the key ambitions of the CGIAR Climate Action Program is to support structures that enable affected people to take ownership of food system innovation processes and to determine their goals, strategies, and modalities. To this end, the program team adopts and expands the concept of *living labs*, understood as social spaces - virtual or physical - where stakeholders co-develop new ways of thinking and acting to transform collaboration and practices (Habermann et al., 2024).

In the Department of Caquetá, within the Colombian Amazon, the program supports a place-based and community-led living lab focused on inclusion, environmental justice, and peacebuilding—an initiative participants have termed the “Participatory Rural Innovation Lab: Towards a Sustainable Territory” (PRIL).

This paper presents the results of an assessment of the early dynamics in PRIL’s development in light of the normative principles of the living lab approach. Moreover, it examines whether significant power and agency imbalances exist and to what extent contextual factors influence the process.

Conceptual foundations

The program team intends to facilitate the process of establishing the PRIL following key normative principles (Habermann et al., 2024):

- 1) The first principle highlights the need for **co-production** where the participants acquire a much more prominent role in the innovation process, becoming active designers, be it on social processes, governance modalities or actual products.
- 2) **Social equity and justice** are fundamental for the living lab. If supported by relevant stakeholders and opportunities, a living lab can adopt a gender-transformative approach. This approach aims to remove normative and structural barriers to gender equality, allowing the emergence of more equal power relationships.
- 3) The third key principle is clear living lab **governance and institutional sustainability**.

In assessing how these principles are reflected in the interactions between participating actors, we apply the conceptual framework on agency and behavior change for transforming agri-food systems (ACT) (Freed et al., 2025). In the logic of ACT, diverse actors (individuals or organizations) co-create socio-technical innovations and change their behavior as the result of the innovation process. The framework acknowledges that actors differ in power and agency expressed as Opportunity

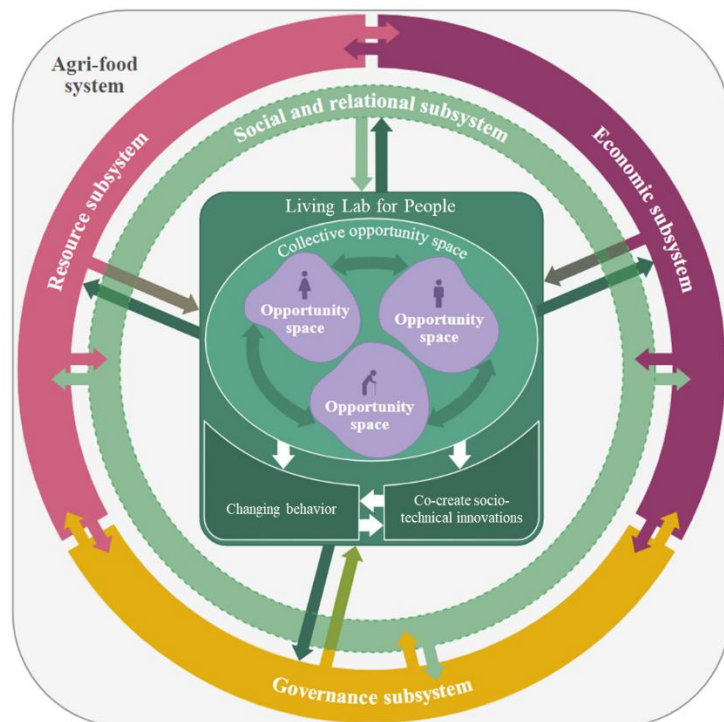


Figure 1: The Living Lab for People in the logic of the ACT framework (based on Freed et al. 2025)

Spaces which affects the dynamics of the process. In addition, ACT recognizes that the innovation process is influenced by the governance, resource, economic, and social-relational context.

Methods

The Department of Caquetá holds significant potential to reduce carbon emissions in its food systems. Changes in the region's natural ecosystems are closely linked to patterns of land occupation and the need for local producers to use and manage land for their livelihoods. The department's food systems have largely been shaped by historical processes of peasant colonization. These processes have occurred in multiple waves, driven by different factors, and are deeply connected to the unresolved issues of land concentration, the absence of genuine agrarian reform, and the internal armed conflict.

At the same time, social organization in the department has been remarkably vibrant. Community mobilization has often arisen in response to the state's neglect of local needs and aspirations—social organizations have, for instance, become vital providers of public goods such as roads. These organizations also play key roles in supporting local livelihoods and facilitating the integration of local production into markets. Therefore, any solution to environmental or social challenges must be anchored in local contexts, grounded in community-specific needs, knowledge, aspirations, and social capital, while incorporating considerations of equity and peacebuilding (Rodriguez & Vanegas, 2023).

To better understand the functioning of food systems in Caquetá and their potential to mitigate greenhouse gas emissions through participatory co-creation of solutions, a series of diagnostic activities have been implemented, focusing on the municipalities of La Montañita and Belén de los Andaquíes. In 2023, these activities included a participatory rural appraisal of cacao and livestock production systems, sustainability assessments of selected farms (agroecosystems), stakeholder mapping of cacao and livestock value chains using the [Net-Map approach](#), and mapping of mental models related to adaptation and mitigation efforts within agroecosystems.

In 2024, efforts shifted toward laying foundations for the co-creation of socio-technical innovations. This phase included a visioning exercise in which system actors jointly formulated a desirable future, a participatory rural innovation workshop to define “innovation pathways,” and a series of capacity-building and exchange activities aimed at strengthening participants' skills and readiness to implement these pathways.

In August 2024, 15 participants of the PRIL visioning workshop were interviewed using a structured questionnaire. Open questions were deductively coded on the basis of the LL4P principles and concepts of the ACT framework. In addition, in September and October 2024, 8 facilitators of parts of the LL4P process were asked to independently complete a questionnaire.

Findings

Co-creation

Participants expressed that they had a high level of influence on the co-creation process with very little variation indicating low perceived power imbalances. Over half of them noted explicit norms, on third informal norms and again one third was aware of rules supporting co-creation, in the PRIL. Such rules were mainly associated with regulations established in the AGROSOLIDARIA association.

The facilitators strongly agreed that the PRIL process was a co-design process. In addition, facilitators expressed that they mainly see a more indirect role for themselves in the co-creation process. Nevertheless, two thirds of them also believed that giving advice was part of their contribution (Figure 2).

According to the facilitators, co-creation is not the most prominent role for PRIL members, even though they were seen as source and recipient of knowledge. In addition, the members' social capital was seen to be very important (Figure 3).

Inclusiveness

Three fourths of the PRIL members noted explicit and one third informal norms supporting an inclusive interaction in PRIL. There was no awareness of explicit rules in this regard.

One third of the facilitators considered the process to be gender sensitive and the remaining facilitators to be gender responsive. The main strategies to support inclusivity in their role as facilitator were moderating the process (37%), building relations (25%) and giving advise (37%).

Sustainable Governance

As mentioned before, rules associated with the AGROSOLIDARIA association are perceived at least by some members to support the cocreation process. At the same time, the facilitators saw their role in supporting the sustainability of PRIL as a Living Lab in more informal domains such as strengthening the relations between the PRIL members, teaching them in approaches how to manage the process, and mobilizing resources. All facilitators agreed that the process was not limited to a short period of time and six out of eight were confident that it could become a permanent organizational structure.

Actors

Three fourth of the people participating in the PRIL process associated themselves with a farmer organization. Less than ten percent were affiliated with the government and about ten percent with a private business. This rather homogeneous group is in contrast to the a more diverse stakeholder landscape having been described in the [stakeholder mapping](#). Asking



Figure 2: Facilitators' perceptions about their role in the LL4P process (percent of facilitators seeing their role to be).

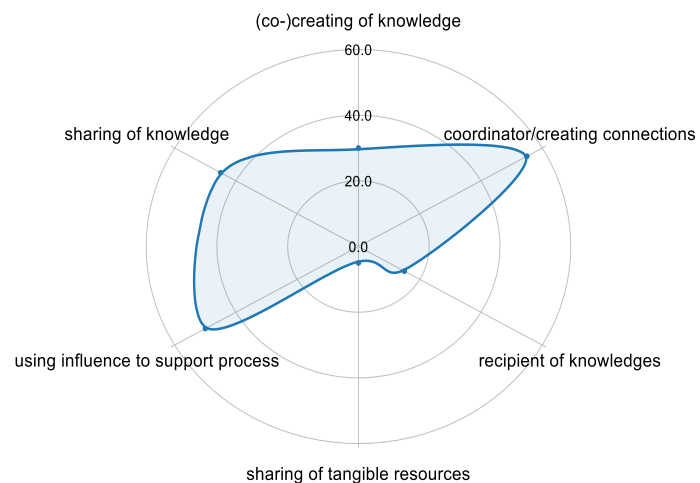


Figure 3: Facilitators' perception about the role of active PRIL members in the process; relative frequency of role having been mentioned (N=8)

facilitators to list actors being important for the PRIL process confirms the perspective that farmer associations are the most important type of actor. It reveals, however, also a strong perceived importance of academia. They further seem to be influential individuals which are not primarily associated with an organization (Figure 4). Actors who may have interest in the PRIL but not having influence on the process and not (yet) playing a role in it did mainly belong to the government and academia. Few (yet) inactive farmer organizations, civil society organizations and private sector actors were also mentioned by facilitators.

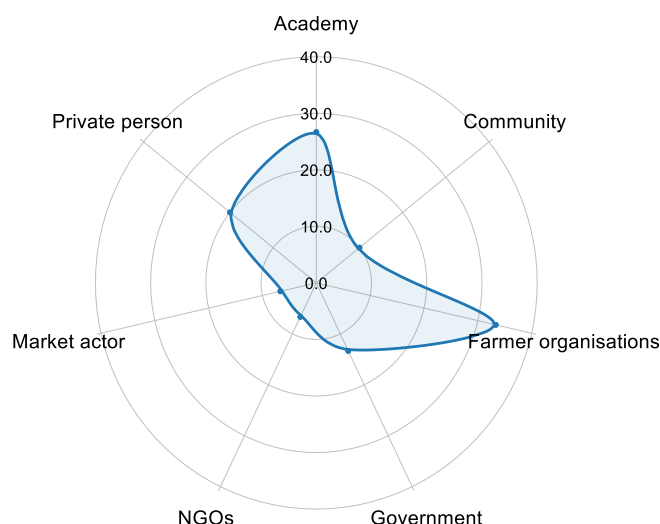


Figure 4: Relative frequency that facilitators mentioned actor types to be important in for PRIL process

Opportunity spaces (power, motivation, resources)

Opportunity spaces describe to the range of choice options available to and preferred by individuals, groups, or organizations. An important aspect of opportunity spaces is the motivation of actors to join a social interaction. All respondents stated that their main motivation for joining the PRIL was the wish to learn. Three fifth expressed that the PRIL will support them in taking concrete actions in their personal or professional lives hinting at the intention to change behavior. Two fifth wanted to support nature conservation by participating in the PRIL. Older people more likely mentioned conservation as motivation to participate in PRIL. Two fifth expressed that participating in the process was an objective in itself. This motive was prominent especially among women. One fourth of the participants mentioned that there is an aspect and goal of creating a collective identity as part of the PRIL process. Facilitators perceptions differed in giving learning less importance but believing that a sense of identity with the community and the territory are important for at least some PRIL members to join the process. At the same time, they acknowledged to a lower extent the value of participating in the process as an objective in itself (Figure 5).

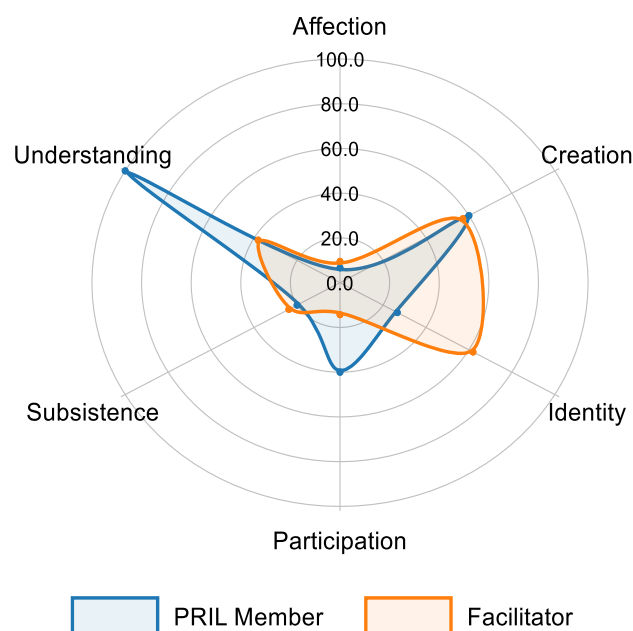


Figure 5: PRIL members' expression and facilitators perception about PRIL members' motivations to participate; relative frequency

Another important dimension of the opportunity space is their sense of self-efficacy. On average, respondents believed that they had a high level of influence on the co-creation

process with very little variation indicating low perceived power imbalances. The evaluation of the own power was slightly higher than the one of other participants. There were no differences in the perception of the influence of women or men, or of leaders. Only older participants were seen to be slightly more influential. All participants believed that they could affect the innovation process by using their expertise and sharing their knowledge. Three respondents believed that they could influence the PRIL process based on their interpersonal skills. Two out of 15 respondents thought that their professional position could affect their influence on the process (Figure 6). This picture is well aligned with the resources the participants offered as contributions to the process. Almost all respondents stated that they offer their knowledge and one third highlighted their social relations as inputs. Only two out of 15 respondents mentioned any tools or machinery and another two natural resources such as land as contributions to the process. Nobody referred to finances.

Also facilitators most frequently mentioned that a PRIL members expertise was her way to influence the process – even though it was less pronounced then in the response by PRIL members. Facilitators more frequently than members believed that members had influence on the process because others want to connect to them as a person (referent power) or because of an influential position the person holds (legitimate power) (Figure 6).

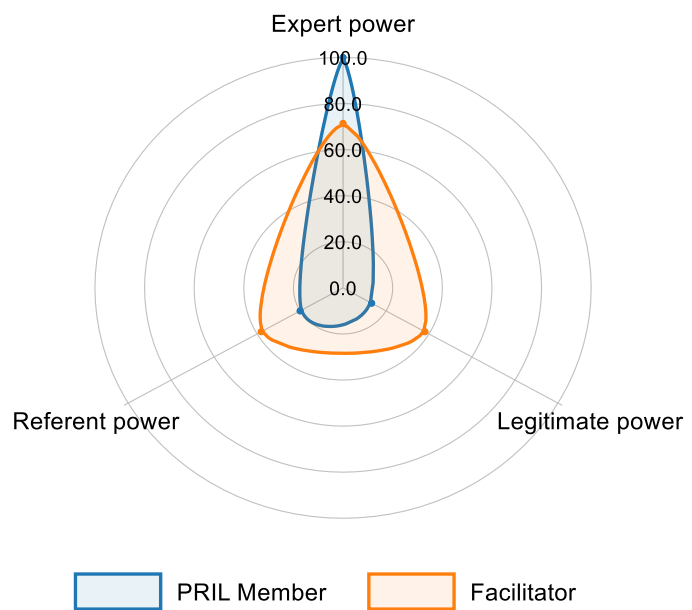


Figure 6: PRIL members' expression and facilitators perception about PRIL members' source of influence on the process; relative frequency.

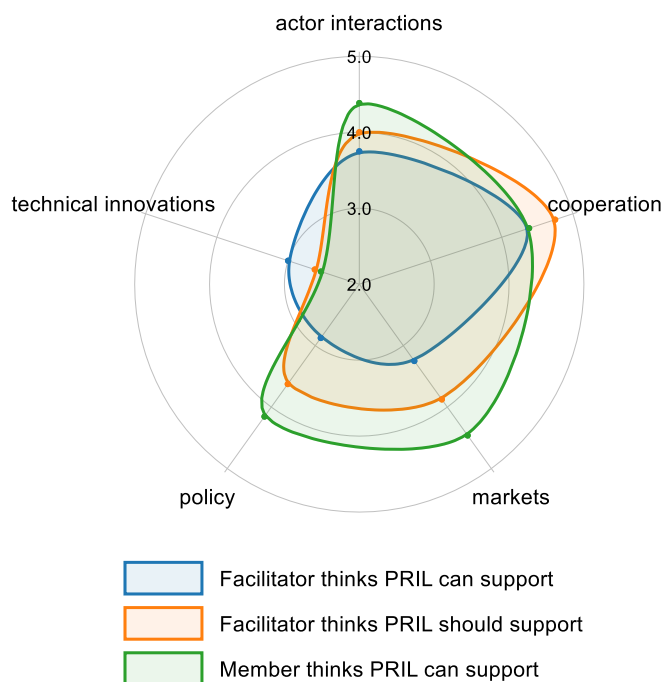


Figure 7: Facilitators' and PRIL members' perceptions on scope of the PRIL process (it can or should influence); mean of rating.

Scope for supporting individual and collective behavioral change

All of the respondents agreed or strongly agreed that PRIL can support the co-creation of policy and market innovations as well as new forms of cooperation. There were no significant differences in the perception between men and women, for leaders or depending on age and

education. Nevertheless, still 40 percent of them agreed that the scope of the PRIL is mainly in the realm of technological innovations.

Facilitators believed that the scope of PRIL was much smaller than what members expressed. The only exception was the area of the potential to develop technical innovations. The picture of what facilitators thought PRIL should do and what members thought it can do was more closely aligned (Figure 7).

Context

Assessing the influence of the contextual factors reveals that PRIL participants see many more hindering than supportive dynamics. One third of the respondents saw supportive aspects and 80 percent mentioned barriers in the realm of governance and the political system. The latter referred mainly to the high level of insecurity due to armed conflicts. One fourth identified supporting factors in relation to the natural resource base and almost half mentioned poor infrastructure as a hindering factor. Two rather younger and better educated participants saw economic opportunities supporting PRIL whereas three respondents expressed concerns about unfavorable market and economic conditions. One third identified supportive and two fifth hindering social and relational dynamics (Figure 8).

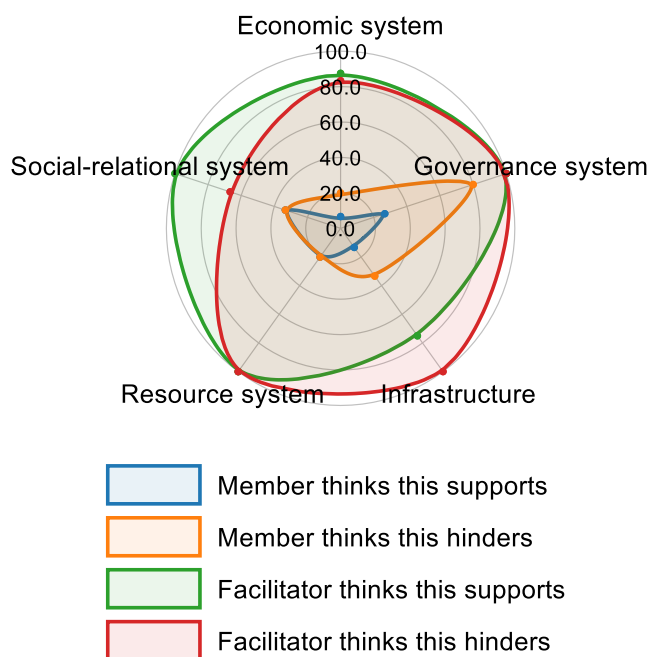


Figure 8: Facilitators' and participant's perceptions on how context affects the PRIL process; relative frequency of context dimension having been mentioned.

Most facilitators named supporting and hindering factors in almost all contextual domains. Infrastructure was perceived to be more strongly a hindering than supportive factor. The social-relational dynamics were perceived to rather support the process than hindering it. The fact that both the PRIL members and facilitators strongly emphasized the negative implications of the violent conflicts in the district deserves to be highlighted.

Conclusions

Overall, the PRIL participants indicate a high level of satisfaction with the process. Everybody feels to be able to influence the process and is motivated to share knowledge and learn. No pronounced imbalances in power and agency were highlighted including not for gender. Women highlighted more likely that participating in the process by itself was a reason for them to join PRIL. Despite the fact that most participants not aware of formal rules ensuring inclusive participation, the perception of the process being inclusive and fair with everybody having equal power to participate was strong. This indicates that the normative living lab principles are deeply embedded both in the social practices of the PRIL. In such a situation, introducing formal rules may crowd-out intrinsic motivations. At the same time the weakness of formal rules may create a vulnerable situation and the inclusivity of the process should be continuously monitored.

The assessment points at the need to reflect again who should be involved in co-creating social-technical innovations towards low-emission food systems. Predominantly relying on producer organizations may limit the scope of what PRIL can achieve.

References

- Freed, S., Voss, R. C., Falk, T., Rietveld, A. M., Alary, V., Chimonyo, V. G., Frija, A., Guettou-Djurfeldt, N., Lestrelin, G., & Singh, S. (2025). Agency and behavior change in agricultural research for development: New directions for guiding agri-food system transformations. *Agricultural systems*, 228, 104399.
- Habermann, B., Nehring, R., Zhang, W., Hettiarachchi, U., Leñero, E. M.-V., Falk, T., Rietveld, A. M., Woltering, L., Kumar, P., & Wang, X. (2024). *A conceptual framework of living labs for people for sustainable food systems*. Intl Food Policy Res Inst.
- Rodriguez, L. A., & Vanegas, M. (2023). Living-lab for people in the Colombian Amazon: a pact for a sustainable territory.

