

Reading Note 3: Categories and Roles of Stakeholders in Living Landscapes

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0. Introduction

This Note is the third of a series of reading notes reviewing selected literature on concepts, approaches, methods, and experiences that the Initiative on Agroecology (IAE) and particularly its WP1 employs for the emergence and consolidation of Agroecological Living Landscapes (ALLs) aimed at fostering agroecological transitions. Each reading note provides insights and reflexive questions on one

aspect of the ALLs functioning. After reviewing in previous notes the ALL concept (Note 1: <https://hdl.handle.net/10568/138921>) and internal governance (Note 2: <https://hdl.handle.net/10568/152191>), this note focuses on the categories and roles of stakeholders. As actor-based processes, ALLs rely on the capacity and willingness of stakeholders to play certain roles and fulfill responsibilities to achieve established goals. Stakeholders are broadly defined as any group or individual affected by the achievement of an organization's objectives (Imset et al., 2018). This Note provides some grounds to continue the reflection on power initiated in Note 2. Recognizing stakeholder categories is an important process in LLs, as categories point out grosso modo who and who will not be included. This is a political decision that could ultimately determine who is empowered through LLs and who is not. Identifying roles, for its part, influences how stakeholders are empowered (or not), how they could mobilize their "pre-existing" power, and in general, how ALLs influence the power balances among different stakeholders.

This Note does not provide detailed methodological guidance or a formalized analytical framework, nor does it constitute an exhaustive literature review for academic purposes. For methodological guidance, please see the document Engaging with Stakeholders for Initiating Agroecological Transition in Living Landscapes (<https://hdl.handle.net/10568/127414>) where six engagement principles are identified. To know better how the notes have been developed, please refer to the Methodological Appendix at the end of the document.

1. Categories of Stakeholders

Two classifications to understand categories of stakeholders were found in the literature. The first is based on the sector to which the stakeholders belong. The second is based on their position at the different levels of sociotechnical transitions, such as the agroecological transitions promoted by the CGIAR Initiative on Agroecology.

a. Sectorial Classification

The quadruple helix model (Hossain et al., 2019; Imset et al., 2018) posits that Living Labs (LLs), as efforts toward improving public outcomes (see Note 1, sections 1 & 2) should rely on the participation of four categories of stakeholders, as Figure 1 shows.

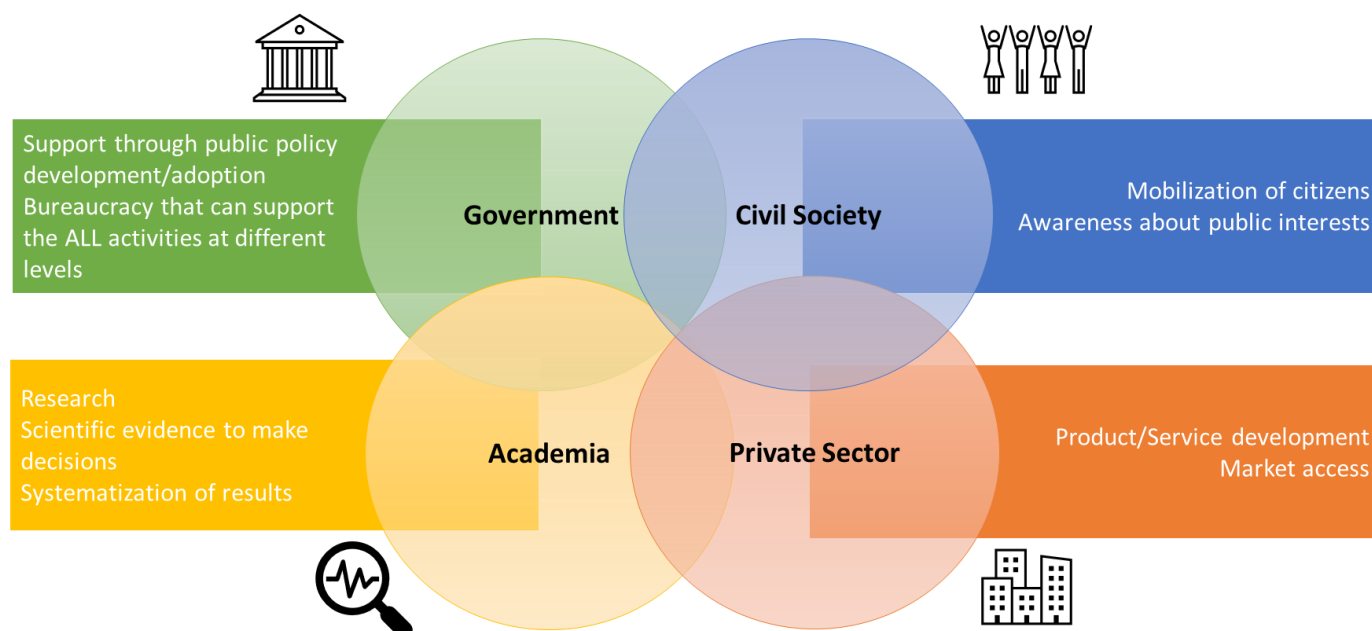


Figure 1. Quadruple Helix

Source: Authors based on (Bancerz, 2021; Hossain et al., 2019; Imset et al., 2018)

Although the literature on LLs advocates for the inclusion of all stakeholder categories during their establishment, the specific objectives, mission, and agenda of the LLs influence the selection and involvement of stakeholders in diverse ways.:

1. **Categories of stakeholders:** some LLs tend to omit the private sector, mainly because of a lack of interest from companies and businesses in the public outcomes sought by the LLs (Lamers et al., 2017; Ragasa et al.,

2016). In other cases, policymakers are not initially engaged, especially in the case of bottom-up initiatives that consciously want to avoid the risk of government officials controlling the process and creating/enforcing power imbalances. However, in general, the involvement of public servants is considered important as they play an essential role in the sustainability of the LLs or their outcomes by enforcing the decisions made in the LLs, facilitating coordination across levels/sectors, and providing funds (Bancerz, 2021; Ratner et al., 2022).

2. **Evolution of the LL:** some stakeholders are included in the late stages when the problem, objectives, and common values have been identified and initial LL participants strategically decide to invite and include “new” stakeholders as they consider collaboration with them crucial for the activities and success of the LLs (Arnould et al., 2022; Castella et al., 2022).
3. **Scale:** The objectives, mission, and agenda also influence the geographical scope of the LL and thus the stakeholder categories from different scales to be included (regional, national, or even global (e.g., multinational companies or multilateral cooperation organizations)) (Magala et al., 2018; Mutebi Kalibwani et al., 2018; Wellbrock & Knierim,

2014). Therefore, some LLs could be restricted to the local scale, while other LLs are multi-level platforms in which the engagement of stakeholders acting at diverse scales is necessary.

Box 1 presents some cases showing the variation in sizes of LLs. From the perspective of stakeholder composition, these sizes are determined by the number and categories of stakeholders engaged and the geographical scale on which they act. Size is also influenced by the objectives of the LLs, which also defines the duration of the LLs, as stated in Note 1 (Some LLs could have a short duration as their objectives are rapidly attainable, while other LLs need longer to develop and reach their goals).



Box 1. Different Sizes of Living Labs, Innovation Platforms, and Multistakeholder Platforms

A Local Multi-Stakeholder Platform in Peru

A Multistakeholder Platform was formed in the Amarakaeri Communal Reserve in Perú, which expands over 500 hectares in the department of Madre de Dios in the Peruvian Amazon. The Reserve is co-managed by Peru's Protected Areas Service (SERNANP) and Executor of the Contract of Administration-Amarakaeri (ECA-Amarakaeri), an organization representing the 10 Indigenous communities in the Reserve's buffer zone. A Multistakeholder Platform (MSP) was created to engage indigenous organizations, the SERNANP, and national NGOs. The main outcomes of the MSPs have been knowledge sharing, approval of the Reserve's 2016–2020 Master Plan, and discussion of the implementation of Indigenous Amazonian REDD+ (Sarmiento Barletti et al., 2022, p. 6). In this case, the platform comprises local and national organizations but with a local focus, as the platform was explicitly formed to address the management of the communal reserve. Additionally, the private sector and academia are not included, as these sectors are not strategically linked with the platform's objectives, mission, and agenda.

A National Innovation Platform in Ghana

The livelihoods of more than one million farmers in Ghana depend on cocoa production, which accounts for more than 10% of the GDP. The Ghana Cocoa Board (COCOBOD) arranges credit, inputs, prices, and exports (Van Paassen et al., 2014, p. 196).. Gradual reforms allowing some licensed buying companies and Cargill processing were introduced in the 2000s yet the government retained quality and price control. However, cocoa production and marketing in the country are challenged by a gap between farm gate prices and export market prices generating incentives for some farmers to smuggle cocoa to Ivory Coast. A national platform was formed in 2007 to improve value chain governance, improve incentives and information access to farmers, and reduce waste in production. The Cocoa-Coffee-Sheanut Farmer Association and related cocoa input company, farmer-based marketing company Kuapa Kokoo were entitled to represent the farmers. The COCOBOD had representation by officers from the national and regional levels. Other members included a researcher from the Ghana Standards Authority, the adviser to the Minister of Finance and Economics, and the cocoa export company Cargill This platform had a national character aiming to impact all the Ghanaian cocoa value chain segments. In this case, the engagement of the different categories of stakeholders, including the private sector, was necessary.

A Multi-level Innovation Platform in the Democratic Republic of Congo

In 2008, the Democratic Republic of Congo (DRC) implemented the Agricultural and Rural Management Councils (CARGs), Advisory Councils at the Provincial Level, and the National Advisory Council as participatory platforms for

planning and decision-making around agricultural service provision and policy making (Ragasa et al., 2016, pp. 828 & 837). Both platforms were integrated into the Ministry of Agriculture. The CARGs operated at the local level and engaged farmer groups and civil society organizations intending to increase their influence on policies and programs in the sector while promoting transparency and accountability. They also engaged all relevant government offices, traditional authorities, grassroots organizations, non-government organizations, donors, research institutes, churches, schools, and private companies operating in the territory. 143 CARGs were established by 2011. The councils at the provincial level were composed of the representatives of the CARGs, while the representatives of the provincial level formed the National Advisory Council. The National Council provided a space for policy dialogue, knowledge exchange, communication, and advisory to the Ministry of Agriculture, whereas the Provincial Councils focused on developing and implementing provincial agricultural plans, a market information system, and rural radio communication. The CARGs, Provincial Councils, and National Council thus constituted a quite comprehensive platform aiming to improve agricultural policies and implementation, in which local, national, and international stakeholders were engaged.

b. Multi-level Classification

In addition to the sectorial classification of the quadruple helix model, Büniger & Schiller (2022) propose a stakeholder classification based on the multi-level perspective for socio-technical and sustainability transitions, such as agroecological transitions.

According to this perspective, three main levels can be distinguished to explain socio-technical change: the regime, the niche, and the landscape (Geels & Schot, 2007). The regime and niche are organizational fields or communities of interacting groups that share certain rules to coordinate their actions. These rules include regulations, standards, and laws, but also relationship values, behavioral norms, and belief systems that determine how problems and innovation agendas are defined. However, the regime refers to the status quo enforced by a large group of well-coordinated actors interested in optimizing current processes, generating path dependency, and maintaining cognitive and knowledge lock-ins. The niche is instead an isolated and protected space from the regime, in which experimentation toward systemic change can take place (Büniger & Schiller, 2022). These spaces are composed of small networks of actors that support different types of innovation and rules are rather unstable (Geels & Schot, 2007). The landscape refers to the technical and material structures providing the external context for socio-technical transformation, making some actions more viable than others.



INALL Exchange Visit Zimbabwe - Kenya
Source: Kenya Country Team

Following a multi-level perspective, socio-technical transitions are triggered by the alignment of a niche gaining momentum by learning, high performance of innovations, and the support of powerful stakeholders, a landscape exerting pressure on the regime, and a destabilized regime in which windows of opportunity for change are created making possible adjustments (Geels & Schot, 2007). Importantly, these transitions are shaped by the agency of regime, niche, and hybrid actors (Büniger & Schiller, 2022). Here actors are defined as individuals, groups, or organizations whose agency is constrained or enhanced by specific rules, organizational fields (i.e. regime and niches), and structures (i.e., landscape) (Geels & Schot, 2007). Following the definition provided in the Introduction, we understand these actors in this Note also as stakeholders.

1. **Regime actors** are the actors who try to optimize and maintain the existing system or status quo because they benefit from it.
2. **Niche actors**, who are usually outsiders or conviners. Outsiders do not share the regime's rules and have little to lose if radical innovations are developed. The convincer is an actor personally motivated and engaged in sustainability and innovation, motivating and engaging others in transformation.
3. Finally, for sustainability innovations to become mainstream and unleash their transformative potential, some connections between the niche and the regime levels are

necessary. **Hybrid actors** develop these connections, thus performing a bridging role between niche and regime. Hybrid actors emerge from the regime but distance themselves from it by recognizing the need for change and collaborating with niche actors to develop innovations.

LLs are spaces in between the niche and the regime (Adjei-Nsiah & Klerkx, 2016; Bouwma et al., 2022). Under this perspective, niche and hybrid actors should be engaged in LLs. Box 2 invites you to reflect on the different categories of engaged stakeholders in the ALLs.



Box 2. To reflect

- Has it been challenging to engage certain categories of stakeholders? (For instance, the private sector). Why? Is this a problem for achieving the objectives of the ALL(s)? What actions could be taken to involve them?
- What stakeholders have been included as a result of the evolution of the ALLs?
- Are the ALLs multi-scale? Is this necessary for the objectives, mission, and agenda of the ALLs? Or on the contrary, are the ALLs locally oriented as this best suit the needs of the stakeholders?
- Does the ALL(s) involve stakeholders considered hybrid actors? If not, would it be desirable to involve some? What actions can be taken to involve this kind of actor?
- Does the ALL(s) involve stakeholders considered regime actors? If not, would it be desirable to involve some? What actions can be taken to involve this kind of actor?

2. Development of Roles in Living Labs

Roles are the “behaviors expected of parties in particular positions” (Nyström et al., 2014, p. 484) and constitute an important governance element of LLs. Roles can be defined in advance based on a **normative** approach in which actions and responsibilities are prescribed for stakeholders (Nyström et al., 2014; Toffolini et al., 2021). In this case, “roles are conceived as consciously decided

by others, or as resulting from the deliberate mobilization of resources and power positions for maintaining and building new positions and legitimacies” (Toffolini et al., 2021). Roles can also be considered as the result of the interactive processes in the LLs. This **constructive** approach considers roles to be the product of the stakeholders’ perceptions, interactions, and conflicts. Box 3 exemplifies normative and constructive approaches.



Box 3. The Case of an Innovation Platform in Ghana to address sustainability challenges of the oil palm value chain.

Artisanal processing in the Ghanaian oil palm value chain was highly problematic as the fruit was stored after harvesting for 2-4 weeks and old lorry tires were used as a cheap fuel for boiling the fruit. This caused low oil quality due to high free fatty acid content, environmental pollution, negative impacts on human health, and limited market access due to low quality and too expensive costs of removing free fatty acids to millers linked to export markets. Additionally, the

artisanal sector was highly unregulated, and public support via training or direct investment was non-existent. The innovation platform initially engaged eight stakeholders, mixing local and national stakeholders to develop and adopt two types of innovations: 1. Technical innovations, exploring fuel alternatives to old tires. 2. Institutional innovations, designing higher quality standards, and developing diversified market channels.

Regarding technical innovations, members of the platform wanted to understand why processors used tires. A study found that tires were a cheap, readily available source, and the fruits could be left bowling overnight unattended. The small processors representative, mainly women, played a crucial role in changing the practices. She proposed using fiber cake and empty fruit bunches as an alternative to tires, halving fuel costs. Besides actively participating in designing, testing, and assessing this alternative, she played a major role in advocating and lobbying before legislators and local traditional chiefs for them to enact rules that banned the use of old tires and promoted instead the use of the oil palm by-products as fuel. She also engaged processors to adopt this practice. From the beginning, the platform empowered her to engage other processors and to play an advocacy role. She fulfilled a normative role linked to typical expectations of active engagement of the final users in the design and adoption of innovations, as a way of legitimizing them. This is not always the case: expectations can also be of a consultative type of participation simply aiming at validating innovations rather than engaging actively in designing solutions and subsequent advocacy. Here, besides a normative role, the artisanal processors' representative could be identified as a niche actor according to the classification provided in section 1 of this Note.

In the case of the Ghanaian platform, the presiding member of the Kwebibirem District Assembly, where the platform was based, was not included in the initial group of eight stakeholders (Adjei-Nsiah & Klerkx, 2016). However, he actively supported the cooperation between the assembly and the platform toward designing and implementing a new regulatory framework for modernizing the artisanal processing industry. He mainly acted as a broker facilitating access to local public policymakers and information, gradually becoming an important stakeholder with clear responsibilities through the platform's evolution. In this case, he played a constructed rather than a normative role. Also, this actor could be identified as a hybrid actor.

Based on: Adjei-Nsiah & Klerkx (2016).

Normative and constructive approaches are not mutually exclusive. A normative role can transform as part of the LL process and, conversely, new types of roles can emerge as the result of the particular trajectory of a LL and become normative roles (Klerkx & Aarts, 2013; Turner et al., 2020). Also, a role formerly performed by a stakeholder could be undertaken by another stakeholder. In the same vein, a role that was considered crucial in the early stages of a LL may not be necessary in later stages, or conversely, the necessity of a stakeholder playing a specific role can emerge in the late stages.

In any case, roles are intersected with power. Roles constrain or enhance stakeholder actions,

and eventually, the outcomes of the LL process. Power is exerted in roles when one or a group of stakeholders defines roles for other stakeholders, or when stakeholders transform their roles in the LL trajectory. These considerations help us to emphasize and reflect on the dynamic nature of roles within LLs and the importance of roles as they are products of the agency of stakeholders. Box 4 introduces key role patterns and mechanisms in LLs capturing this dynamism, while Box 5 suggests questions to reflect on how roles are defined or constructed in the ALLs in each country.



Box 4. Key Role Patterns & Mechanisms in Living Labs

Role patterns refer to:

- Role assignment: A concrete role is assigned to a stakeholder
- Role definition: Tasks may be modified as change takes place
- Role change: Taking a new role while giving up another

- Inter-role conflict: When a stakeholder plays more than one role that collides with other roles.
- Role transition: Changing one role into another
- Role alteration: A temporary change in role
- Role distance: Differentiating the self from a role.
- Role ambiguity: Failing to fulfill anticipations due to ambiguous expectations.

Role mechanisms, for its part, provide a tool for identifying the behavior of stakeholders, and their ability or inability to make choices. There are two types of mechanisms.

- Role taking: means that a stakeholder enters a predetermined role, with tasks defined by the role sender. It is a passive role. In the case in Box 3, the small processors' representative.
- Role making: characterizes how a stakeholder transforms the expectations of other actors into concrete behavior. This mechanism implies that the role is defined and shaped by its maker. In the case in Box 3, the presiding member of the Kwebibirem District Assembly.

Source: Leminen et al. (2015, p. 9)



Box 5. To reflect

- What roles were defined by the very beginning in the ALLs? Are these roles still relevant for the ALLs?
- Are stakeholders that fulfill more than one role in the ALLs? Has this situation created problems for the ALL functioning, or on the contrary, has been beneficial?
- What other role patterns are identifiable in the ALLs? How have these patterns affected the functioning of the ALLs?
- Have some roles changed for ALL stakeholders? Why? How do these changes affect the ALLs?
- Do the ALLs have stakeholders that are more passive, and thus comply with their roles, and other stakeholders that have actively changing initial expectations regarding the role they were intended to play?

3. Roles of Stakeholders in Living Labs

Despite their dynamic nature, some basic roles are performed in LLs, independently of their context or history (Klerkx & Aarts, 2013). Four basic roles in LLs are enablers, providers, users, and utilizers (Hossain et al., 2019). **Enablers** refer to the stakeholders that make the LL possible, usually, by promoting the activities of the LL and providing resources, including funding. **Providers** are the stakeholders that facilitate knowledge, expertise, and innovation support activities for the LL functioning. These stakeholders are usually research institutes, universities, or consultants. **Users** are citizen representatives and ideally have an active role in LLs, because "users are equal to other participants in living labs, as they are genuine co-creators of value. They participate in various intensive analyses concerning their everyday life, as well as in planning and doing the innovation

development work" (Westerlund & Leminen, 2011). In the example in Box 3, this was the case of the artisanal processors' representative. Users in ALLs are usually farmers. **Utilizers** are the organizations that will benefit from the innovation activities resulting from the LLs (e.g., a private company, or a farmer cooperative).

In the next sub-sections, we will focus on the roles of champions, mainly identified from the innovation platforms literature, and users, identified from the LL literature. As some typologies and labels derive from studies based on corporate and business management, applying them in the context of agricultural innovation may sound strange (Klerkx & Aarts, 2013; Leminen et al., 2015).

a. Innovation Champions in Living Labs

One of the main governance challenges related to roles is how to motivate LL members to participate and engage in the activities and responsibilities, as stringent control cannot be imposed on them (Hossain et al., 2019; Westerlund & Leminen, 2011). Specific stakeholders in the LL may be able to motivate others to undertake a particular role and fulfill the attached responsibilities. Besides motivation, they can also contribute to activities such as coordination, decision-making, and ensuring communication flows. Stakeholders who actively support the innovation process in this manner are known as innovation champions.

According to Klerkx & Aarts (2013) innovation champions are “individuals who informally emerge in an organization and make a decisive contribution to the innovation by actively and enthusiastically promoting its progress through the critical stages” (Howell et al., 2005, p. 642). [Champions] are seen as key in removing several barriers that emerge in innovation processes, such as lack of resources, missing linkages and deficient coordination between actors, and the opposition of incumbent actors (Fichter, 2009; Hauschildt and Kirchmann, 2001). Champions thus fulfill an important coordinating role”.

Champions can also be seen as leaders as they contribute to creating the “context and conditions (adaptive spaces) that enable networked interactions to foster generation and linking up of novel ideas, innovation and learning in a system” (Magala et al., 2018, p. 151). Two types of factors favor the emergence of leadership in LLs: 1. **Intrinsic factors** encompass internal governance mechanisms (see Note 2) such as structures or internal organization for decision-making and functioning of the LL, rules, regulations, incentives, and sanctions, but also training on LL functioning, personal attributes, knowledge exchange, and feedback; 2. **Exogenous factors** include contextual elements such as external policy, availability of external funding and market forces, and social and political capitals of the leaders (which refers to their connection with other stakeholders and external actors enabling

them to exert power and mobilize support to the LL activities).



Field Visit Laos
Source: ANC

The different connections that stakeholders have developed, or in other words, their social and political capitals, are used by champions to facilitate cooperation within the LL, gather resources and support for the LL activities, and in general, reach the objectives of the LL. In this sense, it is useful to think not only in the social networks outside the LL in which the stakeholders are embedded but also to think of LLs as networks themselves, in which different connections among stakeholders are mobilized, particularly by champions, for advancing the objectives and agenda of the LL. Some champions that are necessary for LLs include:

1. **Champion of the vision:** A stakeholder that mobilizes the vision and inspires other stakeholders to see beyond the challenges to keep the LL goals in mind (Edlmann & Grobbelaar, 2021).
2. **Orchestrator:** Champion that organizes, manages, and supports the activities of the entire network of stakeholders in the LL (Arnould et al., 2022; Nyström et al., 2014). The orchestrator strives to establish trust and boost collaboration (Nyström et al., 2014). One risk of orchestration is that it may centralize the LL processes in one stakeholder (Edlmann & Grobbelaar, 2021). This role is similar to what Bünger & Schiller (2022) call the mediator of change agent, who is a mobilizer, motivator, and convincer bringing together different

stakeholder networks, spurring collaborative behavior from specific stakeholders. This role is best fulfilled by hybrid actors, who can convene regime and niche actors to join innovative endeavors (Bünger & Schiller, 2022).

3. **Facilitator:** An actor who helps the stakeholders to achieve specific goals or find appropriate direction. The facilitator is responsible for supporting specific groups of stakeholders (Arnould et al., 2022) and should be a neutral and respectful party focused on “managing aspects of communication to ensure constructive discussions” (Edlmann & Grobbelaar, 2021). Therefore, it is recommended that the facilitator is not a stakeholder. Garard et al. (2018) argue that the neutrality of the facilitator, expert knowledge of the issue at stake, and multiple facilitators are possibilities that strongly depend on the LL and the context in which it develops. Particularly neutrality could be seen as a problem. A practitioner stated that it “would make it all quite artificial building up trust with people if you would only work with neutral facilitators because it makes it clear that there is a distance” (p. 10). In any case, the facilitator should help with conflict management, inclusion (everyone’s voices should be heard), and reflexivity as the champion in charge of communication (Augustine et al., 2016; Sell et al., 2018).
4. **Institutional Entrepreneurs:** Actors who develop alternative rules and practices and translate niche practices into regime practices (see Section 1), boosting innovation in the regime (Bünger & Schiller, 2022). Hybrid actors best fulfill this role. According to Adjei-Nsiah & Klerkx (2016), mechanisms and strategies of institutional entrepreneurs include “advocacy, networking, mobilization of collective actions

to change power, structures and prevalent framings of problems and solutions, and sometimes “bending” existing institutions towards new uses” (p.6).

Additionally, Klerkx et al. (2013), based on Fichter (2009), identify the following types of champions.

1. **Technology or expert champion:** Inventor or expert who exerts power based on knowledge and technical expertise to advocate for advancing a particular technology. Note that this role is different from that of a provider (identified at the beginning of section 3), as it implies the active involvement of the actor in advocating for innovation.
2. **Power champion:** A high-level and powerful person who is little involved in the innovation process but can exert political and social influence to mobilize support for this process based on his/her control of resources and hierarchical potential (e.g., a CEO).
3. **Process champion:** Connects the technology and the power champions through a power based on communicational skills and procedural know-how, creating a receptive environment to the innovation by bridging the technical aspects of the innovation and its business aspects.
4. **Network champion:** Plays a brokerage role among the different actors involved in the innovation, helping to overcome organizational and coordination barriers.

Nyström et al. (2014) provide a comprehensive typology summarized in Figure 2. We divided the types of roles into those champions focused on networking and decision-making (green) and those focused on communication (blue).

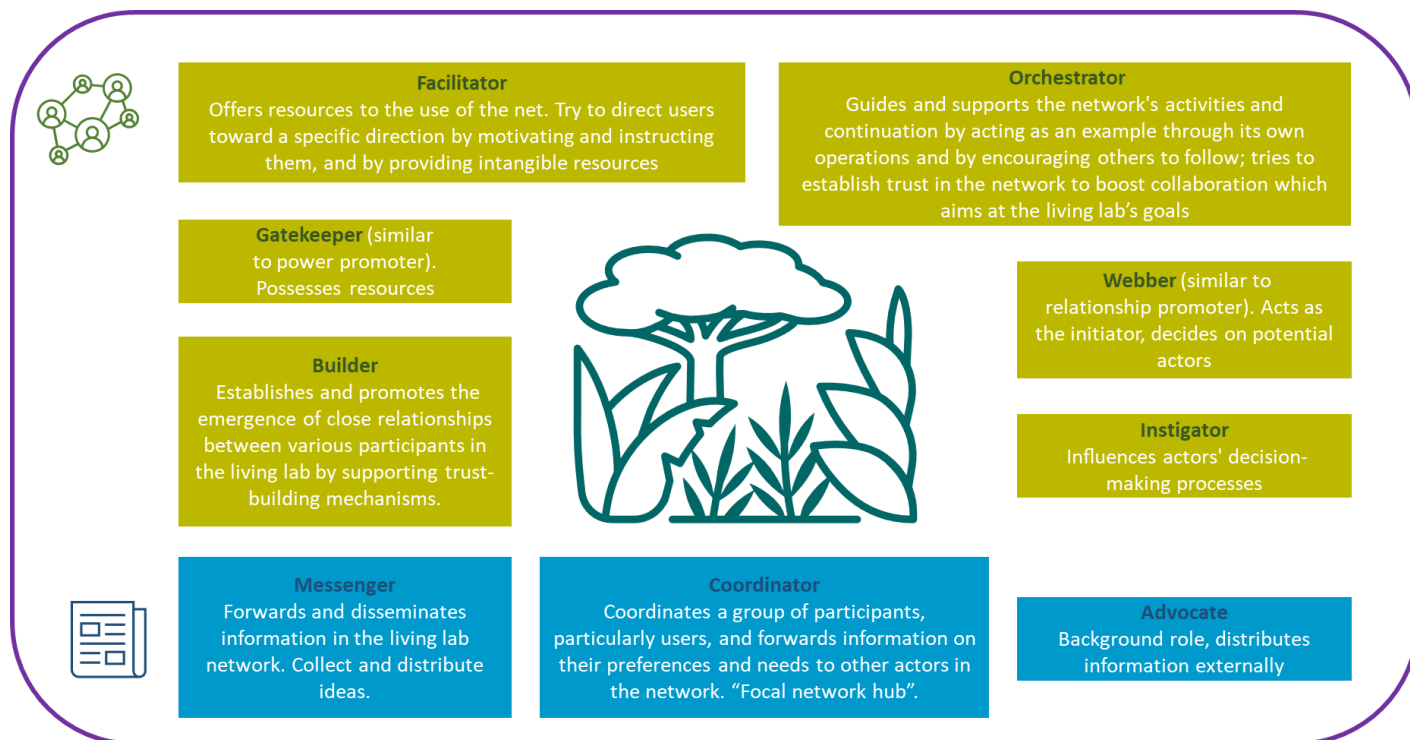


Figure 2. Roles in Living Labs according to Nyström et al. (2014) expanding on Heikkinen et al. (2007)

Source: Authors based on Nyström et al. (2014)

Box 6 introduces questions for you to reflect on stakeholders playing champion roles in your ALL(s)

Box 6. To Reflect

- Are there champions or would-be champions in the ALLs? Who are they? What kind of champions are they?
- Is there a need to enhance the role of certain stakeholders to act as champions in the ALLs(s)?
- What can be done to enhance the capacities and roles of these champions?
- How can the ALL and its functioning take advantage of having champions?
- What are unrecognized roles in the LL literature played by stakeholders in the ALLs?
- What are the champion roles the AE-I team played in the ALLs?

b. Roles of Users in Living Labs

Ideally, users in a LL are actively engaged in co-designing innovations. However, the involvement of users in the innovation process varies, affecting innovation outcomes. For example, Leminen et al. (2015) found that role-taking, as defined in Box 4 (a stakeholder enters a predetermined role), is linked in the case of users to incremental innovation. Role making in users (a stakeholder transforms the expectations of other actors into concrete behavior), instead, is linked to radical innovation. Incremental innovation refers to step-by-step improvement for a product, service, or process, resulting in minor changes and novelty. Radical innovation instead entails a drastic differentiation with current practices, technologies, and outcomes. Combining two variables (type of role and type of innovation), Leminen et al. (2015) propose the following framework for differentiating between four possible user roles (Figure 3).

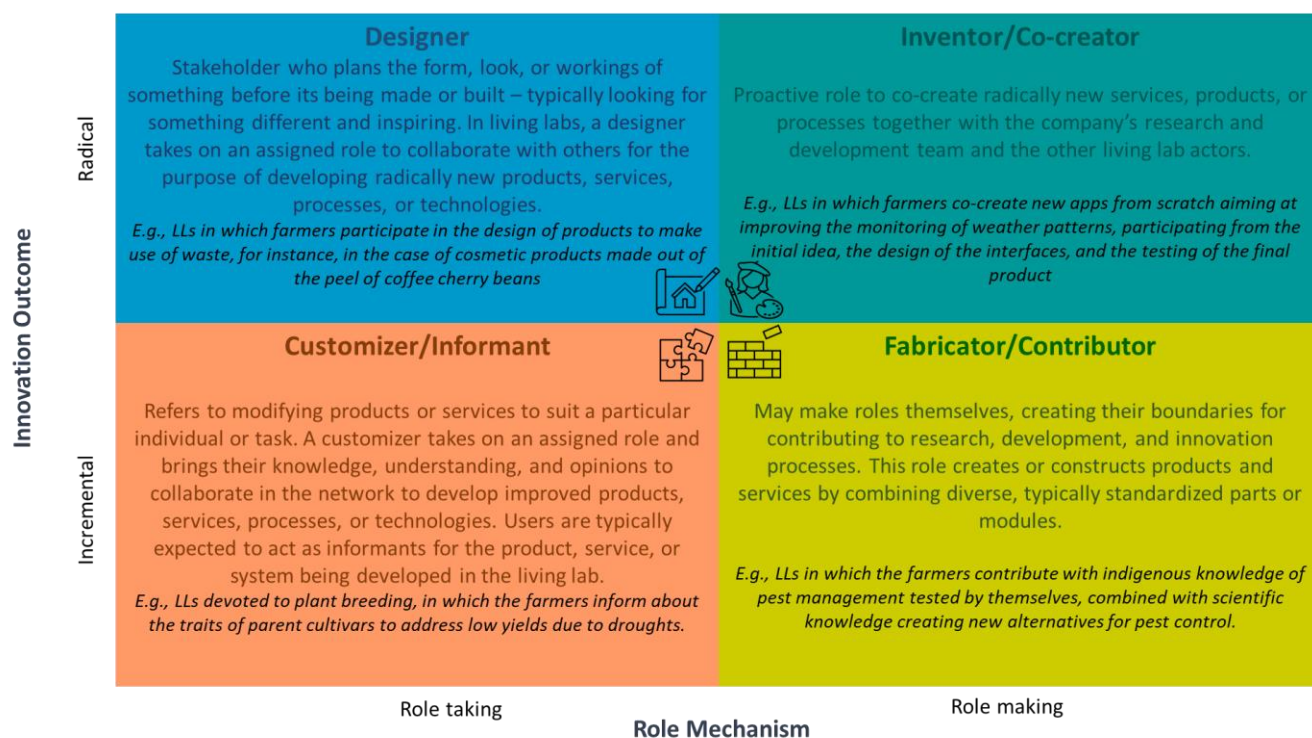


Figure 3. Framework of User Roles

Source: Modification of Leminen et al. (2015, p. 12) and Nyström et al. (2014)

Additionally, Nyström et al. (2014) identify the tester role, when users test innovations in real-life environments, but whose involvement in co-creation is null (unlike the fabricator/contributor).

Another relevant consideration is *when* users are involved in innovation and codesign. Concerning customer-centric LLs driven by private companies, Westerlund & Leminen (2011) identify a stepwise process, going from initial producer-driven stages to completely user-driven. In the case of citizen-centric labs, Arnould et al. (2022) consider that user involvement could take place in later stages, as the initial phases are devoted to planning, which includes assessing at what point stakeholders should enter the LL.

Box 7 poses some questions to think about the users in our ALLs.



Box 7. To Reflect

- Following Figure 3, in what role(s) are users engaged in the ALLs?
- Until now, what roles have farmers (the most common users in the case of the AE-I) played in the codesign process?
- How to adjust codesign processes to engage farmers more fully (actively?) in the ALLs (e.g. as fabricators or inventors / co-creators rather than simple Customizer / Informant)?
- If farmers are to be more actively involved, how will this affect the roles played by other stakeholders of the codesign process, including researchers?

c. How to think of users in Living Labs?

Beyond considerations related to the type and timing for user involvement, the diversity of users' identity, livelihoods, life stories, experiences, and interests influence both type of innovations to

codesign as well as the probability they will eventually be adopted and used (Arnould et al., 2021). This requires spelling out the diversity of users' profiles or types. Particularly farmers, as they are the final users at least for technical innovations. Farmers may differ in many different dimensions, from the natural, human, or financial resources they have access to, to their objectives, livelihood strategies, informal or formal networks they are part of, and preferences for specific crops or practices, all of which influence their use of any innovation coming out of the co-design process.

The LL approach has expanded beyond integrating users as end recipients of technology to include them as citizens. The citizen-centric LL approach "goes beyond the development of product-service systems and seeks to tackle sustainability challenges with citizens and academia as central actors" (Schliwa and McCormick, 2016: 167). In that sense, it differentiates itself from user-centric approaches by involving people with an interest or a stake in the problem the LL intends to address not just as merely users of innovations.

To assess the meaning, situations, and context of uses is necessary at the initial stages of LLs to better understand the potential uses of an

innovation (Arnould et al., 2022). Here, **meaning of use** is the "meaning that the user brings to the use of the product or service". The **situations** are "the places or moments where the use occurs in a preferential and natural way". The **context of use** refers to "the appropriation of the product or service within a particular community of users". For assessing uses, one must thus reflect on who will use the innovative outcomes of the LLs, when, and where. For this purpose, Arnould et al. (2021) applied the persona method. This method consists of "descriptive models of archetypal users. [These models are] generalizations of the goals, motivations, and behaviors of many individuals". It helps to keep in mind who the final user is and thus to customize the innovations to the expectations and behaviors of real people. The designing of users as personas is a collective work in which stakeholders must be involved, as they know the potential users and thus can provide specific details to make the personas feel real. This method has the advantage of being very dynamic, as the personas created can be modified according to changing situations and new challenges. Box 8 provides some examples.



Box 8. An Example of the Persona Method: Private Forest Users

In the territory of a LL, it would be possible to find different types of users. Let's think of private forest users. For instance, one user may be interested in biodiversity conservation, one interested in the recreational use of its property, and another not interested in his/her property. According to the persona method, we could have different types of users to guide innovations that are adjusted to the real needs and characteristics of the final users.

- The **biodiversity conservator** wants to conserve plant and animal biodiversity on his property. Two cases can define this owner: 1. An active owner who develops appropriate habitats; 2. An owner who does not carry out any intervention on his property and leaves nature to regulate itself.
- The **recreational user** uses their property for forest-related recreational activities such as walking or gathering. These are owners who are generally active on their property to meet their recreational needs. They also often take care of the aesthetic, landscaping, and sanitary aspects of their property.
- The **non-knowledgeable** is an owner who has no knowledge of his property. These owners are referenced in cadastral databases, very often they have inherited a very small parcel but are not aware of their property ownership or forget it over time because it means nothing to them.

Box 9 invites you to reflect on the activities undertaken to identify and characterize the users of the different types of innovations co-created in the ALLs.

Box 9. To Reflect

- What are the different users of the innovations created in the ALLs?
- What are the differences between categories of users (e.g., farmers) in the ALLs? What are their commonalities?
- How may these differences and commonalities affect the co-design, adoption, and scaling of the innovations of the ALLs?

4. Concluding remarks

The categories and roles of stakeholders are defining aspects of LLs as these organizations rely on the agency of specific actors to mobilize innovations and contribute to creating the necessary conditions toward sustainability transitions. However, categories and roles are very dynamic aspects that evolve according to the evolution and trajectories of a LL, as the objectives, mission, and agenda are better determined. This affects the composition of the LL: some stakeholders deemed very important in the beginning may be sidelined, whereas stakeholders whose participation was considered rather marginal could become key for the LL strategic activities. Besides composition, the activities in the LLs are shaped by the role of stakeholders and their ability to network, inside and outside the LLs.

The agency of stakeholders, however, must be analyzed in the light of power relations as stakeholders can activate different strategies and resources toward achieving the goals of LLs; simultaneously LLs can reinforce power structures and thus inequities among stakeholders. To think critically about stakeholders and the roles they could fulfill implies reflecting on their agency, their social and political capitals, and ultimately, the power they can exert in shaping sustainability transitions.

This is related to the extent to which the stakeholders, particularly users, are engaged in codesigning technical, institutional, or economic innovations, but also in defining and jointly deciding on the roles they are expected or needed to play in the LL. As this is a dynamic process, roles need to be regularly and critically reviewed.

Additionally, the incentives and motivations of stakeholders, a topic barely addressed in the literature, cannot be taken for granted, as being affected by a problem is not necessarily sufficient motivation for a stakeholder to invest time, resources, and capacities in engaging in collective action. Therefore, incentives should be further considered in both research and practical terms, as stakeholders could refrain from participating in LLs as they are not sufficiently motivated or do not see immediate benefits.

Want to know more?

If you wish to delve into specialized literature, these are some basic references:

About Categories of Stakeholders

- Bünger, A., & Schiller, D. (2022). Identification and characterization of potential change agents among agri-food producers: Regime, niche and hybrid actors. *Sustainability Science*, 17(6), 2187–2201. <https://doi.org/10.1007/s11625-022-01184-1>

As the IAE is interested in spurring the process towards agroecological transitions, understanding these categories of stakeholders and how they are connected to different levels is helpful, even from a critical standpoint, to think of the ALLs in complex contexts in which barriers against transitions promoted by regime actors need to be overcome and the necessity to engage both niche and hybrid actors.

About Roles of Stakeholders

- Nyström, A.-G., Leminen, S., Westerlund, M., & Kortelainen, M. (2014). Actor roles and role patterns influencing innovation in living labs. *Industrial Marketing Management*, 43(3), 483–495.

<https://doi.org/10.1016/j.indmarman.2013.12.016>

- Klerkx, L., & Aarts, N. (2013). The interaction of multiple champions in orchestrating innovation networks: Conflicts and complementarities. *Technovation*, 33(6-7), 193-210. <https://doi.org/10.1016/j.technovation.2013.03.002>

These papers provide full typologies of champions in the context of innovation platforms.

About Users

- Leminen, S., Nyström, A.-G., & Westerlund, M. (2015). A typology of creative consumers in living labs. *Journal of Engineering and Technology Management*, 37, 6-20. <https://doi.org/10.1016/j.jengtecman.2015.08.008>

Even though this paper is based on consumer LLs, it is useful to stimulate reflection on how users are engaged in the ALLs and how the character of this engagement connects to innovation outcomes, as this affects the quality of the innovation and its potential adoption.

Methodological Appendix

Following the creation of a library containing more than 450 resources on Living Labs (LLs), Innovation Platforms, and Multistakeholder Platforms related mainly to agriculture and rural development, thematic reading notes focus on reviewing a subset of references (at least 20). In this note, we use the generic LL label to refer to literature on LLs, innovation, and multistakeholder platforms to facilitate the reading. For the protocol and methods applied to develop the Notes please refer to the document "Protocol of the Literature Review on LLs, Innovation Platforms, and Multi-stakeholder Platforms and Searching Strategies" available in the Zotero Library created by WP1 Global Team. The main method for analyzing the information was content analysis based on a set of variables resulting from questions elaborated by the WP1 Global Team and specified in the Protocol.

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