Working Document

Integrating agroecological principles into rapid value chain analysis:

An operational guideline

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One of AE-I's WP3 tasks is to identify the potential for co-developing/upgrading business models (and the value chains (VCs) they are part of) through the integration of HLPE's agroecological principles. In order to do so, one has to first analyze the selected VCs and diagnose their current agroecological status, which constitutes the main objectives of this Rapid Agroecological Value Chain Analysis (RAVCA) guideline.

The CGIAR initiative Transformational Agroecology across Food, Land and Water Systems develops and scales agroecological innovations with small-scale farmers and other food system actors in seven low- and middle-income countries. It is one of 32 initiatives of CGIAR, a global research partnership for a food-secure future, dedicated to transforming food, land, and water systems in a climate crisis.
www.cgiar.org/initiative/31-transformational-agroecology-across-food-land-and-water-systems/

Background

The Agroecology Initiative (AE-I) follows the High-Level Panel of Experts' (HLPE)'s (2019) definition of agroecology, which in essence holds that it is a dynamic concept encompassing a scientific discipline, an array of sustainable agricultural practices and a social movement.

The HLPE (2019) recommends thirteen principles for the agroecological transition of food systems involving technological and institutional innovations that go beyond the farm scale (see Table 1, and Figure 1 and Figure 2 below). AE-I's third work package (WP3 – "Inclusive business models and financing strategies"), constitutes one of AE-I's two adaptive scaling strategies, i.e., along with WP4 – "Strengthening the policy- and institutional-enabling environment". One of AE-I's WP3 tasks is to identify the potential for co-developing/upgrading business models (and the value chains (VCs) they are part of) through the integration of HLPE's agroecological principles. In order to do so, one has to first analyze the selected VCs and diagnose their current agroecological status, which constitutes the main objectives of this Rapid Agroecological Value Chain Analysis (RAVCA) guideline.

Figure 1: Thirteen principles of Agroecology (HLPE 2019). Source: Biovision

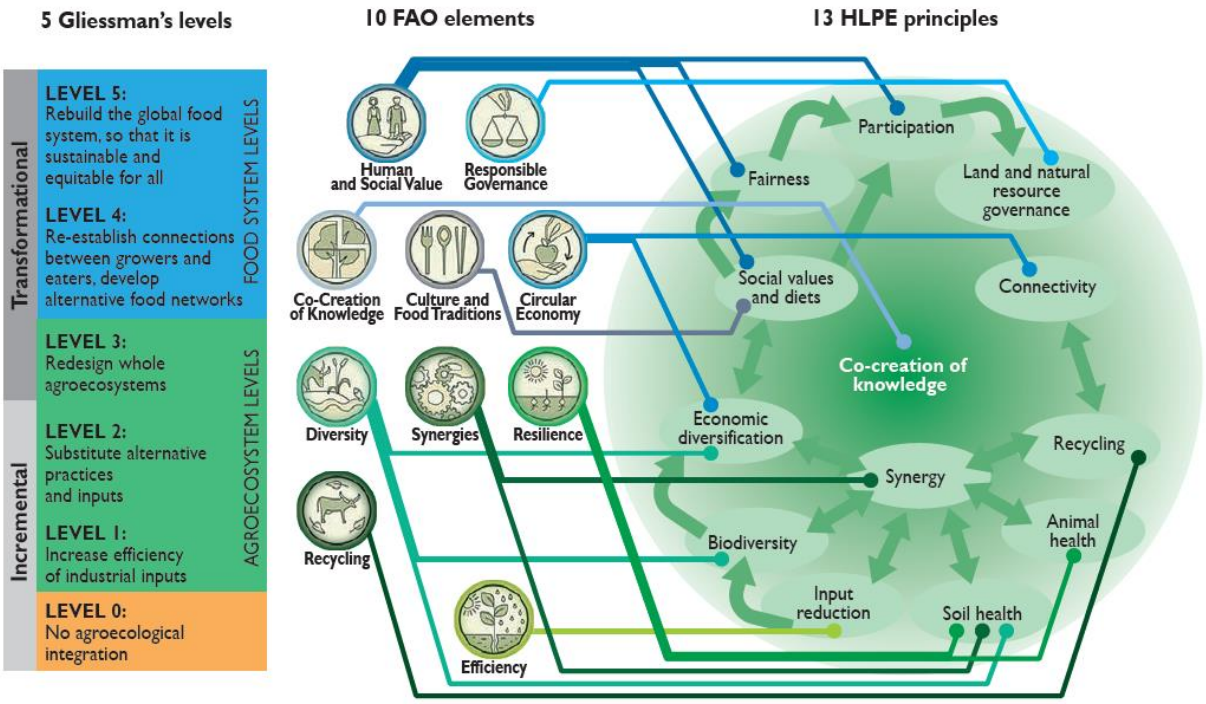

Figure 2: Linking FAO's 10 elements, Gliesmann's 5 levels of food system transformation and the 13 HLPE principles (Atta-Krah et al., 2021)

An Agroecological VC is an environmentally, socially, and economically sustainable VC that incorporates agroecological principles at the farm, business, and institutional levels to foster the transformation of the whole food system, by:

- including and promoting the participation of all relevant stakeholders in the co-creation of a common VC vision.
- strengthening stakeholder engagement and agency, empowering vulnerable and marginalized groups, and addressing power inequalities.
- supporting diversified, nutrition-sensitive and resilient production systems, including mixed livestock and agroforestry, which preserve and enhance biodiversity, as well as the natural resource base.
- promoting diversified and healthy diets as a pathway to support transitions towards more sustainable, diversified and resilient food systems.
- adopting agroecological innovations (both technological and institutional) that foster co-creation and co-learning through the integration of science and local knowledge.
- creating strategic partnerships with food VC innovation platforms, incubators and aggregation mechanisms in which private and public sector actors invest in and reward sustainable food producers and the production of public goods.
- supporting the development of local and regional markets, processing hubs and transportation infrastructures to increase employment and business opportunities, and to promote circular economies.

Rapid Agroecological value chain analysis (RAVCA)

RAVCA entails mapping and assessing all relevant VC actors, (i.e., farms, firms) and their successive coordinated value-adding activities that produce raw agricultural materials and transform them into particular food products, which are sold to final consumers who dispose of remaining waste after consumption. The map, diagnosis, common vision and agroecological upgrading strategy resulting from the RAVCA should help the relevant stakeholders developing a VC that is profitable throughout, has broad-based benefits for society, improves agroecosystems, biodiversity and ecosystem services, and does not permanently deplete natural resources.

This document provides guidelines on how to integrate agroecological principles into the rapid VC analysis (VCA) process, while also applying an agroecological lens to the VC assessment and diagnosis. Participation and fairness should, for instance, be reflected in the inclusion of all relevant stakeholders of the selected VCs and in the empowerment of disadvantaged members of society among each of the VC actor groups.

Traditional VCA is a participatory assessment approach that, as a general rule, includes actors from all stages of the VC. The VC approach has the potential to foster the empowerment of small-scale producers and disadvantaged groups, for instance, by visualizing their existence and linkages in VC maps. Thereby, VC maps can provide a base for the discussion among all relevant VC actors who are further encouraged to co-develop a common vision for the coherent development/upgrading of the VC through strategic improvements in their corresponding business models as well as in the business enabling environment. Nevertheless, to safeguard inclusion and the agroecological principles of participation and fairness, we recommend from the onset, to follow the engagement principles developed by AE-I's WP1.

Principle	FAO's ten elements	Scale application*
Improve resource efficiency		
1. Recycling. Preferentially use local renewable resources and close as far as possible resource cycles of nutrients and biomass.	Recycling	FI, FA
2. Input reduction. Reduce or eliminate dependency on purchased inputs and increase self-sufficiency	Efficiency	FA, FO
Strengthen resilience		
3. Soil health. Secure and enhance soil health and functioning for improved plant growth, particularly by managing organic matter and enhancing soil biological activity.		FI
4. Animal health. Ensure animal health and welfare.		FI, FA
5. Biodiversity. Maintain and enhance diversity of species, functional diversity and genetic resources and thereby maintain overall agroecosystem biodiversity in time and space at field, farm and landscape scales.	Part of diversity	FI, FA
6. Synergy. Enhance positive ecological interaction, synergy, integration and complementarity among the elements of agroecosystems (animals, crops, trees, soil and water).	Synergy	FI, FA
7. Economic diversification. Diversify on-farm incomes by ensuring that small-scale farmers have greater financial independence and value addition opportunities while enabling them to respond to demand from consumers.	Part of diversity	FA, FO
Secure social equity/responsibility		
8.Co-creation of knowledge. Enhance co-creation and horizontal sharing of knowledge including local and scientific innovation, especially through farmer-to-farmer exchange.	Co-creation and sharing of knowledge	FA, FO
9. Social values and diets. Build food systems based on the culture, identity, tradition, social and gender equity of local communities that provide healthy, diversified, seasonally and culturally appropriate diets.	Parts of human and social values and culture and food traditions	FA, FO
10. Fairness. Support dignified and robust livelihoods for all actors engaged in food systems, especially small-scale food producers, based on fair trade, fair employment and fair treatment of intellectual property rights.		FA, FO
11. Connectivity. Ensure proximity and confidence between producers and consumers through promotion of fair and short distribution networks and by re-embedding food systems into local economies.	Circular and solidarity economy	FA
12. Land and natural resource governance. Strengthen institutional arrangements to improve, including the recognition and support of family farmers, smallholders and peasant food producers as sustainable managers of natural and genetic resources.	Responsible governance	FA, FO
13. Participation. Encourage social organization and greater participation in decision-making by food producers and consumers to support decentralized governance and local adaptive management of agricultural and food systems.		FO

*Scale application: FI = field; FA = farm, agroecosystem; FO = food system
Source: derived from from Nicholls *et al.*, 2016; CIDSE, 2018; FAO, 2018c.

Table 1: HLPE consolidated set of 13 agroecological principles (HLPE, 2019)

The RAVCA framework presented in this document has been tailored to contribute to achieving AE-I's WP3 main outcome, namely "Investors, trading partners, NGOs, and farmer organizations participate in **at least one strategic business partnership established in each Agroecological Living Lab** (at the end of the first three years) **that leads to the co-development or adaptation of business models linking agroecological innovations to markets**". It has been further designed to respond to two of the Initiative's specific objectives, which are *a)* to determine the extent to which agroecological principles are currently being incorporated along the VC (i.e., an agroecological VC assessment), and *b)* to assess the scaling potential of agroecological innovations currently in place in the VCs.

A VC encompasses all business operations related to a particular product, including the provision of inputs and services throughout the value adding process, i.e., from primary production (i.e., of the selected/prioritized agricultural products), through transformation and marketing, until the sale to the final consumer, (cf. definition at the end of this document)[1].

Multiple tools are available for conducting in-depth VCA, and this guide does not attempt at reproducing nor replacing any of them with this guide. Instead, the goal of this guide is to integrate an agroecological lens into a rapid VCA framework, while limiting its scope to the achievement of the Initiative's outcomes in the expected timeframes. For this purpose, we have adapted and simplified elements from various well established VCA guides, mainly: Participatory Market Chain Analysis for Smallholder Producers (Lundy et al., 2007), ValueLinks (Springer Heinze, 2018), Making Value Chains Work Better for the Poor (M4P, 2008), Developing Sustainable Food Value Chains – Guiding Principles (FAO 2014), and MarketLinks (USAID, n.d.), which we suggest using as complementary references. It is important to note that these guides use different terms for similar concepts. Therefore, we have included in the annex a glossary of the terms employed in this document to avoid ambiguities and facilitate its use by VCA practitioners with different backgrounds.

While all the actors in a VC should be considered when carrying out a VCA, the work from WP3 should focus on the actors and potential partners identified for the establishment of the **Agroecological Living Landscapes (ALLs)**, following AE-I's WP1 Guiding Principles for engaging with national & local stakeholders. This set of actors will be henceforth referred to as **core stakeholders.** Accordingly, the starting point for the analysis should be the predefined group of farmers in a prioritized region along with its current trading partner(s), or an enterprise with operations in the region of interest and with a solid commitment to adopting agroecological principles (i.e., current exporters, processors, local market representatives, institutional market representatives, among others). It is important to mention that the group of core stakeholders will be expanded as additional relevant actor groups for the establishment of ALLs are identified during the RAVCA process.

In view of the above, this document offers a general framework and guidelines for the development of the following three products that together make up the RAVCA:

[1] In contrast to a value chain, a production system, on the other hand, may encompass components of several value chains (i.e., it integrates several agricultural products), such as those of sheep and barley in a mixed crop–livestock farming system.

1) **Rapid Value Chain Analysis (including VC map, characterization, and diagnostic):**

The **VC map** is a graphical depiction of the VC structure that, among others, encompasses the different processes, actor groups and product flows along the VC. VC maps are living documents that can and should be permanently updated to e.g., include newly identified actors or production flows as well as changes in descriptive statistics.

The **VC characterization** presents a detailed description of each VC element by providing quantitative and qualitative information on the number and type of actors in each stage (the generic stages being production, aggregation, processing, commercialization, and consumption), their main characteristics, activities, input and product flows, market demand and prices, the type of business relationships, and value chain governance. It thus complements the VC map, by providing relevant contextual information of each value chain stage.

The **VC diagnostic** provides key intervention points by presenting the results of a participatory assessment of underperformances and opportunities for upgrading based on the inputs from experts and local stakeholders.

2) **VC assessment according to agroecological principles:**

The **VC assessment according to agroecological principles** provides information to describe and assess the activities and elements along the VC that relate to HPLE's (2019) three agroecological operational principles (i.e., not to be confused with HLPE's 13 agroecological principles), namely *i)* improvements in resource efficiency, *ii)* resilience strengthening and *iii)* securing social equity and responsibility, as well as the identification of gaps and opportunities for improvements and scaling.

3) **Stakeholder map:**

This is a document (typically a spreadsheet) with strategic information on the actors currently involved in the VC at the **micro, meso, and macro levels** (see definitions in the glossary). Besides the actors currently involved in the core VC, the stakeholder map should include information on further actors along the VC that may be of interest due to their potential agroecological alignment with the Initiative or that could significantly influence the Initiative (i.e., among others, potential customers, producers, input and service providers and NGOs who are, or have expressed interest in applying agroecological principles in their operations/consumption).

While the following sections separately describe the content of the products, the activities for data collection and analysis are deeply interlinked and many occur simultaneously. Most of the primary data collection will be carried out through semi-structured interviews, focus groups discussions and stakeholder workshops. Therefore, the VCA country teams should plan and prepare the activities and adapt tools in advance to avoid duplication of efforts and respondent fatigue. In the annex, we provide examples and recommendations for the development of tools, which should be adjusted for each specific context. In addition, the country teams should look out for potential collaboration and/or synergies

between work packages. *Such potential for collaboration and synergies is highlighted in italics throughout this document*.

The goal of conducting a rapid VCA implies limiting the exercise to the **core stakeholders** and to the actors directly relevant to both upstream and downstream operations. One must be wary that some of the actors identified during the mapping process will likely be engaged with other actors (e.g., producers and trading partners) beyond the operations that immediately concern the core stakeholders, whose assessment may add unnecessary complexity and require further resource-consuming information. The team may nonetheless be interested in obtaining a broader understanding of the VC in the prioritized geography/food system, or of a particular VC stage, e.g., when presuming inefficiencies that can be turned into opportunities. This is particularly important, as root causes for underperformances and key binding constraints that affect the core stakeholders may emerge from different stages of the value chain and from the meso and macro levels. In such cases, the approach for data collection and analysis will be the same but, as suggested above, may amount to a substantial cost and time increase. What is more, extending the scope of the analysis may also reduce the specificity of the results and their derived recommendations. At any rate, a widening of the RAVCA scope should be justified by a strengthened contribution to attaining AE-I's WP3 main outcome.

Based on the principles of synergy and economic diversification, it is almost certain that some core stakeholders (e.g., group of farmers) are or will be involved in more than one value chain, or that an agroecological upgrading strategy involves incorporating additional crops/products in the prioritized productive systems. It is therefore important to conduct a rapid VCA and agroecological assessment for each VC that is (or will be) commercially relevant for securing the farmers income and food security. Crops and products destined exclusively for self-consumption should thus not be included in this analysis.

VCA results are commonly used as a base for the co-creation of a common VC vision. In turn, this common vision, together with the VCA results, serves as a guide for the co-development of VC and business model upgrading strategies. *Potential synergies from the overall rapid VCA: A common VC vision can be co-created in collaboration with AE-I's WP1, which in its activity plan includes the "application of participatory methods to build collectively a vision of the desired agroecological transition pathway(s) in each ALL".*

2. Rapid value chain analysis - concrete steps and guidelines

2.1 VC mapping

A VC map is a visual representation of the analyzed VC and the foundational element of VCAs. It provides a panoramic view of the VC, by illustrating the different VC stages, identifying the position of the VC actors, visualizing product flows and indicating linkages between VC actors. VC mapping is an iterative process where the design can be subject to updates as more information is found throughout the analysis phase.

To prepare the VC map, a round of consultations with key informants should be carried out, who can share their knowledge on the structure of the VC, product flows, actor types, end markets, governance mechanisms, input and services provision and enabling environment. To this end, semi-structured interviews will be carried out, starting with representatives from the core VC, followed by their key input and service providers, and other sectorial experts if necessary.

With the information obtained through the semi-structured interviews, the following steps can be followed to develop a VC map:

1) **Determine the end products**, distinguishing between characteristics such as fresh, processed, conventional, organic, etc.
2) **Identify end markets**, determining different end market segments, e.g., domestic vs. export market.
3) **Identify the successive VC stages**, starting with production and ending with consumption.
4) **Identify actor types** per VC stage, by strategically categorizing businesses (e.g., organic vs. conventional producers, small vs. large producers, industrial vs. artisanal processors, etc.).
5) **Visualize the product flows**, from production to consumption using arrows.
6) **Identify main channels**, based on the end markets and the different actor types involved at each stage (e.g., the informal vs. the formal channels, the fresh vs. the processed channel, etc.).
7) **Map the indirect actors**, using a separate map that only shows the value chain stages (i.e. not the value chain actors), to include the input and services providers as well as governance institutions that play a key role in each step.

Because value chain mapping is an iterative process, we recommend carrying out the seven steps listed above during the following three phases:

- Using information collected from the **desk research** (e.g., literature review) and current knowledge of the sector, draw an initial draft map, illustrating stages, direct actors, indirect actors, and relationships in the VC. The assessment team should not be excessively concerned about the accuracy and level of detail during this phase.
- After the **fieldwork** phase, update the map using the collected data and insights.

- As a third step, the VC map should be validated with key informants that have a broad overview and knowledge of the value chain. This **validation** can be done either in a multistakeholder workshop or through individual meetings and interviews with key informants.

The *ValueLinks methodology* (Springer Heinze, 2018) proposes a useful set of conventions (see Fig. 2) that can be employed to illustrate the different elements of the VC. In their conventions, VC operators correspond to the direct actors, which in our case would be limited to the individuals and enterprises performing the core functions within the VC of interest (i.e., the core stakeholders). The VC supporters and enablers correspond to the indirect actors in the meso and macro levels, which in our exercise should be limited to those directly affecting the core VC.

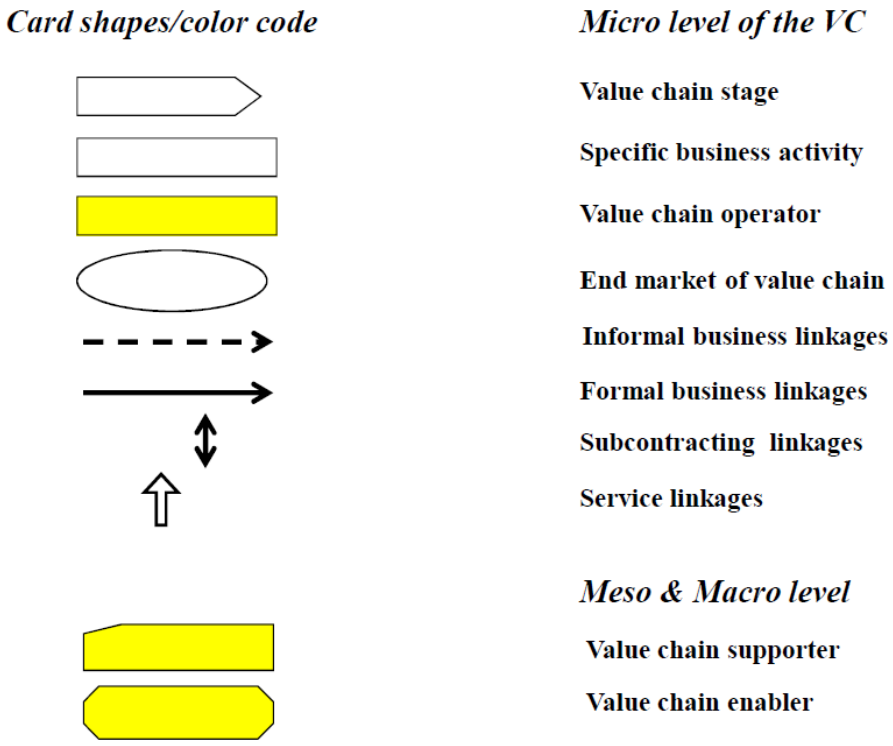

Figure 3: ValueLinks value chain mapping symbols (Springer-Heinze, 2018)

The map can use various types of arrows to display relevant differences in business linkages (i.e., primary vs. secondary channels, formal vs. informal business linkages, commodities vs processed products, etc.).

Example of a VC map

The VC map should depict the end-market (and different market channels if applicable), VC stages (the generic stages being production, aggregation, processing, commercialization, and consumption; depicted in Figure 3 as white arrows), actors, and business linkages. The end-markets (depicted as white circles at the top of Figure 3) subdivide the VC into different sequences of business operations (i.e., sub-VCs or

market channels), highlighting the different supply flows and their corresponding actor types involved in each channel. In the case of production systems with multiple products, we recommend drawing a map for each VC as many of the actors and channels will differ.

The example shown in Figure 3 depicts a maize VC map, with a first channel conducting to a domestic food market, a second channel to an intra-regional export market, the third channel to the domestic flour market, and a fourth channel to the animal feed market. It is important to note that in our case, the VC map will be a more simplified version, as the channels will only be differentiated according to the end markets reached by the products of our core stakeholders.

Key input providers (such as seeds) may be mapped at the micro level (as shown in Figure 3), together with the core stakeholders, but we recommend mapping all input and service providers as actors representing common interests of the VC at the meso level. The VC map usually depicts meso level actors (coded as yellow rectangles with the upper left corner cut off) and macro level actors (coded as yellow octagonal rectangles) placed adjacent to the relevant VC stages they serve. VC mapping can, but does not necessarily, include the macro level of a VC. Moreover, additional relevant information may be included in the map, such as the number of actors, traded volumes and traded values per end-market as shown in Figure 3.

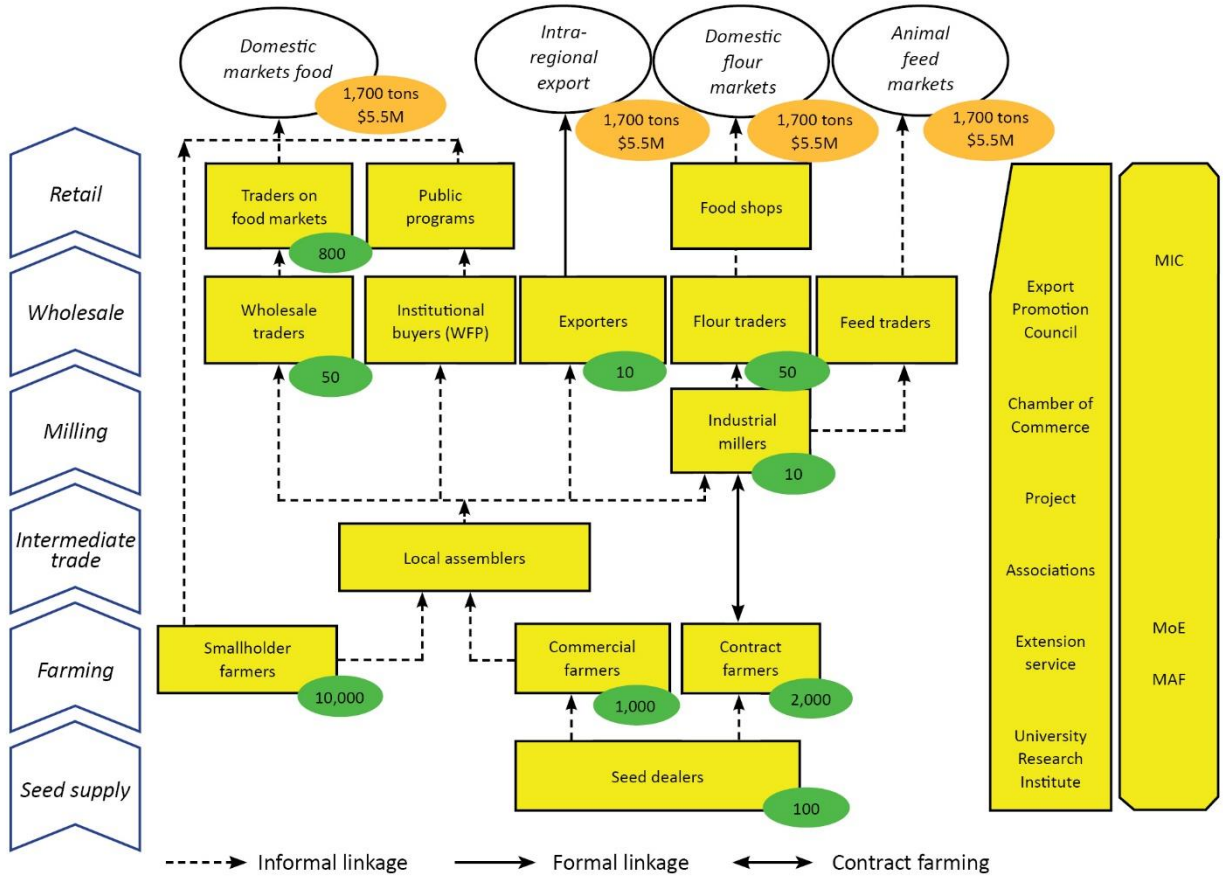

Figure 4. Example of a maize VC map displaying, among others, VC stages (leftmost), core VC actors (i.e., micro level; yellow rectangles), support actors (i.e., meso level; yellow rectangle with upper left corner cut off) and enabling environment actors (i.e., macro level: ministries of industry and commerce, of the environment and of agriculture and forestry; yellow octagonal rectangle) (Springer-Heinze, 2018)

Potential synergies: The information gathered during the VC mapping and corresponding characterization exercises can include indicators that serve as a baseline for monitoring agroecological transitions. This can complement the baseline (i.e., current conditions of agricultural systems of smallholder farmers in each ALL) contemplated in AE-I's WP2 activity plan. The WP3's VCA mapping and corresponding characterization include WP2's (predefined) metrics. What is more, AE-I's WP4 activity plan foresees mapping key policy stakeholders and key food system actors in each of the ALLs, which could complement the VC map and thus be carried out in collaboration with WP3.

2.2. VC Characterization and diagnostic

The objectives of the VC characterization and diagnostic are *a)* to obtain a deeper understanding of each element of the VC, *b)* to identify underperformances and key binding constraints, and *c)* to identify upgrading opportunities at the micro, meso and macro levels.

Note: Given that we are interested in the **core stakeholders**, it is likely that most of the information will be obtained from interviews and workshops. Nevertheless, it is important to include secondary information and regional / local statistics, when available, on area, production, prices, practices, weather, and traded volumes, as they will allow triangulation by comparing the data with the information collected from the core stakeholders. In the annex we provide a set of recommended questions for each type of actor to guide the VC characterization and diagnostic.

As a first step of the process, the team should conduct an **end-market analysis**, which provides a rough understanding of the existing and potential end-markets, and should broadly cover the following items: market sizes and growth rates (i.e., a 5-10 year trends analysis), (import and export) trade flows, prices and price trends, market drivers (including demographic changes), market segments (price, quality, niche), order specifications (including standards, volumes, payment mechanism), critical success factors (CSFs), unique selling propositions (USPs) for the domestic and competing products (competitive benchmarking), and consumer perceptions and behavior.

The characterization and diagnostic of the rest of the VC should be guided by the VC structure, including a description of the main characteristics, key challenges, risks and opportunities for the following VC elements:

- At the **micro level**, for each relevant **core stakeholder** along the different VC stages.
- At the **meso level**, focusing on the provision of inputs and services with highest strategic importance for the VC core stakeholders and for the agroecological transition.
- At the **macro level**, identifying actors and characteristics of the enabling environment that critically affect the VC performance, distinguishing between natural elements (climate, soils, water quantity and quality, biodiversity, etc.) and societal elements (including infrastructure, institutions, organizations, and socio-cultural norms).

For the diagnostic, specific questions will be included in the semi-structured interviews and workshops to identify challenges, risks, and opportunities for improvement. Challenges and risks are identified by asking “why” questions, following up on replies such as “things are not functioning well” that may be mentioned during the semi-structured interviews (i.e., to understand the root causes of key binding constraints). These questions may, for instance, be directed at understanding: why production is low; why there are limited capacities for maintenance despite trainings; why access to spare parts remains a constraint and equipment endowment; why local small-scale producers have no land titles, etc.

3. Suggested table of contents and structure of the VCA

In the following, guidance is provided with regards to the sections and content of the VCA. However, because this guide presents a rapid appraisal approach, it is important to stress that not all listed items need to be covered, while it is important to **focus on the challenges and risks**.

Discussing the different topics listed below during key informant interviews, one is likely to quickly find out which of them are critical for a more sustainable functioning of the VC and should, therefore, consequently be studied in more detail. On this account, one should follow the rough structure presented below but also adapt the focus to the specific characteristics of the VC and the needs of the local team.

3.1 Context

3.1.1 Description of the products and agroecological production system

General description of the production system based on the three AE operational principles (i.e., *i)* improving resource efficiency; *ii)* strengthening resilience; and *iii)* securing social equity/responsibility), as well as the product characteristics of all derived products.

3.1.2 Regional Context

General description of the region and/or area of interest, with relevant social, economic, and environmental indicators (main economic activities, relevant agricultural products, area, production, prices, and yields of relevant crop/products, poverty indexes, land distribution, education level, yearly temperature, and precipitation). It should include maps displaying the locations of the productive areas and major markets for each product of interest. Any existing special markets for the agroecologically produced, traded or processed products should be highlighted. Highly relevant contextual information such as the presence of ethnic/religious minorities, land use conflicts, armed groups, political instability, among others, should be mentioned.

3.2 Value chain 1 (e.g., barley)

3.2.1 Historical context of value chain 1

This section should briefly describe how the crop entered the region, key moments in recent history related to the expansion of the crop and relevant social dynamics.

3.2.2 Value chain map

The VC map with a brief description of the depicted VC stages, actor types and product flows should be presented in this chapter.

3.2.3 End market analysis

A short analysis of the main end market opportunities and market dynamics should be presented here.

3.2.4 Characterization and diagnostic per VC segment and level

This characterization should include a diagnosis and recommendations regarding the identified challenges, risks and upgrading opportunities for an agroecological transition at the product/crop level (i.e., following the instructions for an agroecological assessment provided in Section 4).

Micro level (core VC): includes all relevant information organized per VC stage. Below we suggest a list of generic stages which should be adapted and described taking into account production, processing, procurement and marketing practices, infrastructure and equipment used, competitiveness, general business skills, and main challenges, risks and opportunities.

- *Production*: The different identified actor types should be described in terms of number of producers, socio-economic characteristics, volume of production, farm gate prices, productive practices, seasonality, business arrangements. A description of gender roles, governance and participation mechanisms should be included. A diagnostic of challenges, risks and upgrading opportunities should follow.
- *Aggregation*: This section should describe the different types of aggregators, agents, practices (i.e., purchasing, product handling, grading and sorting, transport & cold chain logistics), factors affecting quality and losses, compliance with handling standards. A diagnostic of challenges, risks and upgrading opportunities should be included.
- *Processing*: The different identified actor types should be described in terms of number of processors, trade volume, product specification, buying and selling prices (inputs and outputs) and type of business arrangements. A description of gender roles, governance and participation mechanisms should be included. This segment may include various stages of formal and informal processors and distributors as part of the core stakeholders VC. A diagnostic of challenges, risks and upgrading opportunities should be included.
- *Commercialization*: the identified formal and/or informal aggregators should be described in terms of number of traders, trade volume, product specification, buying and selling prices, and type of business arrangements. A description of gender roles, governance and participation mechanisms should be included. This VC segment may include various levels and type of actors such as fresh markets, institutional markets, and wholesalers or retailers of fresh or minimally processed products if part of the core stakeholders VC. A diagnostic of challenges, risks and upgrading opportunities should be included.
- *Final consumer* (from fresh and/or processed products): describes the different identified consumer groups, together with information on estimated market size, locations, characteristics, purchasing prices, and product preferences.

Meso level (actors providing inputs and/or regular support services or representing the common interest of the VC):

- Input providers (e.g., seeds, fertilizers, packaging material, etc.): the type of inputs, regulations, availability and access, quality and prices should be briefly described. A diagnostic of challenges, risks and upgrading opportunities should be included
- Operational service providers: this section focuses on transport and logistics service providers and should describe the service, regulations, availability and access, quality and prices. A diagnostic of challenges, risks and upgrading opportunities should be included
- Support service providers, mainly:
  - Financial services providers: describes financial products offered, access by VC actors, products adapted to the needs of the VC, informal financial services providers. A diagnostic of challenges, risks and upgrading opportunities should be included.
  - Technical assistance and training: describes the type and quality of services offered, financing schemes (public, private, NGO), costs and prices, scope. A diagnostic of challenges, risks and upgrading opportunities should be included
- Other key support service providers: Highlight services that are important to the different VC actors (e.g., quality control, soil analysis, etc.), briefly describe services providers, describe availability, costs and quality. A diagnostic of challenges, risks and upgrading opportunities should be included

Macro level: This section should only include highly relevant information, as a more thorough analysis of the enabling and policy environment falls under the scope of AE-I's WP4 – "Strengthening the policy- and institutional-enabling environment".

- Societal enabling environment:
  - Policies, regulatory bodies and other institutions: what are the main challenges/opportunities regarding laws, regulations, norms and standards, support programs, etc.? Which elements are obstructing the functioning of the VC (e.g., ensured access to land)? Which elements are missing? Are regulations, etc. effectively enforced? Are policies aligned or in conflict?
  - Socio-cultural elements: what are main challenges/opportunities regarding religion, presence of ethnic minorities, conflicts and levels of crime, gender and youth norms, entrepreneurial spirit (openness to innovation), dietary habits, etc.
  - Infrastructure: what are the main challenges/opportunities regarding roads, public markets, railroads, water supply, wastewater management, ICT networks, electricity supply, etc.?
  - Organizations and projects: identify and describe relevant organizations (e.g., ministries, public agencies, R&D centers, universities, industry and trade associations, etc.) and projects that impact or could impact the VC and describe how.

VC governance

- In addition to the characterization and diagnostic per VC segment and level, a rapid governance analysis is also critical, as governance mechanisms oftentimes explain actors´ behavior. A governance analysis should cover the following types of linkages: Horizontal linkages: describe the nature and dynamic of formal and informal relationships, levels of coordination and information exchange,

levels of competition, collective action and economies of scale, roles of associations, cooperatives, levels of trust, corruption, etc.

- Vertical linkages: describe the nature and dynamic of formal and informal relationships (e.g., in the channels identified in the VC map), which actors have the power to influence price setting, nature of the dominant transaction arrangements, nature of market/transaction structure (competitive market, oligopoly, monopoly), dependencies and power imbalances, asymmetries in knowledge and information, political power, level of trust, corruption, etc.

Follow steps outlined in example above for other value chains

3.2 Agroecological diagnosis at the wider food system level

This chapter should cover the potential challenges and opportunities that an agroecological upgrading of the analyzed VCs could signify at the food system level. At the field scale for instance, if applicable, the report should mention how integrating various products (i.e., VCs) in a mixed crop-livestock system may generate synergies (and/or trade-offs), the necessary conditions for such synergies to take place, etc. Applying the holistic agroecological lens, the challenges, and opportunities of integrating HLPE's thirteen agroecological principles at the food system level, through the analyzed VCs, should be discussed.

3.3 Concluding remarks and final recommendations

The key challenges, risks, and opportunities of the RAVCA should be briefly discussed and summarized and next steps should be presented.

4. Agroecological assessment

This assessment should be made at the product (i.e., VC) level, including the information on the actors, products and practices that align with agroecological principles in each VC stage (e.g., production, aggregation, processing and commercialization) and level (i.e., micro, meso and macro), as well as the strengths, weaknesses, opportunities and threats (SWOT) identified at the food system level of furthering the agroecological transition, followed with a general discussion and recommendations.

The agroecological assessment should be included in the different sections of the VC characterization and diagnostic (i.e., within the description of each VC stage and level). Potential challenges and opportunities associated with an agroecological upgrading should be summarized in chapter 3.4. of the RAVCA report.

In the annex we provide a set of recommended questions and guiding topics for each type of actor that may help with the agroecological assessment.

The agroecological assessment should also include questions regarding potential challenges and opportunities, and existing strategies/mechanisms for scaling up.

5. Stakeholder mapping

A stakeholder map is usually developed along with the VC mapping exercise, and thus, the identification of stakeholders and the characterization of actor categories can be considered a VCA by-product. This by-product will populate the stakeholder map that will be led by AE-I's WP1, which will also be complemented by the political actors and institutions identified by WP4.

Actors of potential agroecological relevance that are currently not involved in the core stakeholders VC can be identified through a combination of desk research and snowball sampling (i.e., requesting references and contact information to the interviewed actors). During this exercise, one should also consider identifying different types of actors along the VC, such as input suppliers, operational service providers and support service providers[2] with agroecological potential.

For ease of access and use, the information collected can be systematized in a spreadsheet file (e.g., MS Excel). While the information may vary according to each ALL's objective, the file should at least include names and descriptions of the mapped actors (including core activities, services, and role in the VC), interest in the Initiative and power to influence the Initiative, location and contact information. The stakeholder map may also include further information regarding the identified actors, among others, their alignment with the Initiative and with national/regional objectives, their strengths and weaknesses, potential synergies with other efforts, and conflicts of interests.

Potential synergies: A stakeholder map is usually developed along with the VC mapping exercise, yet the former has been included among AE-I's WP1 activities. It thus offers an opportunity for collaboration and synergies between WP3, WP4 and WP1.

6. Participatory validation and wrapping up

Once the information has been analyzed and systematized, a workshop should be conducted with all relevant stakeholders. The workshop will provide a space to present, discuss and validate findings and fill information gaps. Based on the VCA and AE assessment, a SWOT analysis should be conducted with all stakeholders, considering the AE principles and VC stages in each of the quadrants (i.e., strengths, weaknesses, opportunities, and threats). Specialized facilitation is key in this activity as it will be the facilitators' role to bring up and streamline the AE principles in the discussions in order to prevent the conversation from deviating or overemphasizing e.g., commercial aspects.

The results of the SWOT analysis will be used in later workshops and WP3 activities to determine courses of action that may be prioritized by VC actors according to their roles and capacities (i.e., VC upgrading strategy). In particular, the results of this process will be key inputs for the participatory assessment and codesign/upgrading of the AE business model.

The role of an AE facilitator is to promote participation and inclusiveness in the discussions as the AE principles are mainstreamed in every step of the process. As reflecting on these discussions requires time

[2] More information on the type of actors can be found in the annex.

and the conclusions drawn will have important implications on the core stakeholders' businesses and livelihoods, we recommend dividing the different validation and participatory planning activities in various sessions, giving enough time in between for the actors to ponder, discuss and validate the shared results.

7. Annexes

7.1 Glossary of VCA terms

Direct actors are those directly involved in productive processes, postharvest handling, processing and commercialization. These actors take direct possession of and are owners of the product in one or more links in the chain, therefore running direct risks linked to the product (Gottret, 2011). These actors are also called **Micro Level Actors** (Springer-Heinze, 2018).

Indirect actors are those who offer operational services and/or support services to the direct actors at various points in the chain. Even though the product may well pass through their hands at some link in the chain, they do not assume possession of it at any time. They are therefore also facing indirect risks regarding the product. Indirect actors include suppliers, operational service providers, support service providers and regulatory bodies (Gottret, 2011). The indirect actors that provide inputs, operational and support services to direct actors are also called Meso Level Actors, whereas regulatory bodies are categorized as **Macro Level Actors** in the ValueLinks guide (Springer-Heinze, 2018).

Macro level, encompasses the enabling environment, distinguishing between natural elements (i.e., climate, soils, water quantity and quality, biodiversity, etc.) and societal elements, including infrastructure, socio-cultural norms, and institutions and organizations (i.e., financial system, insurance companies, and relevant government institutions that together with the judiciary and, among others, major providers of public utilities, determine policies and regulate the conditions for doing business in a country or region). Only some of these institutions are particular to a specific value chain.

Governance: is the setting, monitoring, and enforcing of norms and rules with which the stakeholders in a collectivity manage their common affairs. The collectivity can be a value chain (thus value chain governance) or a local, national or global community of people interested in resolving a common problem or promoting a common goal. Basic types of governance include markets, networks, and hierarchies (Springer-Heinze, 2018).

A **value chain stage** constitutes a categorical instrument that allows to group direct actors with similar characteristics, to facilitate its visualization in the value chain and subsequent analyses. While these stages are specific for each value chain, there are some generic stages common to most agricultural value chains that can be used as reference and adapted as required:

1. Primary production: Includes producers of the VC commodity, which may be further categorized by size of the enterprise, technification, marketing channel, etc.
2. Intermediary trade: Includes formal and informal actors whose main activity is aggregating and traders the VC commodity, (i.e., intermediaries, traders).
3. Processing: Includes formal and informal actors involved in the processing of the agricultural commodity. May involve first or further transformations into higher added value products.

4. Exporters: Includes primarily the exporters of the agricultural commodity in its raw state or with low value addition. In the case of exporters of processed products, these actors may be better located in the processing stage.
5. Wholesalers and Retailers: Actors who trade the commodity or value-added product directly or almost directly with the final consumer.

The differentiation of stages depends on the actor's characteristics and their business operations; it may be the case that the producers in a particular VC trade directly with processors and wholesalers, making it irrelevant to include the stage of intermediary trade. The differentiation of stages should only be displayed when they correspond to business operations specific to a relevant group of existing value chain actors

Finally, as mentioned before, indirect actors may be grouped into four: suppliers, operational service providers, support service providers and regulatory bodies. We suggest that the assessment team considers the following indirect actors in the analysis:

1. Input suppliers: Includes suppliers of relevant agricultural inputs, machinery, seeds, propagation material, etc.
2. Operational service: Includes transport and logistic service provider
3. Support service providers: Financial and insurance services, rural extension, technical assistance and training, agricultural research, setting of professional standards, provision of information, trade fairs and export marketing, quality control, political advocacy, representation of common interest of a set of actors.
4. Regulatory bodies: Phytosanitary and zoo sanitary control, environmental agencies, agricultural agencies, trade agencies.

7.2 Guiding questions for rapid VCA

Semi-structured Interview guide

The following guide contains a list of leading questions and topics for inquiry to explore with key informants for the purpose of conducting a rapid VCA, with specific questions and themes for the different stages and levels of the value chain

The themes are divided in different modules as follows:

1. General information of the actor
2. Value chain characterization
3. Value chain diagnostic

Value chain actors

Producers (Farmers organization representative)
Intermediaries
Processors
Exporters / Traders
Domestic wholesalers and retailers
Input suppliers
Financial institutions
Farming organizations
Transporters - logistic operators
Technical specialists - sector experts
Government officials, Sector representatives, Crop boards, State Enterprises, Ministry of Agriculture, Development agencies

Farmers' representatives

Code	Description
1	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of associates
1.06	# of women in the organization
1.07	# of planted hectares (per relevant product)
1.08	# of productive hectares (per relevant product)
1.09	average yield (per relevant product)
1.10	total production from associates (per relevant product)
1.11	production traded by the association (per relevant product, if applies)

2	**Value chain characterization**
2.01	Description of the organization and activities (aggregation, selling, representation, services)
2.02	Value proposition, differentiating factors from other similar organizations
2.03	Prominence and position in the value chain (what is their share of the regional production)
2.04	Characteristics of farmer associates (average farm size, share of smallholders, family compositions, age, education level, spatial distribution)
2.05	Seasonality of production and price changes
2.06	Producer prices, how are purchasing and selling prices set.
2.07	Customers (names, contact information, share of total sales, types of products)
2.08	Average annual sales turnover. Share of local sales versus export sales turnover?
2.09	5 years growth
2.10	Margins
2.11	Quality specifications required from market and to producers. Standards
2.12	What are the commercial arrangements with producers and customers (formal, informal, special arrangements)
2.13	Characteristics of service provision (extension, input distribution, financial services)
2.14	Other important farming organizations in the region (competitors)
2.15	What are the incentives for smallholders in producing the commodity? What are the alternatives?
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Major barriers and weaknesses of the associated producers Why?
3.03	Risk and risk mitigation strategies
3.04	Opportunities and future plans

Intermediaries

Code	Description
1	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of employees
1.06	# of women in the organization
2	**Value chain characterization**
2.01	Description of the organization and activities (aggregation, selling, representation, services)
2.02	Value proposition, differentiating factors from other similar organizations

2.03	Prominence and position in the value chain (what is their share of the regional trade)
2.04	Other suppliers (apart from Core stakeholders)
2.05	Buying trends in the last 5 years. How are purchasing patterns different now to when they were before?
2.06	Prices, how are purchasing and selling prices set
2.07	Average annual sales turnover. Share of local sales versus export sales turnover?
2.08	5 years growth
2.09	Margins
2.10	Quality specifications required. Standards
2.11	What are the commercial arrangements with producers and customers (formal, informal, special arrangements)
2.12	Where are the main operations, trading centers and markets located
2.13	Characteristics of service provision (extension, input distribution, financial services)
2.14	Other important intermediaries in the region (competitors)
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Major barriers and weaknesses of suppliers. Why?
3.03	Risk and risk mitigation strategies
3.04	Opportunities and future plans

Processors

Code	Description
1	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of employees
1.06	# of women in the organization
1.07	Type of ownership
2	**Value chain characterization**
2.01	Description of the organization, activities and all products
2.02	Value proposition, differentiating factors from other similar organizations
2.03	Prominence and position in the value chain (what is their share of the regional sourcing, what is their market share)
2.04	Who are the main customers, (end-markets and segments)
2.05	Other suppliers (apart from Core stakeholders) Importance of core stakeholders for their business operations
2.06	Buying trends in the last 5 years. How are purchasing patterns different now to when they were before?

2.07	Average annual sales turnover. Share of local sales versus export sales turnover?
2.08	Prices, how are purchasing and selling prices set
2.09	5 years growth
2.10	Margins
2.11	Quality specifications required. (Standards, volumes, packing, labeling, size, etc)
2.12	What are the commercial arrangements with producers and customers (formal, informal, special arrangements)
2.13	Characteristics of service provision (extension, input distribution, financial services)
2.14	Other important processors in the region (competitors)
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Major barriers and weaknesses of suppliers. Why?
3.03	Risk and risk mitigation strategies
3.04	Opportunities and future plans

Traders - exporters

Code	Description
1	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of employees
1.06	# of women in the organization
1.07	Type of ownership
2	**Value chain characterization**
2.01	Description of the organization, activities and all products
2.02	Value proposition, differentiating factors from other similar organizations
2.03	Prominence and position in the value chain (what is their share of the regional sourcing, what is their market share)
2.04	Who are the main customers, (end-markets and segments)
2.05	Other suppliers (apart from Core stakeholders). Importance of core stakeholders for their business operations
2.06	Buying trends in the last 5 years. How are purchasing patterns different now to when they were before?
2.07	Average annual sales turnover. Share of local sales versus export sales turnover?
2.08	Prices, how are purchasing and selling prices set
2.09	5 years growth
2.10	Margins
2.11	Quality specifications required. (Standards, volumes, packing, labeling, size, etc)

2.12	What are the commercial arrangements with producers and customers (formal, informal, special arrangements)
2.13	Characteristics of service provision (extension, input distribution, financial services)
2.14	Other important traders-exporters in the region (competitors)
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Major barriers and weaknesses of suppliers. Why?
3.03	Risk and risk mitigation strategies
3.04	Opportunities and future plans

Wholesalers-retailers

Code	Description
1.0	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of employees
1.06	# of women in the organization
1.07	Type of ownership
2	**Value chain characterization**
2.01	Description of the organization, activities, and main products
2.02	Value proposition, differentiating factors from other similar organizations
2.03	Prominence and position in the value chain (what is their share of the regional sourcing, what is their market share for the product of interest)
2.04	Who are the main customers, (end-markets and segments)
2.05	Other suppliers (apart from Core stakeholders). Importance of core stakeholders for their business operations
2.06	Buying trends in the last 5 years. How are purchasing patterns different now to when they were before?
2.07	Average annual sales turnover. Share of local sales versus export sales turnover?
2.08	Prices, how are purchasing and selling prices set
2.09	5 years growth
2.10	Margins

2.11	Quality specifications required. (Standards, volumes, packing, labeling, size, etc.)
2.12	What are the commercial arrangements with producers and customers (formal, informal, special arrangements)
2.13	Characteristics of service provision (extension, input distribution, financial services)
2.14	Other important wholesalers-retailers in the region (competitors)
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Major barriers and weaknesses of suppliers. Why?
3.03	Risk and risk mitigation strategies
3.04	Opportunities and future plans

Input supplier

Code	Description
1.0	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of employees
1.06	# of women in the organization
1.07	Type of ownership
2	**Value chain characterization**
2.01	Description of the organization, activities, and main products
2.02	Value proposition, differentiating factors from other similar organizations
2.03	Sales turnover and product prices
2.05	Other customers (apart from Core stakeholders). Importance of core stakeholders for their business operations
2.09	5 years growth
2.10	Margins
2.11	Quality specifications required. (Standards, volumes, packing, labeling, size, etc.)
2.12	What are the commercial arrangements with producers and customers (formal, informal, special arrangements)
2.13	Characteristics of service provision (extension, input distribution, financial services)
2.14	Other important input suppliers in the region (competitors)
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Risk and risk mitigation strategies
3.03	Opportunities and future plans

Financial institutions

Code	Description
1.0	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of employees
1.06	# of women in the organization
2	**Value chain characterization**
2.01	Description of the organization, activities, and main products
2.02	Value proposition, differentiating factors from other similar organizations
2.03	Total credit placement
2.04	Other customers in the region (apart from Core stakeholders). Importance of core stakeholders for their business operations
2.05	5 years growth
2.06	Other important input suppliers in the region (competitors)
2.07	How are credits/insurances distributed (small, medium, large farms)
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Main bottlenecks for access to financial services
3.03	Risk and risk mitigation strategies
3.04	Opportunities and future plans

Transport - Logistic operators

Code	Description
1.0	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of employees
1.06	# of women in the organization
1.07	Transport/storage capacity
2	**Value chain characterization**
2.01	Description of the organization, activities, and main products
2.02	Value proposition, differentiating factors from other similar organizations
2.03	Prominence and position in the value chain (volumes and market share)
2.04	Annual volumes

2.05	Other customers in the region (apart from Core stakeholders). Importance of core stakeholders for their business operations
2.06	5 years growth
2.07	Other important logistic operators in the region (competitors)
2.08	Type of commercial arrangements
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Risk and risk mitigation strategies
3.03	Opportunities and future plans

Extension service provider

Code	Description
1	**General information**
1.01	Contact person and title
1.02	Address and location
1.03	Contact details
1.04	Year established (operating in the region)
1.05	Number of employees
1.06	Number of producers assisted
2	**Value chain characterization**
2.01	Description of the organization and activities
2.02	Prominence and position in the value chain
2.03	How is the service financed
2.04	Regions of influence
2.05	Other important extension service providers
2.06	What is the share of small holder farmers in the production system? What is the spatial distribution?
2.07	What are the incentives for smallholders in producing the commodity? What are the alternatives?
2.08	What are the main bottlenecks for the farmers
2.09	what are the main bottlenecks for the provision of extension services
3	**Value chain diagnostics**
3.01	Major barriers and weaknesses of the organization. Why?
3.02	Risk and risk mitigation strategies
3.03	Opportunities and future plans

Government-sector representatives

Code	Description
1	**General information**
1.1	Contact person and title
1.2	Address and location
1.3	Contact details
2	**Value chain characterization and diagnostic**
2.1	What is the role of the institution in relation with the VC
2.2	What is the importance of the VC in relation to national objectives (employment, foreign exchange, poverty reduction)
2.3	What are the main markets for the VC
2.4	What are the main producing regions
2.5	Who are the main direct actors in the VC
2.6	How is the farm structure (typologies, sizes, distribution of farms per size)
2.7	Who are the main support actors in the VC
2.8	What are the main bottlenecks in the VC
2.9	What are the major opportunities for the VC

7.3 Guiding questions for agroecological assessment

OP1. Improve resource efficiency

1. **Recycling**:

Does your organization engage or promote the recycling of inputs or outputs within the company and with your partners? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results? *Closing resource cycles

Example practices for recycling:

- Compost, manure, cow dung
- Nitrogen fixing cover crop and leguminous green manures, crop sown for mulch
- Recycling domestic, municipal, industrial wastewater, use of desalinated water
- Bioenergy from corn stalk, rice husk, slaughter waste, third generation biofuels, biogas from manure, Organic agricultural waste
- Increase soil carbon stock through reduced or no tillage, deep rooting plants
- Recycling of crop residues for other uses, wood waste recycling for construction

2. Input reduction/replacement:

Does your organization engage or promote the reduction or elimination/replacement of purchased inputs for agricultural production? (Directly or indirectly). If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission and financial results?

Example practices for input reduction/replacement:

- Reduce water consumption. Drip irrigation, improved monitoring, precision agriculture, improved varietals, reduced wastewater
- Reduced application of pesticides and veterinary drugs. Improved monitoring, precision agriculture, improved plant varietal that reduce pesticide use, vaccines that reduce the need for antibiotics
- Reduce synthetic fertilizer application and animal feed. Improved monitoring, precision agriculture
- Reduce energy use Energy-smart farming system relying on windmills, solar or photovoltaic panels, renewable energy-powered vehicles, renewable energy-powered equipment for water supply, distribution and purification, monitoring systems to reduce energy use, improved cooking stoves
- Reduce seed use. Optimal seed spacing
- Reduce waste Timely harvest, improved storage facilities, hermetic bags
- Improve plant variety and animal bred. Plant and animal breeding using conventional, marker-assisted breeding or other breeding methods
- Biological pest management: pest management through biological control methods that import, enhance or conserve pest enemies/antagonists (including predators, parasitoids, pathogens and competitors)
- Cover crops for pest management: planting cover crops specifically for weed control or pest reduction. This category includes cover crops grown primarily for pest management.
- Other pest management: non-chemical pest management practices that treat pest problems rather than preventing their occurrence, or biochemical pesticides that control pests by non-toxic mechanisms (naturally occurring substance). This category excludes biological pest management and crop cover (Use of steam, UV treatments, LED lighting, insect sex pheromone, plant extract that attract insect pests to traps, neem spray, wood ashes)
- Adoption of organic and low-input farming: general organic or low-input systems if not considered in other categories already

OP 2. Strengthen resilience

3. Soil health:

Does your organization engage or promote the management of organic matter and soil biological activity? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

4. **Animal health (if applies):**

Does your organization ensure animal health and welfare? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

Example practices for Soil and animal health

- Cover crops for improved soil conditions: planting cover crops specifically to reduce erosion, run-off, increase soil organic matter, improve soil drainage, soil structure, alleviate soil compaction, improve overall soil condition
- Perennial crops: adoption of perennial plant species in place of annual crops
- Reduced tillage: adoption of conservation tillage or no-till practices. This category includes general or other reduced tillage practices that are not considered in previous categories already.
- Domesticated pollinators: improved pollination through the temporary introduction of domesticated pollinators or introduction of exotic domesticated species
- Improved animal welfare and health: improved livestock health, and further efforts to support livestock well-being (Species-appropriate husbandry, aquaponics)

5. **Biodiversity:**

Does your organization maintain and enhance the diversity of species, functional diversity and/or genetic resources? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

6. **Synergy:**

Does your organization enhance positive ecological interactions and complementary in the agroecosystems? (Animals, crops, trees, soils, and water). If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

7. **Economic diversification:**

Does your organization promote productive and income diversification on farms? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

Example practices for Synergy, Biodiversity and Economic Diversification

- Non-crop plants: incorporating non-crop plants in agroecological systems for ecological functions such as conservation, water quality or pest management. This category does not include integration of trees.
- Agroforestry: diversified farming system integrating crop production and trees
- Rotational/regenerative grazing: improved grazing methods/management to improve soil quality and forage yield
- Integrated crop-livestock systems: diversified farming system including both crops and livestock
- (Use of weeds for food and forage in maize system, Alley cropping with trees, coffee agroforestry, grazing systems based on forage availability and demand, Fish-duck-rice system, silvopasture, Push pull, system of rice intensification)

- Integrated pest management by habitat manipulation: landscape planning (focused on habitat) or habitat management as systemic precondition for biological pest control
- Other landscape planning and synchronized landscape activity leading to improved agricultural ecosystem services: consideration and coordination of activities including land use, land cover or other components) at the landscape level that optimize ecosystem services that benefits agricultural production. Habitat conservation around agricultural lands, landscape-scale management interventions (Reforestation/restauration/ preservation of natural habitats with clear benefits for agricultural production, diversified land-use or alternate flowering at the landscape level to improve pollination services, windbreaks, soil erosion control e.g. using hedgerows, half-moon, terracing, stone bunds, contour bounding, Zaï holes)
- Climate mitigation through redesigned system (increasing carbon stocks, reducing GHG emissions)
- Improving local seed/breed diversity: supporting the development and promotion of local, regional, organic seeds/breeds, including classical breeding
- Integrating locally adapted crops/races: incorporating native or locally/regionally adapted crops and animals
- Two-crop rotation: supporting a simple crop rotation with just two crops or where the number of crops included is unclear, but excluding cases where the second crop is specified to be a cover crop
- Three+ crop rotation: supporting a more complex crop rotation system with at least three crops
- Spatially diversified farms: introducing diversity over space by multi-, poly- or inter-cropping
- Biodiversity: specific attention to protect or enhance functional agro-biodiversity
- Natural pollinators: specific attention to protect or enhance local and natural pollinators (and their habitats)
- Multi-habitat approach: increase land-use diversity or diversity at the landscape scale
- Diversification of diets and consumption: promotion of diversified locally produced healthy diets through a diversified food production system (at the landscape/territorial level), macro-and micronutrients, other bioactive components
- Systemic resilience of agroecosystems to extreme weather events and other disturbances: promotion of the resilience of agroecosystems to specific disturbances (windfall, storm, heavy rain, winter freeze, floods, draught, wildfire), including developing frameworks to assess resilience of food systems and measuring the impact of management on the recovery of one or more ecosystem services in response to that disturbance

OP 3. Secure social equity/responsibility

8. Co-creation of knowledge:

Does your organization enhance co-creation and sharing of knowledge. (Local, scientific innovation, farmer to farmer exchange) If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

Example practices:

- Connecting farmers to share knowledge: engage farmers in co-creation and sharing of knowledge, integrate producer's knowledge and management experience to research (through specific participatory research design), support for farmer-researcher networks
- Promote formal and non-formal "production and food" education: support for farmer-education networks, formal and non-formal education
- Farmer-to-farmer programs, farmer's groups to share experiences, bottom-up models of technology transfer (participatory ICT tools), social media groups, community of practices
- Farmer field schools, climate field schools, participatory research designs, integrate producer's knowledge of agricultural biodiversity and management experience (to research)
- Accessible lessons on farming system for the public, access to extension, sensitization in schools, sensitization program on sustainable consumption
- Farmer-to-farmer programs, farmer's groups to share experiences, bottom-up models of technology transfer (participatory ICT tools), social media groups, community of practices
- Participatory guarantee systems
- Farmer field schools, climate field schools, participatory research designs, integrate producer's knowledge of agricultural biodiversity and management experience (to research)
- Accessible lessons on farming system for the public, access to extension, sensitization in schools, sensitization program on sustainable consumption

9. Social values and diets:

Does your organization contribute to building healthy, diversified and culturally appropriate diets, based on identity, tradition, social and gender equity of local communities? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

Example practices

- Encourage and sensitize for seasonal and regional demand: action supporting a stronger seasonal and regional demand
- Support healthy, diversified and culturally appropriate food traditions and diets: build food systems based on the culture, identity, tradition, social and gender equity of local communities that provide healthy, diversified, seasonally and culturally appropriate diets, support and protect cultural identity and values tied to food systems
- Support the right to adequate and culturally appropriate food: support the ability of people to make decisions about the quality and type of food they hunt, fish, gather, grow and eat
- Education program on sustainable, seasonal, and local consumption, campaign on the benefits of local and seasonal consumption, seasonality chart
- Assessment of cultural values around food system, promotion of local breeds/varieties/products for their specific taste and nutritional value, scheme that protect cultural identity (territorial approach…), subsidies for traditional/cultural performances in food system

10. Fairness

Does your organization support dignified and robust livelihoods for all actors in the food system (trade, employment, intellectual property rights, transparency) If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

- Targeted investments and subsidy programs, access to finance to smallholders, barriers and opportunities to regional value generation, public procurement schemes targeting regional demand
- Living income indicators
- Fair trade certifications
- Distribution of profits or royalties among producers.
- Fair and short distribution networks, embedding food systems in local economies

11. Connectivity:

Does your organization ensure proximity and confidence between producers and consumers? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

Example practices

- Fair and short distribution networks, embedding food systems in local economies
- Business support for re-establishing the connection between producers and consumers: assisting in the development of local food systems, short value chains and webs, developing trading relationships with local growers
- "Supporting regional value generation: embedding food systems into local economies, connecting local producers with other value-adding activities at the local or regional level, including post-harvesting, processing, packaging"
- Community-supported agriculture (CSA), re-localization of food systems and markets within same territories, engagement of communities and businesses in sustainable operations, new innovative markets, participatory guarantee schemes (PGS), local producer's markets/more traditional territorial markets, denomination of origin labelling and certification, e-commerce schemes

12. Land and natural resource governance

Does your organization strengthen institutional arrangements to include the recognition of farmers as managers of natural and genetic resources? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission, and financial results?

Example practices

- Community-supported agriculture (CSA), re-localization of food systems and markets within same territories, engagement of communities and businesses in sustainable operations, new innovative markets, participatory guarantee schemes (PGS), local producer's markets/more traditional territorial markets, denomination of origin labelling and certification, e-commerce schemes
- PES Schemes.
- Price premiums and profit sharing with ethnic groups
- Royalties

13. Participation

Does your organization encourage participation in decision making, decentralized governance and or local management of food systems? If not, why? If yes, how does it happen (example). How does it contribute to your organizations objectives, mission and financial results?

Example practices

- Promote participatory and multi-stakeholder approaches in knowledge generation: integrate farmers and other actors' views in all stage of decision-making, increase participation and exchange between different types of actors
- Participatory guarantee systems
- Policy support or supportive policy frameworks for culturally adapted food
- Enhanced transparency

Red flags

According to Biovision, a project or enterprise displaying any of the following red flags is disqualified from possibly contributing to an agroecological transition:

- Focus on introducing GMOs and associated genome-editing technologies
- Focus on the promotion of synthetic fertilizers and pesticides
- Focus exclusively on promoting extensive single cash crop production at the expense of diversified strategies
- Focus exclusively on productivity resulting in avoidable destruction of vital ecosystems and their services
- Actively promote regulations/actions that hamper/destroy local and farmer-managed seed systems
- Focus on the large-scale intensification of animal production (factory farming)
- Exclude or discriminate women and/or marginalized groups
- Promote extractive raw material production without some local value addition
- Promote approaches that violate rights, including customary rights
- Promote the displacement of local populations and/or land and resource grabbing
- Ignore free prior and informed consent of affected communities
- Block participation of affected communities
- Focus exclusively on promoting highly processed, industrially produced foods

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