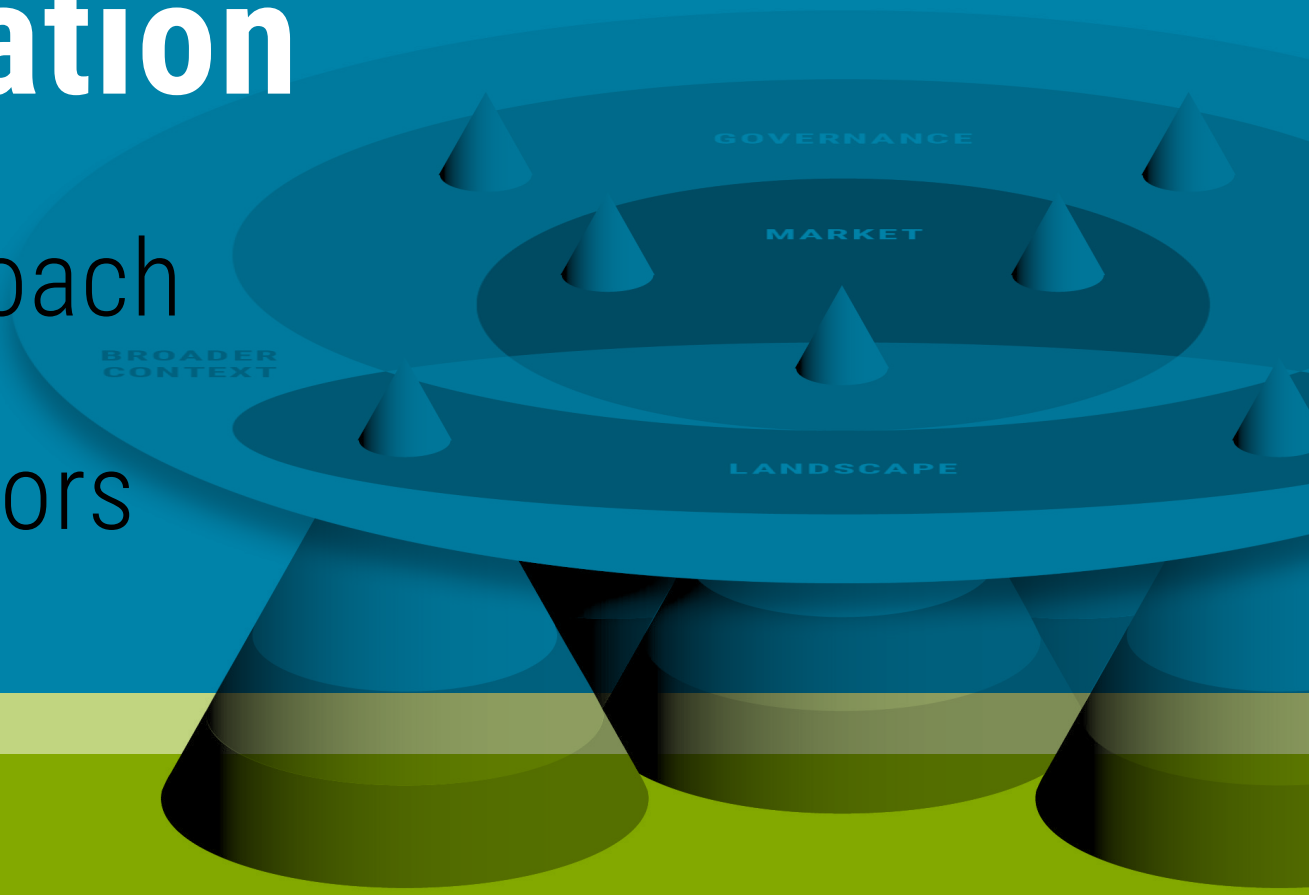
Sector transformation

A systems approach to transforming commodity sectors



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Executive Summary

This document presents the underlying theory, accompanied by practical guidelines, that you need to understand to identify the key elements of complex systems, and to then develop an effective sector transformation strategy, towards competitiveness, sustainability at scale, and resilience over time. It targets actors that have the ambition to improve the performance of a national commodity sector as a whole, rather than only creating local success stories. The thinking presented in this document is based on a range of experiences. Its application can take the perspective of a sector consisting of a single commodity (such as coffee) on the national level, and is applicable at different intervention levels (e.g., a sub-national jurisdiction or landscape) and for different categories of commodities (e.g., vegetables).

Why? The need for a systems approach to sector transformation

The production and trade of commodities are key drivers for prosperity, but involve persistent sustainability problems. In response to these problems in the last two decades, there has been an increasing emphasis on approaches driven by value-chains, which aim to promote sustainability. Despite the successes, value-chain-driven approaches tend to remain 'islands of success': they remain limited in scale or do not sustain over time. The truth is that many sectors have structural weaknesses, in other words weaknesses in their underlying systems. Examples of structural weaknesses include price volatility, natural resource depletion, poor organization of the production base, and the absence of services. To improve the performance of a sector as a whole, there is need for a coordinated systems approach that aims at real transformation.

Sector transformation requires the ongoing process of addressing the root causes of all the relevant structural weaknesses (referred to as systemic issues) that undermine the performance of a sector. Systemic issues are identified and addressed using the following perspectives:

- **Systems perspective**: addressing the systemic issues present in the overall system that determine scaling and allow good performance to be sustained.
- **Root cause perspective**: addressing the explicit (or tangible) and implicit (or intangible) root causes of underperformance in an integrated way.

In addition, sector transformation is a dynamic and iterative process that requires a continuous assessment of progress and an adaptation to changes within both the system and its broader context.

What? The characteristics of a transformed sector from a systems perspective

A sector can be said to perform when it is competitive and sustainable at scale, while also possessing the resilience to remain so. This requires a well-functioning system. As systems can be complex, this document breaks the sector as a system down into ten distinctive and interconnected system components divided over three interconnected spaces: landscape, market, and governance:

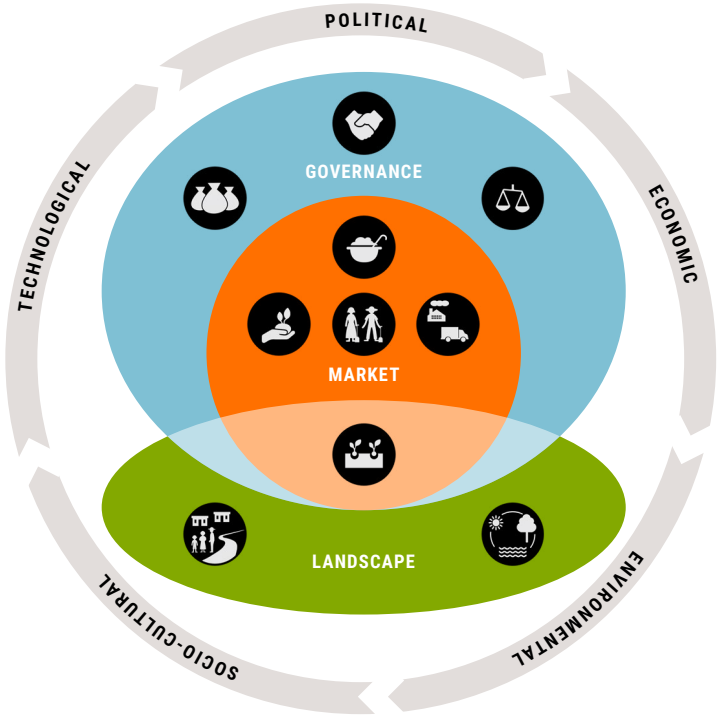
- The **landscape** space represents the location (origins) of the production unit (which may be farms, forests, or mines) and its relationship with the surrounding communities and ecosystems.
- The **market** space refers to the relationships between producers, their organizations, service providers, value chains, and consumers within a sector.
- The **governance** space refers to the policy and regulatory environment, as well as the capability of the sector to collect revenue and reinvest it in a strategic manner. It also involves coordinating and aligning of stakeholders.

The model recognizes the dependency of the sector upon the broader context of political, economic, environmental, sociocultural, and technological factors. Any strategy that aims at sector-wide transformation must ensure that all (or at least most of) these system components are aligned with the vision of a competitive and sustainable sector.

Who? Roles stakeholders can play

Sector transformation requires the stakeholders in the sector to address systemic issues by adopting better practices through three levels of root causes, being improved policies and resources, improved relationships, and new mindsets, keeping in mind the vision of a competitive and sustainable sector. In doing so, stakeholders have specific roles to play. This document presents roles that are typical of public, private, and civil society actors, as well as for research, service providers, and financial institutions.

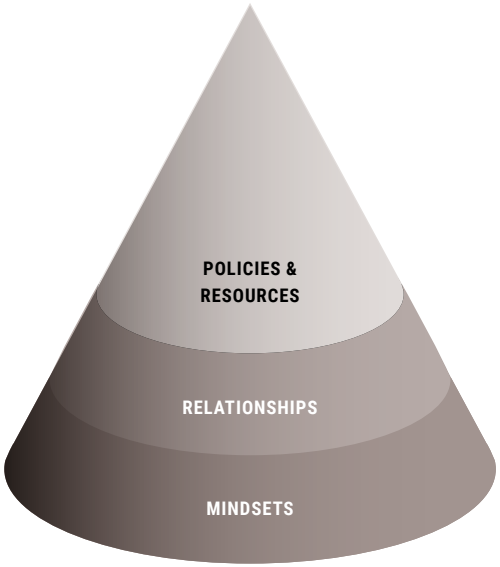
The ten system components of a sector and the five broader context factors



How? Practical guidelines for transforming sectors

This section presents practical guidelines which should help you to understand and to identify the key elements of complex systems, and to then develop strategies that will transform the sector. To achieve this, a participatory, coordinated, and iterative process is needed with the key stakeholders in the sector. This is to make efficient use of their knowledge, and to generate a common understanding of the concept of transformation, and to agree upon the vision for the transformed sector.

The three levels of root causes of underperformance that need to be addressed for transformative change



The guidelines follow three steps:

1. **Sector diagnostics**: Creating a shared understanding of the system and its broader context by assessing the performance of the system components and the root causes of underperformance. The sector transformation and root-cause models will then serve as frameworks to structure the diagnostics.
2. **Vision and strategy development**: Formulating a vision shared by the key stakeholders of the desired future state of sector performance, and agreeing on an effective strategy to drive the transformation of the sector towards this vision. Effective strategies are vision-oriented, integrate the system's perspective, and are truly transformative in that they address the three levels of root causes for the identified systemic issues.
3. **Managing for transformation**: Describing the success factors for coordinating the sector transformation process, such as quality of participation, convening and goal-setting. Understanding the value of small wins in addressing complex systemic issues. Sector transformation also requires a continuous and iterative process of change backed up by sustained funding. Step 3 also includes guidelines for monitoring sector transformation as a basis for learning, continuous improvement, and (most importantly) adaptive management.

The theory and guidelines presented in this document offer input for a coordinated and systematic process that will transform commodity sectors. They require a paradigm shift from the 'traditional' development thinking, which is presented in the following table.

Paradigm shifts for sector transformation

Goal setting	
From solving today's problems	to working towards a future vision
From addressing symptoms	to addressing root causes
From short-term results	to long-term solutions to systemic issues
From small-scale impact (islands of success)	to large-scale impact (seas of change)
Strategy	
From an exclusive or narrow focus	to a holistic view
From individual projects	to aligned, complementary multi-actor, multi-level interventions
From ready-made solutions	to context-specific strategic processes
From tangible outcomes	to tangible and intangible outcomes
From certainty and strong sphere of influence	to uncertainty and addressing issues in a broader context
From logframe and linear thinking	to theory of changes, pathways of change, and adaptive management
Implementation	
From individual project cycles	to a continuous process of coordinated implementation between key stakeholders
From fixed budgets to achieve predefined results	to the inclusion of flexible budgets to take new opportunities into account
From monitoring as separate activity for accountability purposes	to monitoring embedded in the management cycle for learning and adaptive management

Acknowledgements

This document presents the underlying theory, along with practical guidelines, needed to give some momentum to the transformation of commodity sectors into more competitive and sustainable forms. This document has been developed by Aidenvironment, but is the result of accumulated collaborations with experts from a number of organizations, notably IIED, NewForesight, Sustainable Food Lab, the Wageningen Centre for Development Innovations, SNV, ISEAL Alliance, and Greenwich University.[1] It has also benefited from insights arising from numerous assignments that have allowed this thinking to be tested and further developed. These assignments were for GIZ, IDH Sustainable Trade Initiative, International Finance Corporation (IFC), Solidaridad, and the World Wildlife Fund (WWF), among others.

Definitions

The following definitions are used in this document:

- **Sector:** A sector is defined in a pragmatic way, depending upon the goals and scope of the initiative, and its sphere of influence. Thus, a sector can be interpreted broadly (say, the fruit vegetable sector), or more specifically (for instance, the onion sector). This document defines sector boundaries on the national level, but local, regional, or international geographical boundaries could also be employed.
- **Sector performance:** the ability of a sector to be competitive and sustainable at scale, and the resilience to remain so.
- **Sector transformation:** Sector transformation refers to the process of identifying and addressing all relevant structural weaknesses (referred to as systemic issues) that undermine the performance of a sector.
- **System:** A system is a set of actors and factors that determine the prevailing way of working or operating in a certain domain. This document unpacks systems into spaces, components, and functions, which represent increasingly specific units of analysis and intervention.
- **Systemic issue:** A structural weakness at the system level that hampers sector performance. In most cases, there are clusters of closely interrelated systemic issues, and some are causes of others.
- **Root cause:** The fundamental causes of underperformance of a (cluster of) systemic issue(s), which can be found on three interrelated levels: policies and resources, relationships, and mindsets.

1] This document particularly builds on the following two publications:
(1) Molenaar, J.W., Gorter, J., Heilbron, L., Simons, L., Vorley, B., Blackmore, E., Dallinger, J. 2015. Sustainable Sector Transformation: How to drive sustainability performance in smallholder-dominated agricultural sectors? White Paper 1. Published by Aidenvironment, New Foresight and IIED. Commissioned by IFC. Available at: https://pubs.iied.org/16584IIED
(2) Molenaar, J.W., Vorley, B., Blackmore, E. Reaching beyond the value chain: How sector governance can improve the performance of agricultural commodity sectors, published by IIED, Aidenvironment, Sustainable Food Lab. Available at https://sustainablefoodlab.org/wp-contentuploads201705sector-governance-full-report_may2017-pdf-2/

Introduction

Persistent problems with sustainability in commodity production and trade call for a coordinated systems approach that aims at sector transformation. All agricultural, forestry, fishery, and mining sectors have structural weaknesses that undermine the long-term success and scaling of individual projects that address them. Examples of such weaknesses are price volatility, natural resource depletion, or poor organization of producers. Increasing the performance of a whole sector, and not just of a few isolated front-runners, means addressing the underlying structural weaknesses and their root causes. These are often found on a systems level and in the broader context. However, understanding systems and defining systemic issues, never mind changing them, can be a complex endeavor. There are many actors, relationships, factors, and root causes that directly and indirectly affect the performance of sectors. Where can we start looking? Where can we kickstart transformational change? What would an effective transformation strategy look like?

This document presents the underlying theory, along with practical guidelines, that you need to understand and identify the key elements of complex systems, and to then develop strategies for transforming sectors. It helps to understand the wider system and its specific functions in an efficient and effective way (without getting lost in a 'analysis paralysis') and then identify the root causes that are undermining the performance of a sector. These insights can help in developing strategies that can drive the transformation of the sector as a whole. The framework also offers a common language.

This document is for actors who aim to improve the performance of a sector as a whole, rather than simply creating local success stories. Such actors may be governments or sector coordination bodies with a public mandate to govern sectors. Or they may be multistakeholder platforms where sector stakeholders congregate around one or more commodities and pursue sector transformation. Donors and development organizations interested in supporting the systemic changes required to create a 'sea of change', rather than 'islands of success', are also targeted. This document may also prove useful to private-sector, research, and civil-society actors with an interest in better understanding how a commodity sector works and the role they could play in improving its performance.

The thinking presented here has been developed from the perspective of a single-commodity sector (such as coffee) on the national level. The experiences and applications mainly relate to smallholder-dominated agricultural sectors in low-income and medium-income countries. However, we believe that this framework could also be applied on different intervention levels, such as subnational jurisdiction and landscape levels, and for different categories of commodities, such as vegetables.

The structure of this document is organized around the WHY, WHAT, WHO, and HOW questions. Chapter 1 explains WHY many of the current initiatives in commodity sectors fail to improve the performance of sectors as a whole, and WHY a systems approach can overcome the challenges. Chapter 2 describes WHAT a transformed sector can look like. Chapter 3 describes WHO plays what role in the transformed sector. Chapter 4 introduces practical guidelines on HOW to understand and identify the key elements of complex systems and then develop and manage strategies for transforming the sector.

This document helps you to:

- Understand the importance of a systems approach in creating large-scale and long-term changes in commodity sector performance;
- Better understand a commodity sector from the system perspective
- Identify elements for a future vision of a competitive and sustainable sector
- Design a process that aims at sector transformation
- Manage and monitor systemic changes and sector transformation

Why? The need for a systems approach to sector transformation

1. Structural weaknesses undermine the performance of commodity sectors and value chains

This chapter looks at why many current initiatives in commodity sectors fail to improve the performance of sectors as a whole, and why a systems approach can overcome the challenges.

The production and trade of commodities are key drivers for prosperity, but involve persistent sustainability problems. The production and trade of agricultural, forestry, fishery and mining products will increase to meet the growing demands of the world's population and to contribute to stronger national economies. Yet this production and trade also entails persistent socioeconomic and environmental problems, such as poverty, deforestation, pollution, climate change, natural resource depletion, and violations of labor rights and human rights.

In response to these problems, there has been increasing emphasis on value-chain-driven approaches to promote sustainability in recent decades. Such approaches include adopting voluntary sustainability standards or company codes-of-conduct (such as zero-deforestation policies), building inclusive supply chains, and investing in producer support of all kinds. These initiatives have sometimes achieved remarkable success, creating more transparent trading relationships and providing benefits to both farmers and commercial partners. The benefits to farmers include better market access, as well as support services that improve productivity, sustainability, and income. The benefits to companies include a secure source of supply, increased brand value, and increased reputation.

Approaches driven by the value chain tend to create 'islands of success' that remain limited in scale to specific portions of the production base, or which fail to sustain over time. The high cost of the interventions used by value-chain projects can be limiting when donor funding is withdrawn or when pilot projects are scaled up. A temporary 'pilot project' lifespan can limit the longevity of interventions. The result is a tendency to pick the low-hanging fruit—the part of the production base that is already more accessible, better capacitated, and better organized. The results of these initiatives generally do not last, because they have not addressed the underlying structural weaknesses that affect the performance of the sector as a whole. Consequently, the problems of sustainability mentioned above generally remain unresolved.

The truth is that many sectors have structural weaknesses: that is, weaknesses at the level of the underlying systems. Examples of such structural weaknesses include price volatility, natural resource depletion, weak producer organization, an absence of services, and issues relating to elite capture and rent-seeking. In production sectors with persistent weaknesses on the systems level, value-chain initiatives are unlikely to lead to large-scale or long-term impact. The root causes of structural weaknesses lie in policies and resources, and in the relationships and mindsets of the actors involved.

To improve the performance of a sector as a whole, there is need for a coordinated and iterative systems approach that aims at sector transformation. This means addressing the systemic issues and the root causes of their persistence in the whole system.

2. Sector transformation requires a systems approach

Transformative change refers to changes that are at scale (e.g., affecting the whole sector) and that can be sustained over time. To achieve this, the changes need to take place at the level of the underlying system. What do we mean by a system?

A system is a set of relationships, actors, mindsets, and factors that determine the prevailing way of working or operating in a certain domain. In line with the concept of systems thinking, the system includes not only the production system (like the food production system), but also the main social, political, cultural, technological, economic, and ecological subsystems that affect the system's performance.

Sector transformation refers to the continuous and iterative process of identifying and addressing all relevant structural weaknesses, referred to as systemic issues, that undermine the performance of a sector. A sector, such as coffee in Colombia or dairy in Kenya, is transformed if it is competitive and sustainable at scale and can remain so over a long time span.

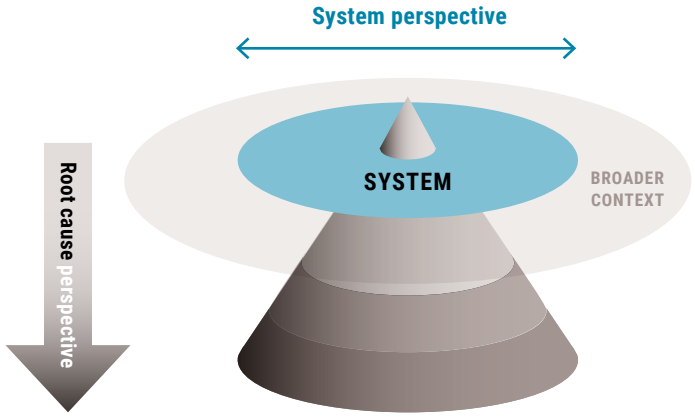


Figure 1: Sector transformation works wide (is broad) and on the root causes (is deep)

Transformational change could also be referred to as the creation of a 'new normal'. This does not refer to a static or stable situation, but to a stage where the actors in a sector have policies and resources, relationships, and mindsets that enable them to be resilient, and thus to remain competitive and sustainable through innovation and adaptation to changes within the system and its broader context.

Systemic issues are identified and addressed from two perspectives (Figure 1):

- **The systems perspective,** from the system and its broader context to structural weaknesses or systemic issues that determine scaling and allow good performance to be maintained.
- **The root-cause perspective**, from issues of underperformance to the deeper root causes of underperformance.

In essence, sector transformation requires strategies that address the root causes of the systemic issues identified in the sector's system. This requires an approach with a scope that is both broader and deeper than many traditional development initiatives. The 'broader' perspective means looking at the interrelated system components on the structural and strategic levels that affect the performance of the sector as a whole. This will result in a multi-actor focus because, for example, value-chain actors, service providers, and public regulators are all key actors that affect the performance of the system. Addressing these systemic issues will help create the conditions that enable scaling and sustaining good performance. However, in order to 'solve' the systemic issues that are identified, their root causes need to be addressed. The 'deeper' perspective involves identifying the root causes of underperformance of the multiple actors. There are both explicit and implicit types of root causes. These two complementary perspectives are explained next.

Perspective 1: The systems perspective, looking at the system and its broader context to identify the systemic issues that determine scaling and good performance sustained in time

Traditional development initiatives have tended to focus directly on the primary actors, ignoring the system and its broader context, which enable change at scale that can be sustained over time. In many initiatives, the context in which primary actors operate is considered as 'beyond influence', with relevant contextual influences formulated as assumptions. However, such a narrow perspective will not result in sector transformation. Actors do not operate in a vacuum. For example, producers operate in a sociocultural and ecological context that will affect what production can take place and how it can happen. Producer performance will also depend on the availability of services such as knowledge, input, and finance services. The availability and quality of these services can depend on the regulatory environment. For example, certain inputs may be absent because of import restrictions, or inaccessible because of price barriers. Many of these constraints depend upon interdependencies between different actors. The trading relationship between producers and value-chain actors may depend partly upon further system conditions, such as rule of law and respect for contracts, trade policies, and strategies for balancing supply with demand.

Table 1: Examples of systemic issues and the relationships they have with the system and the broader context (horizontal relations)

Systemic issue	System	>>>	Broader context
Low farm productivity	Farmers do not use quality seed	Seed distributors lack access to quality seed	Government and private funding for agricultural research institutes to develop new varieties is lacking
Prevalence of child labor in value chain X	Farmers use their children to carry out work at peak season during school time	Low quality of education and poor infrastructure of schools	Lack of funds available for education in remote areas
Lack of trusted landscape governance mechanism	Public, private, and community actors do not engage on landscape issues	Lack of effective landscape governance mechanism	Absence of public mandate for multistakeholder engagement in landscape management

In other words, to fundamentally improve the performance of producers, it is also necessary to improve the performance of service providers and value-chain actors, which may require creating an enabling public policy and regulatory context. Some examples of these horizontal relations are given in Table 1.

Sector transformation requires identifying and addressing systemic issues throughout the entire system. This can be done by unpacking the system into spaces, components, and functions, in order to locate the weaknesses. Large-scale, long-term impact is only possible when all the prominent issues in the system have been significantly improved. Chapter 2 presents a model that describes the system and its broader context.

Perspective 2: Root cause perspective, looking at systemic issues to identify the root causes of underperformance.

Many traditional development initiatives have tended to focus on explicit changes for targeted actors while ignoring the root causes of underperformance, particularly when these causes are implicit. Traditional strategies typically directly target practice adoption by targeting actors through building capacity (training) or providing incentives (e.g., standards). However, initiatives have tended to pay less attention to improving relationships between actors or institutions, and the implicit power relations that can hamper transformative change. For example, an initiative may support producers to increase their incomes by adopting good practices, while ignoring the nature of their trading relationships with buyers, and how this may undermine the producer's profitability. Similarly, few initiatives explicitly aim to change the mindsets and belief systems that determine whether target actors adopt and maintain the desired behavior. For example, a new attitude to child labor can be introduced through certification programs, but so long as sociocultural norms do not change, it is unlikely that there will be any fundamental improvement.

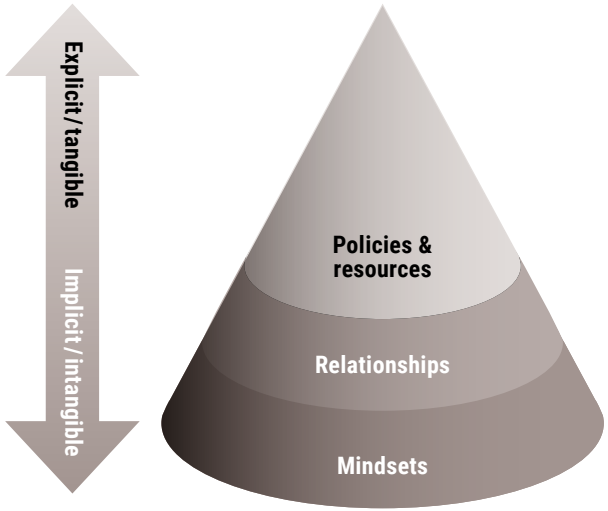
Transformative change requires strategies that address both the explicit (or tangible) and implicit (or intangible) root causes of underperformance in an integrated way. In describing root causes, we have been inspired by the framework developed by FSG,[2] which refers to conditions for systems change which are believed to be fundamental for holding a systemic issue in place. Instead of conditions, we refer to root causes (as we are following a problem-solving approach). Root causes refer to the drivers behind practice adoption of target actors. Root causes determine why an actor maintains a practice contributing to underperformance, and may hamper the adoption of better practices that improve performance. We define root causes on three different levels, ranging from the explicit or tangible to the implicit or intangible. These root causes are generally intertwined with each other and interact, and this interaction may be mutually reinforcing or counteracting.

2] FSG, 2018. The Water of Systems Change. By: Kania, J., Kramer, M., Senge, P.: https://www.fsg.org/publications/water_of_systems_change

Three levels of root causes of underperformance need to be addressed by any strategy for sector transformation (Figure 2):

1. **The level of explicit policies and resources of the actors.** Policies refer to the policies, strategies, management systems (including processes and procedures) and incentive mechanisms which give direction to which practices are adopted by actors. Resources refer to human resources (knowledge, skills), financial resources, and other resources including the underlying business models, which influence the capability of actors to adopt practices.

Figure 2: Three levels of root causes of system underperformance that need to be addressed for transformative change



2. **The (partly explicit) level of relationships and power relations between actors.** This basically includes the relationships and networks between actors in a continuum between conflicts and cooperation. It also includes the way actors interact (their transparency and accountability).

3. **The (often implicit) underlying mental models, mindsets, norms, values, and belief systems.** These aspects are considered the most fundamental elements in driving and sustaining transformational change, but are often neglected and, indeed, are the most difficult to change.

A systems approach of the type described in this section will require long-term engagement and more complex multi-actor and multi-level changes than traditional initiatives. The process of sector transformation is dynamic and iterative and requires a continuous assessment of progress and adaptation to changes within both the system and its broader context. To create oversight in this complexity, the next chapter presents a framework which looks at the sector from a systems perspective.

Table 2: Examples of root causes on the three levels for particular systemic issues (vertical relations)

Systemic issue	Low farm productivity	Prevalence of child labor in value chain X	Lack of trusted landscape governance mechanism
Practices leading to under-performance	Farmers do not invest in quality seed	Producers use their children to carry out work at peak season during school time	Ecosystem users act against each other's long-term interest
Root causes			
Policies and resources	Farmers do not have the knowledge and resources to invest in improved seeds	Child labor policies are not enforced by local governments, so that practices remain 'wrong'	Absence of policies and related practices on landscape governance and management
Relationships	Farmers do not trust the seed providers	Lack of community-based structures and collaboration with local government to monitor child labor	Existence of conflicts and lack of trust between landscape stakeholders
Mental models	Farmers are risk-averse and prefer local varieties for taste and resilience	Sociocultural norms in favor of child labor to gain an income	Belief system among communities that companies can only be part of the problem, and not the solution

What? The characteristics of a transformed sector from a systems perspective

1. Defining sector performance

The previous chapter argued that sector transformation requires systems change, and that implementing system changes required taking a look at the root causes of underperformance in the system and its broader context. This chapter presents a framework which can help define the system and the broader context, with the aim of facilitating this analysis of systemic issues and their root causes.

Sector transformation begins with a shared vision of what the transformed sector's performance should look like.

We define performance of a transformed sector as one that is competitive and sustainable at scale, and which has the resilience to remain so (Figure 3):

Figure 3: Characteristics of a high-performing sector

Competitive refers to economic viability and the sector's ability to generate value. A competitive sector can serve consumers consistently with safe and quality products at affordable prices. In the case of food products, this also includes the ability to produce nutritious food. Competitive sectors are productive, efficient, and adaptive. Their production and value chain systems generate sufficient value to enable reinvestment for further improvement.

Sustainability refers on the one hand to doing no harm through mitigating negative social and environmental risks (e.g., labor issues and natural resource depletion) in production, processing, trade, and consumption. On the other hand, it also refers to deliberately doing more good—for example, by promoting inclusiveness, food security or by restoring a natural resource base. It also refers to whether sectors are inclusive, whether they contribute to livelihood opportunities for low-income and disadvantaged social groups (e.g. based upon gender, age, ethnicity or religion), and whether the values and risks are fairly distributed across stakeholders. Both social and environmental sustainability values and norms will need to be further defined for every specific sector or situation.

Resilience refers to the sector being able to remain competitive and sustainable in the face of changes or shocks regarding market dynamics, political and social developments, and climate change. It thus also includes the capacity to innovate.

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2. Breaking a sector down into system components and context

This section presents a holistic model which breaks a sector down into ten system components and a broader context in support of realizing a vision. This allows better understanding of the sector from the systems perspective and helps identify systemic issues. The model (Figure 4) consists of three distinct but interconnected spaces: landscape, market, and governance. Each space is subdivided into system components:

- The **landscape** space represents the location (origins) of the production unit (such as farms, forests, or mines) and its relationship with the surrounding communities and ecosystems.
- The **market** space refers to the relationship between producers, value chains, consumers, and service providers within the sector. It also includes the organization of producers or other value-chain actors.
- The **governance** space refers to the policy and regulatory environment and the capability of a sector to collect revenues and to reinvest them strategically. It also includes the coordination and alignment of stakeholders.

The model also recognizes the dependency of the sector on the broader context. These contextual factors, presented by the outer ring in Figure 4, may constitute barriers to addressing systemic issues, or may offer opportunities to do so. For example, politics may be strongly against transformative changes because it is not in the interest of the politicians in charge to support structural changes. Yet shortly after new elections, newly powerful politicians may be keen to support transformative strategies.

Typical context factors include:

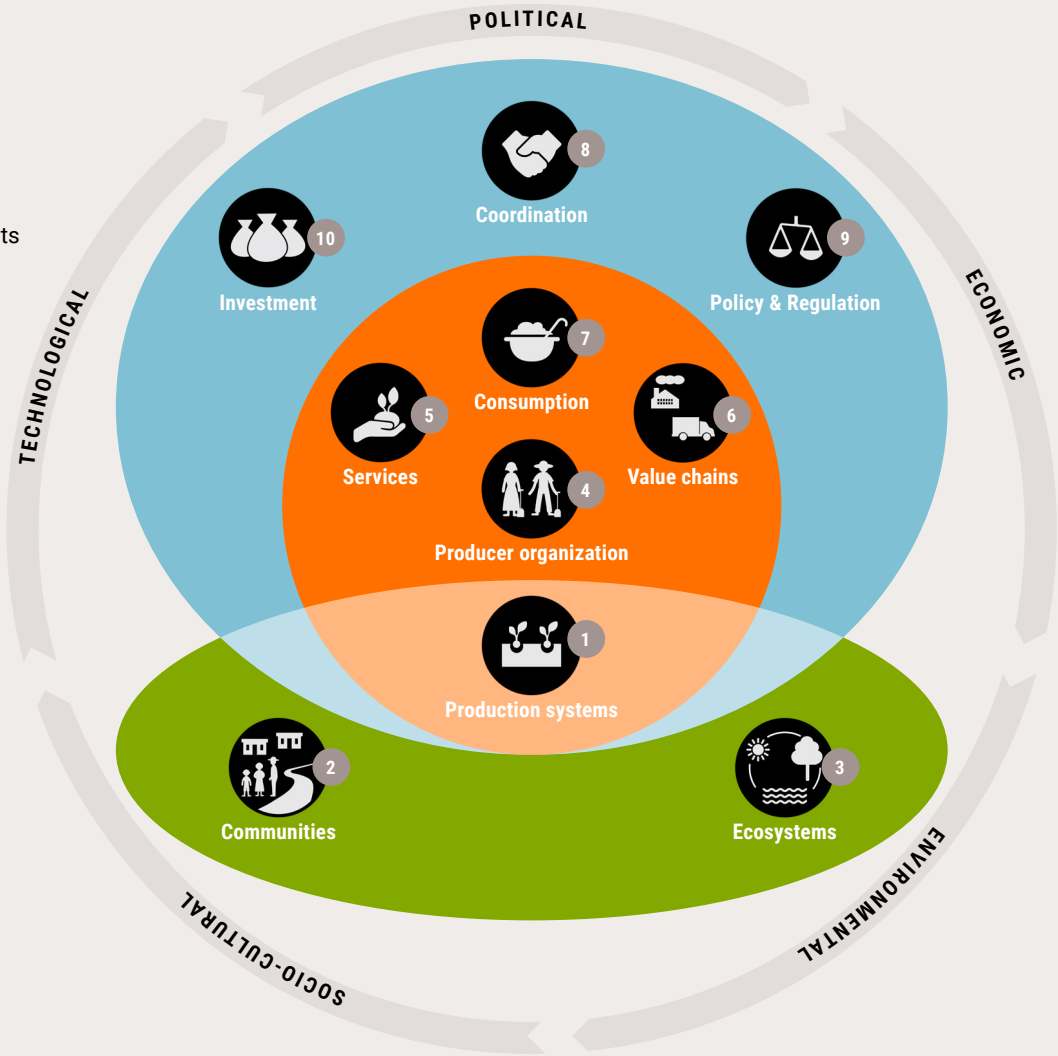
- Political: (inter)national policy frameworks, rule of law, institutional strength, politics.
- Economic: supply–demand balance, price volatility, interest rates, exchange rates.
- Environmental: topography, weather events, climate change.
- Sociocultural: demographics, religion, cultural norms, conflicts, security issues.
- Technological: transport, electricity, communication, information technology.

Influential factors in the broader context may be within or outside the sphere of influence of the proposed initiative. If it is within the sphere of influence, it can be considered a systemic issue whose root causes need to be addressed. It is not always straightforward to determine whether a factor should be classified as a context factor or part of the system. A rule of thumb is that when a factor is outside your sphere of influence, it can be considered a context factor. For example, price volatility may be considered a context factor when it depends on international market dynamics and weather events. If price volatility constitutes a barrier to the transformation of a national sector, the sector transformation strategy should find ways to mitigate its effect, such as by promoting crop diversification or creating a price stabilization fund. However, when the root causes of price volatility largely depend upon national production and demand dynamics, then a sector transformation strategy could address the root causes of this barrier, such as through production control measures. Similar challenges exist in classifying sociocultural norms, institutional strength, and politics. In some sector initiatives, these could be seen as context factors that are very difficult to change, while in others they may be within the scope of influence. It should be clear that such classification also depends on the scale of the sector—whether local, national, or international. The classification may also change over time, as the sector transformation strategy shows progress and new factors come within your sphere of influence.

A strategy for sector-wide transformation must ensure that all (or at least most) of these components are aligned with the vision of a competitive and sustainable sector. The performance in one component depends partly on the performance in the other components. For example, building fair and competitive value chains may only be possible if producers receive services that help improve their performance, and if the regulatory environment creates a level playing field, including ways to manage landscapes sustainably.

The ten system components will now be further unpacked into explicit system functions. On this level, we can assess whether the relevant functions perform in a desirable way—that is, whether they are aligned with the goals of the sector, being both competitive and sustainable.

Figure 4: The ten system components of a sector
and the system functions of each component (figure design by Rainbow Collection)



MARKET

4 Producer organization
- Access to services and markets
- Empowerment and agency

5 Services
- Research and development
- Service delivery

6 Value chains
- Linking supply with demand
- Value and risk sharing
- Value addition

7 Consumption
- Consumer demand
- Losses and waste reduction

GOVERNANCE

8 Coordination
- Sector dialogue and coordination
- Shared vision, strategy. and tools
- Monitoring and learning

9 Policy & Regulation
- Sector relevant policies, laws, and regulation
- Policy implementation and law enforcement

10 Investment
- Revenue generation and reinvestment mechanisms
- Investor attractiveness

LANDSCAPE

1 Production systems
- Production and supply
- Income
- Social and environmental capital

2 Communities
- Basic services and infrastructure
- Community engagement
- Sociocultural norms
- Livelihood opportunities

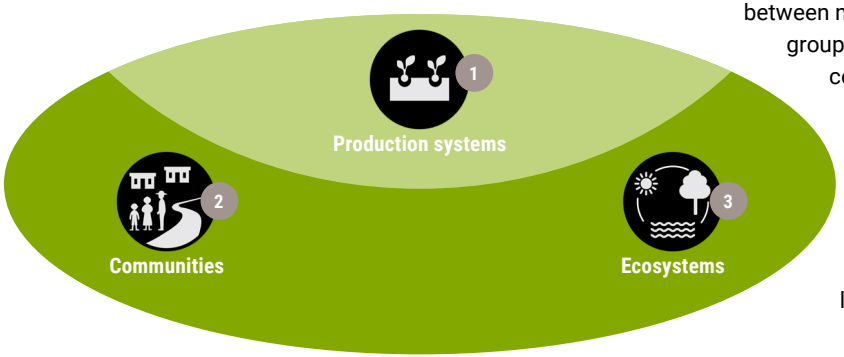
3 Ecosystems
- Landscape governance
- Natural resource management
- Conservation and restoration

3. Landscape system components

The landscape space concerns the integration of production systems, communities, and ecosystems.

1 Production systems

The production systems component refers to the producer unit, which may be a farm, a production forest, a fishery, or a mine. Small-scale units may also include the (extended) household. The production system is part of both the landscape and the market space. In a performing sector, production systems are competitive, sustainable, and resilient, and are capable of satisfying demand and meet food security objectives. They enable producers to earn a living income, to pay a living wage to their workers, and to reinvest in the long-term viability of their business. Production systems are cost-efficient, market-oriented, and able to adapt to changing market and climate circumstances. Producers respect human and labor rights, take gender relationships into account, and have positive relationships with the surrounding communities; they also have a sense of environmental stewardship, which means that they avoid negative environmental impacts and ensure long-term ecological sustainability.



In the production system component, the following system functions contribute to a performing sector:

- **Production and supply**, supplying subsistence households and commercial markets with quality, safe, and affordable products. In the case of food products, this includes the supply of diversified food products with nutritional value. This is supported by the ability to respond to changing market and climate circumstances without affecting the long-term viability of the production system.
- **Income**, generating revenues and wages, which can be used for continuous investment in the production system, livelihoods, and rural development.
- **Social and environmental capital**, creating social value (including food security and employment) while protecting and strengthening environmental values and improving climate resilience (including soil health and biodiversity).

Typical root causes of issues in the producer organization component include availability of land, labor, and capital, as well as mindsets (e.g., entrepreneurship and environmental stewardship) and the power relationships between producers and their workers, as well as unequal relations between men and women and other social groups. There are relations with other system components, including communities (like infrastructure and local norms), ecosystems (landscape governance), producer organizations (like services and marketing), services (such as inputs and finance), value chains (like marketing), and regulations (such as land tenure, labor laws, and chemical use).

2 Communities

Communities are diverse in terms of social groups, gender, ethnicity, and land ownership. Communities are units of social networking, safeguarding, and respecting sociocultural norms. They also provide basic services and infrastructure. Communities may be governed by informal rules, such as land use rules. In a performing sector, local norms or belief systems support the sustainable production practices (including around gender roles, child labor, and occupational health and safety) and consumption behavior (e.g., of locally produced products). There are also mechanisms for managing conflicts (such as over land tenure). Communities also provide basic services and infrastructure which producers, value-chain actors, service providers, and their workers need to perform.

In the community component, the following system functions contribute to a performing sector:

- **Basic services and infrastructure,** providing water, health, education, roads, warehouses, electricity, and communication, while supporting producers' and workers' health and well-being, as well as providing access to services and markets.
- **Community engagement**, ensuring producers and community members collaborate and are able to resolve conflicts, while sharing resources equitably.
- **Sociocultural norms**, agreeing on and respecting desired sociocultural norms (for example regarding gender, child labor, and biodiversity protection).
- **Livelihood opportunities**, providing local employment and other income opportunities to support producers in income diversification and exit strategies.

Typical root causes of issues in the communities component include the available capacity and financial resources of local institutions, accountability of local governance mechanisms, and social cohesion and local sociocultural norms and values, for instance on gender relations. There are relations with other system components, including producers (such as infrastructure and local norms), ecosystems (like landscape governance), consumption (such as for locally produced products), regulation (such as land tenure and rural development policies), and investment (like investments for infrastructure).

3 Ecosystems

Ecosystems provide both products, such as timber, and services, such as clean water or natural pollinators. Ecosystems also provide space for biodiversity, including buffer zones and corridors for migrating animals. Some ecosystem services operate on a large scale, such as climate regulation on the regional or global scale, surpassing the interest of local communities. Landscape users may have different interests in ecosystem services, and will thus have competing interests, which can undermine the viability of production systems. In a performing sector, positive ecological interactions exist between production systems and the surrounding landscape. Ecosystems are managed between the different users and support balanced production, livelihood, and conservation goals.

In the ecosystem component, the following system functions contribute to a performing sector:

- **Landscape governance,** planning, managing, and monitoring land use across all landscape users in support of safeguarding ecosystem services and conservation.
- **Natural resource management,** sustainably managing water, soil, vegetation, and plant genetic resources in support of the long-term viability of production systems and other production, livelihood, and conservation goals.
- **Conservation and restoration**, conserving and restoring biodiversity and other high conservation values.

Typical root causes of issues in the landscape component include knowledge of and respect for sustainable management practices, financial resources, the accountability of governance mechanisms, the balance of trust and power between ecosystem users, and local norms and values. There are relations with other system components, include producers (such as production practices and expansion targets), communities (such as local institutions), value chains (like market incentives for sustainability), and regulation (such as land use planning and forest protection).

Text box 1: ***Community-based child labor free zones***

Child labor is a persistent issue in many rural and urban contexts. There is an increasing awareness that supplier codes of conduct and certifications are not sufficient to eradicate this problem in a given geography and in global value chains. Consequently, the issue of child labor is increasingly approached from the community component. An example of this is the concept of child labor free zones, an area-based approach involving all stakeholders, including teachers, parents, children, unions, community groups, local authorities, religious leaders, and employers. It supports norm-setting and addresses other root causes. The power comes from the people living in these communities who set the norm that 'no child should work; every child should be in school'. This involves community-based monitoring systems, as well as investments aimed at making schools better and more accessible. It also involves teaching adults how they can make ends meet without the income generated by their children—for instance, by participating in savings and loan groups and developing income-generating activities. The approach also seeks active collaboration with large employees and their customers to create the right incentives for practices that are free of child labor.

Further reading: https://stopchildlabour.org/child-labour-free-zones/

4. Market system components

The market space consists of the organization of producers, value chains, service delivery, and consumption. Producer systems are also part of this space.

4 Producer organization

Producer organizations enable producers to access services and markets and to participate in sector coordination. Small-scale producers are often not organized, which is a challenge for producers, for service providers, and for value-chain actors. In a performing sector, producers are well governed and have the capacity to effectively and efficiently organize themselves around access to services and markets, and to participate in sector coordination.

Organizational models may be producer-based (including cooperatives and associations), value chain-based (including contract farming), and service provider-based (as service hubs) (Figure 5).

In the producer organization component, the following system functions contribute to a performing sector:

- **Access to services and markets**, to provide services in an equitable way for different segments of producers, including men and women and other social groups, and at scale. This can include producer-driven value-adding activities.
- **Empowerment and agency**, to support the defense of producer's interests against other actors, and to represent members in sector or landscape dialogues and platforms.

Typical root causes of issues in the producer organization component include professional management, viable business models and accountable governance of the groups, entrepreneurial spirit, and trust between members.

There are relations with other system components, including producers (sourcing), services (such as inputs and finance), value chains (such as marketing), regulation (like, cooperative laws), and coordination (like participation in sector dialogue).

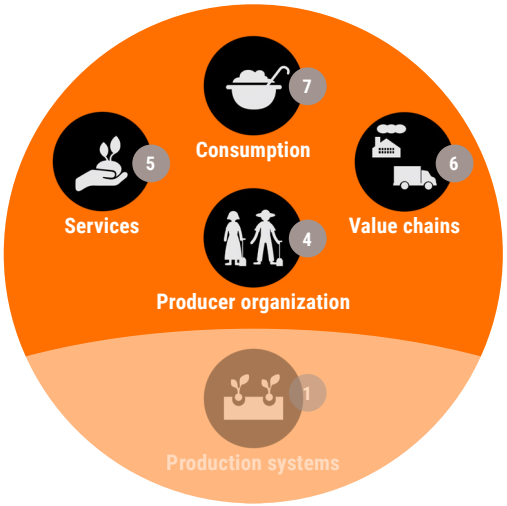
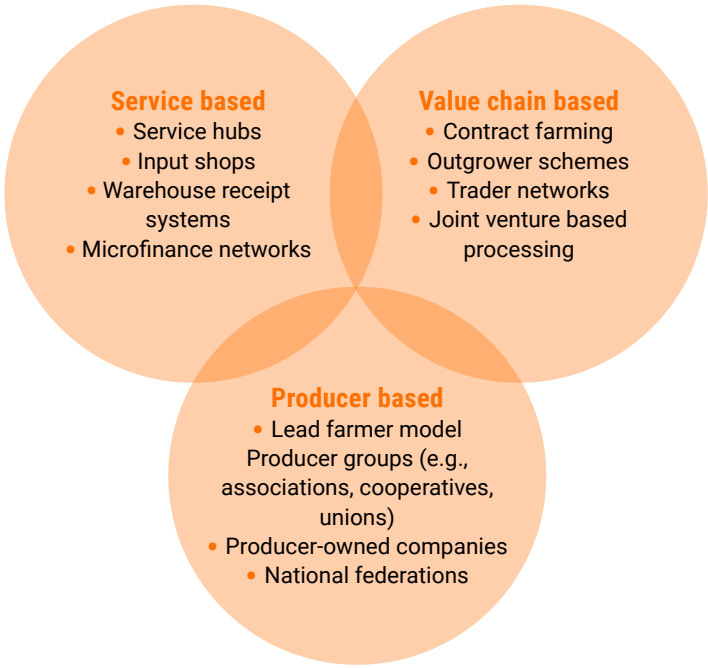


Figure 5: Examples of producer organization models



5 Services

Producers, their organizations, and value-chain actors require services such as knowledge, technology, inputs, market intelligence, and finance to improve their performance. In a performing sector, services are of high quality and tailored to the needs of specific segments of producers and value-chain actors. In a small-scale producer context, service providers offer services appropriate to the whole farming system and to household needs (instead of a single product focus), and recognize different needs by different producer types, gender, age group and other social groups.

To drive scale, service delivery models are cost-efficient, economically viable, and scalable. Service providers treat producers as customers (rather than beneficiaries) and offer services in a bundled way or to complement other critical services. Services can be provided by producer organizations, value-chain actors, public sector actors, or specialized service providers.

In the services component, the following system functions contribute to a performing sector:

- **Research and development**, ensuring innovation in supporting competitive and sustainable production systems, service delivery models, and value-chain models. They can also contribute to improvements in other system components, such as policy development.
- **Service delivery,** providing quality services that are accessible and tailored to the needs of different segments of customers, including inputs, finance, knowledge, and technology.

Typical root causes of issues in the services component include the resources, technology, and capacity available for R&D (for example, to promote climate resilience or develop new products), the business models of service delivery and mental models (such as considering producers as clients). There are relations with other system components, including producers, producer organizations and value chains (as customers), regulation (such as import regulation for inputs, licensing, and quality control of service providers), and investment (such as budget for R&D or subsidized services).

Text box 2: ***Kickstarting Kenya's forage-related service sector***

Kenya's dairy sector has a number of structural weaknesses that prevent it becoming more competitive and sustainable. A key bottleneck is the poor access to and availability of good quality fresh and preserved forages (such as grass, hay, and silage), leading to seasonality in milk supply, low dairy cow productivity, and high cost per liter of raw milk produced.

In response to this challenge, SNV's Kenya Market-led Dairy program has successfully kick-started a market for high-quality forage. Over the eight years, it has supported an emerging forage-related service sector in introducing technological innovations and establishing viable service delivery models differentiated for small-scale, medium-scale, and large-scale farmers. Examples include mechanized services for maize production, as well as harvesting, silage-making, and baling services. On the demand side, it has introduced feed-rationing software and set up dairy advisory companies. The number of dairy farmers who understand the business case for using quality forage is increasing, as are the volumes of materials that can be supplied to them.

Although at the end of project the reach of service providers was still limited (in view of the total number of dairy farmers in Kenya), the forage sector was growing rapidly through expansion of existing service providers and crowding-in of new ones.

For more information, see "Kenya Market-led Dairy Programme", Close Out Magazine, August 2019 (link)

6 Value chains

Value chains distribute products from producers to consumers. The structure of value chains and the nature of the trading relationships strongly affect sector performance. In a performing sector, value chains are inclusive and efficient, and promote a fair distribution of the risks and value across all value-chain actors, from the producer to the end consumer. They incentivize the adoption of good practices and promote value creation—rather than pushing for a race to the bottom in price. Having short, traceable, stable value chains promotes accountability, predictability, and shared responsibility. Value chains also need to be responsive to changing supply and market demand.

In the value chain component, the following system functions contribute to a performing sector:

- **Linking supply with demand**, moving products in an efficient and transparent manner between producers and consumers, while being responsive to changing supply and demand.
- V**alue and risk sharing**, ensuring mutual beneficial, fair, and transparent relationships between value-chain actors, with pricing and trading practices that promote risk sharing and incentivize product quality and sustainability across the entire value chain.
- **Value addition**, capturing opportunities for additional value (such as through processing or market differentiation).

Typical root causes of issues in the value chain component include business models, trust and power relations between value-chain actors, and mental models related to fair and equitable value chain partnerships. Relationships with other system components include producers and producer organizations (sourcing), services (such as market information and finance), consumption (such as demand), regulation (like market management), coordination (like aligning precompetitive sourcing targets), and investment (such as resources for market promotion).

7 Consumption

Consumer and end-user demand is a key driver in every sector. It is important in determining what products are produced and with what quality, and it can influence how they are produced and traded. The behavior also determines to a large extent the total footprint of a sector. In a performing sector, consumers demand for, and are willing to pay for, sustainably produced and traded goods. In the case of food, consumers also demand healthy and nutritious products. In a performing sector, consumers minimize (food) losses and waste.

In the consumption component, the following system functions contribute to a performing sector:

- **Consumer demand**, supporting sustainably produced and traded products and, in the case of food, healthy and nutritious diets.
- **Losses and waste reduction** through more efficient purchasing, storage, and recycling practices.

Typical root causes of issues in the consumption component include purchasing power, general public awareness and understanding of quality issues, and value and norms relating to consumption habits. There are key relationships with other system components, such as with the value chain (such as for distribution and marketing) and regulation (such as incentives to more sustainable and healthier consumption).

Text box 3: ***Examples of value chain pricing and premium models***

- Fixed premiums: the payment of an additional fixed value per volume of produce independent of the current market price.
- Flexible premiums: the payment of an additional value per volume of produce based upon a predetermined variable, like market price: as the market price decreases, the premium increases, and vice-versa.
- Floor or minimum prices: these set a limit on how low a price can be paid for a product. If the market price is above the floor price, the market price prevails.
- Fixed prices: Prices are fixed during a predetermined period and decoupled from the market price.

Prices and premiums can be based on different benchmarks, for instance value-added attributes (such as quality specifications or sustainability performance), the costs of sustainable production, including a certain margin (the cost-plus model), the poverty line, and living income and living wage benchmarks.

See for more information: Aidenvironment and Sustainable Food Lab (2018), "Pricing mechanisms in the cocoa sector: options to reduce price volatility and promote farmer value capture". Study commissioned by GIZ and ISEAL Alliance. (see link)

5. Governance system components

The governance spaces refer to the institutions and processes at sector level. It consists of three components: coordination, policy and regulation, and investments.

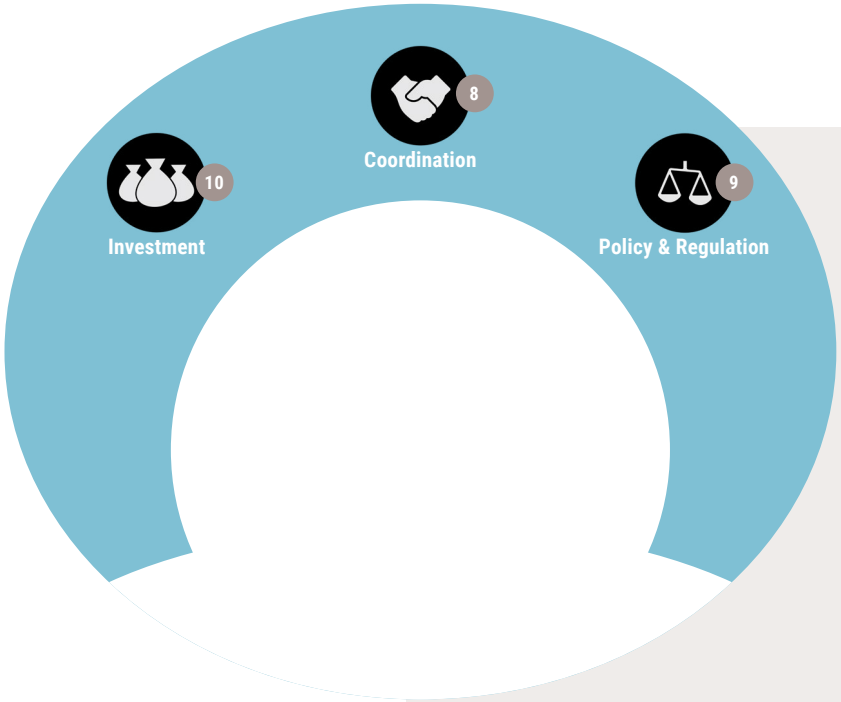
8 Coordination

Sectors require good coordination and alignment of stakeholders. Without these, individual investments will be undermined and attempts to address the systemic issues that require collaborative action will be hindered. In a performing sector, key stakeholders collaborate, align their investments behind a common vision, and are held accountable. There is frequent dialogue between key stakeholders (such as through multistakeholder platforms) and, where needed, more formal governance mechanisms exist (like commodity boards). Platforms and bodies have a mandate from the government and can be located within the government, or at an arm's length from it. Effective coordination also requires sector-wide monitoring of progress towards the fulfilment of the vision and informing evidence-based learning.

Key functions that determine performance for this component are:

- **Sector dialogue and coordination**, facilitating an inclusive dialogue, coordinating stakeholders, and informing policies and regulation.
- **Shared vision, strategy** and tools, helping to align stakeholders behind a common vision and strategy of a competitive and sustainable sector. It also includes the development of precompetitive tools in line with the vision (e.g., production standards or training curricula).
- **Monitoring and learning**, to track the progress of sector performance in order to inform decision-making, accountability, and learning.

Typical root causes of issues in the coordination component include trust between stakeholders, willingness to collaborate, civic space and resources to convene stakeholders for dialogue and coordination. The coordination component is related to all the components included in the scope of the vison and strategy. Its functioning partly depends on producer organization (as in the case of producer agency), regulation (such as the rules to formalizing governance bodies) and investment (such as the functioning of platforms and bodies).



Text box 4: ***Multistakeholder platforms in the coffee sector***

The Global Coffee Platform promotes national country platforms that allow national and international stakeholders, and public and private stakeholders, to collectively identify country-specific priorities and to work together to address them. Country platforms enable tailored solutions to local priorities and a more effective allocation of resources. They are a conduit for discussing and influencing policy, as well as for defining the levels of training needed. Examples of their activities include the development of National Sustainability Curricula, extension tools, and the monitoring of sector performance in line with the Sustainability Reporting Framework.

For more information, see : https://www.globalcoffeeplatform.org/

9 Policy and regulation

Policies and regulations can set the boundaries inside which other actors may operate. They can also address systemic issues that exceed the influence of individual actors. In a performing sector, coherent policies, laws, and regulations effectively govern markets and landscapes and their interactions. They create a level playing field, providing incentives for good performance and disincentives for poor performance. They also address, and aim to solve in a just manner, systemic issues such as price volatility, poor value capture, land tenure issues, and climate change. For some topics, such as market management, international coordination may be needed to avoid countries undermining each other's strategies.

Key functions that determine performance for this component are:

- **Sector relevant policies, laws, and regulation**, addressing systemic issues, creating level playing fields, and ensuring policy coherence, while providing incentives for good performance and disincentives for poor performance, including sustainability norms and standards, such as on food safety.
- **Policy implementation and law enforcement**, to ensure that the intent of the policies, laws, and regulations are realized.

Typical root causes of issues in the policy and regulation component include capacities and financial resources of public institutions, trust in the public sector, accountability mechanisms, and mental models of public agents (such as with regards to rent-seeking), and with respect to the importance of social and environmental sustainability.

The policy and regulation component relates to all other components and can include issues around:

- Market management, including trade, traceability, quality, prices, demand promotion, and supply management. supply management can be carried out through land-use planning, production or export quotas, buffer stock management, price incentives, and the promotion of crop diversification.
- Social and environmental practices, such as labor rights, social welfare, forest protection, water use and pollution.
- Land governance, such as land use planning and tenure.
- Producer organizations, such as cooperative law.
- Business environment, such as licenses, rule of contracts, import–export regulations, and finance laws.
- Fiscal and budgetary, such as taxes and fees, as well as public investments and subsidies.
- Broader agricultural and rural development.

10 Investment

To structurally improve the performance of a sector, precompetitive investments are required in research, capacity building for producers, quality management, subsidized services, price stabilization, market promotion, and landscape management. A performing sector has the ability to generate revenues at the sector level on a sustained and consistent basis. These revenues are then reinvested in the sector so as to support the realization of the sector vision and strategy. Revenue generation and reinvestment mechanisms are managed transparently and accountably.

Key functions that determine performance for this component are:

- **Revenue generation and reinvestment mechanisms** to raise revenues (such as through taxes and fees) that will be reinvested in the sector's strategic activities (such as through subsidies, trust funds, investment, loans, and payments for ecosystem services schemes).
- **Investor attractiveness**, to pull additional private and public investments into the sector, possibly in the form of blended finance mechanisms that cater to funders with different risk appetites.

Typical root causes of issues in the investment component include the capacities and financial resources to implement these mechanisms, accountability mechanisms, and mental models (e.g., longer-term vision and inclusiveness ambition). The investment component can relate to any other component, but is particularly important for investments in services (such as R&D), coordination (such as functioning of platforms and governance bodies), regulation (like market management), communities (such as infrastructure), and landscapes (such as landscape governance). The revenue generation and reinvestment mechanisms often depend on the regulation component (such as the tax regime and investment policies).

Text box 5: ***How 1.7% of the export price contributes to a competitive and sustainable coffee sector in Costa Rica***

ICAFE is a state-sanctioned nongovernmental organization with the mandate to regulate and supervise the entire Costa Rican coffee sector; that is, it is a governance body in line with the coordination system component. ICAFE imposes a 1.7% export levy. Of this, 0.5% is used to capitalize a Stabilization Fund which compensates farmers if prices drop below cost of production by more than 2.5%. The remaining 1.2% is used by ICAFE for its running costs, as well as various investments. For example, ICAFE invests in research and input programs targeting the control of pests and diseases, the renovation of plantations, and adaptations to climate change. It also implements rigorous national quality standards and control mechanisms. ICAFE is very active in promoting its coffee domestically and internationally. Costa Rica is one of the coffee producer countries with the highest domestic coffee consumption per capita. On an international level, Café de Costa Rica is presented as a country brand and positioned in specific markets through participation in fairs, advertisements, and publications. The high quality, in combination with the active marketing by ICAFE of the Costa Rica brand, means its coffee receive one of the highest premiums on the world market. ICAFE also implements a pricing policy in which farmers receive 80% of an annual weighted average of a daily reference price based on the New York exchange price. Margins are also set for washing stations and exporters. This model is supported by a rigorous traceability system.

Sources: Aidenvironment, IIED, Sustainable Food Lab (2017)."c: Looking beyond the value chain to build high performing and resilient agriculture sectors." Study. (see link)

Who? Roles stakeholders can play

Sector transformation requires the sector stakeholders to address the systemic issues by adopting better practices through improved policies, improved relationships, and new mindsets in support of the vision of a competitive and sustainable sector. In doing so, stakeholders have specific roles to play. In line with our description of the system components, the following roles can be distinguished for a selection of key stakeholders:

Table 3: Roles stakeholders can play in sector transformation

Governments in producing countries • Support or mandate a coordinated and participatory process of sector transformation • Develop and enforce policies and regulations that enable sustainability and competitiveness • Enable revenue generation and reinvestment mechanisms • Ensure accountability and transparency	**Governments in consuming countries** • Promote markets for sustainable products • Introduce policy measures that incentivize value-chain actors to invest in sustainable production and trade (such as due diligence and fair-trade practices) • Have a mindset that cares about the environment and people in countries of origin
Value-chain actors • Build direct, transparent, stable commercial relationships with suppliers • Reward good performance (such as quality and sustainability) with price incentives and responsible sourcing practices. • Invest in higher value end products and share that additional value with producers • Have a mindset that considers small-scale producers to be business partners	**Research and service providers** • Develop viable producer systems, service delivery models, and value-chain models. • Invest in service delivery tailored to specific segments of customers • Incentivize continuous improvement by offering diversified service packages to different segments of farmers • Invest in innovation and uptake by public and private sectors
Producers • Invest in viable and sustainable production systems • Develop positive relationships with surrounding communities	**Producer organizations** • Invest in viable models in support of inclusive service provision and market access and agency in sector dialogue • Ensure good governance, accountability, and transparency to members
Civil society • Initiate and convene sector dialogue and support the participation of vulnerable groups • Advocate to public and private actors for effective and accountable policies and implementation • Support community development and landscape governance projects • Have a mindset to collaborate with private sector	**Donors and finance sector** • Support and invest in transformation processes and systemic solutions • Have a mindset that recognizes a long-term perspective, adaptive management, and alternative models of measuring success (beyond the number of producers, cultivated area, and market share). • Enable blended finance mechanisms that can enable financial inclusion at scale and strategic investments.

How? Practical guidelines for sector transformation

In this chapter, we introduce practical guidelines that can assist in understanding and identifying the key elements of complex systems, and then in developing sector transformation strategies. Before explaining the process, we begin by highlighting the fact that achieving sector transformation requires a different way of thinking from that used on traditional development projects.

1. Sector transformation requires a paradigm shift

Pursuing the transformation of a sector as the main goal requires a different mindset from 'conventional' value chain and development thinking. This is valid for sector stakeholders, as well as for the agencies that promote sector transformation. While system change is often being addressed as a secondary 'enabling environment' component in projects, sector transformation requires system change to be the main focus.

Table 4: The paradigm shift needed for sector transformation[4]

Goal setting	
From solving today's problems	to working towards a future vision
From addressing symptoms	to addressing root causes
From short-term results	to long-term solutions to systemic issues
From small-scale impact (islands of success)	to large-scale impact (seas of change)
Strategy	
From an exclusive or narrow focus	to a holistic view
From individual projects	to aligned, complementary multi-actor, multi-level interventions
From ready-made solutions	to context-specific strategic processes
From tangible outcomes	to tangible and intangible outcomes
From certainty and strong sphere of influence	to uncertainty and addressing issues in a broader context
From logframe and linear thinking	to theory of changes, pathways of change, and adaptive management
Implementation	
From individual project cycles	to a continuous process of coordinated implementation between key stakeholders
From fixed budgets to achieve predefined results	to the inclusion of flexible budgets to take new opportunities into account
From monitoring as separate activity for accountability purposes	to monitoring embedded in the management cycle for learning and adaptive management

4] The content of this table is based upon Aidenvironment's own experience and inspired by Herr, M., Uraguchi, Z. B. (2016) On Systemic Approach. What It Is and What It Is Not, published at https://www.helvetas.org/en/switzerland/how-you-can-help/follow-us/blog/inclusive-systems/On-systemic-approach-what-it-is-and-what-it-is-not

2. Three steps to pursue sector transformation

In support of this paradigm shift, this document introduces practical guidelines that can help you to understand and identify the key elements of complex systems, and to consequently develop strategies for sector transformation. To do so, a systematic approach to sector transformation is needed, so that we can deal with the multiplicity of components that play a role. The approach has the following three steps (Figure 6):

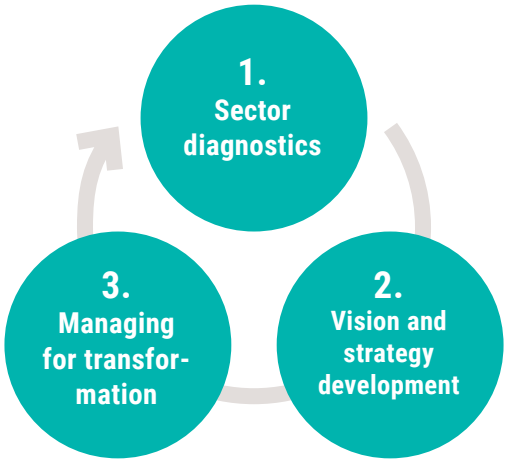
1. **Sector diagnostics:** create a shared understanding of the system and its broader context by assessing the performance of system components and its functions, and the related root causes of underperformance.
2. **Vision and strategy development:** formulate a vision shared by the key stakeholders of the desired future state of sector performance, and agree on an effective strategy to address the root causes and thus to drive the transformation of the sector towards this vision.
3. **Managing for transformation:** coordinate strategy implementation while collecting evidence and knowledge for learning, continuous improvement, and adaptive management.

These three steps will require a participatory and coordinated process. One fundamental aspect of sector transformation is the change in mindset (the paradigm shift; see above), which applies not only to target groups but also to the implementing agencies. Such a change can be stimulated by the intense participation by the implementing agencies and the relevant stakeholders in the process of developing and implementing strategies aimed at sector transformation. The principles of the process of developing and implementing strategies for sector transformation are as follows:

- Ownership by the agencies that will be responsible for implementing the strategy
- Multistakeholder participation and communication
- Participation beginning with the diagnostics and design phase
- Creating a shared understanding of the sector and developing a shared vision and strategy.
- Coordinating between different stakeholders during implementation of the transformation strategy.

In addition, the process of sector transformation should be iterative. Along the way, there will be changes in the dynamics in the sector and its broader context. Insights will emerge on which strategies are effective and which are not. New innovations can create new opportunities which were previously not considered possible. These changes require the continuous assessment of progress and context, and an openness to adapting the strategies, or even the vision itself.

Figure 6: Three steps to pursue sector transformation



3. Step 1: Sector diagnostics

To create an understanding of the wider system, systemic issues, root causes, and their interrelations, the following 3 actions are recommended, see also Figure 7:

Action 1 System analysis

A diagnosis begins with the definition of the boundaries of the sector. It then requires identification of the relevant system components and functions. This can be done by distinguishing between components and functions that fall within the sector scope and the factors which can be considered part of the broader context (e.g., political, economic, environmental, sociocultural, and technological). Making this distinction is not always straightforward. It can help to relate this to the scope of your goals (such as the specific target actors or geography) and the expected sphere of influence of the initiative. This distinction is important in determining which issues fall within the scope of the strategy. Note that this distinction will be further detailed when doing the root cause analysis (Action 3), as some root causes may fall beyond the sphere of influence of the initiative.

The next activity is to assess the current level of performance of the relevant system functions, for each system component. This can be done by assessing against a desired level of performance using a scorecard approach (for example, a score ranging from 1 to 4, representing "far from the desired performance" to "desired performance"). Additional quantitative indicators can be used as evidence of the scoring (Table 5). Doing this consistently gives a holistic snapshot of the current status of a sector and an initial identification of the key issues where weaknesses are identified and improvements required.

Table 5: Example of a scorecard to assess system functions

Value chain system functions	Characteristics of the desirable state (a score of 4)	Current performance, scored 1–4	Supportive quantitative evidence
Value addition and distribution	The value chain is capable of creating sufficient value and fairly distributing this along the value chain to support viable businesses		• Margin distribution along the value chain • Producer share of export and consumer price • Living Income Reference Price gap
Value chain relationships and trading practices	The development of fair and efficient value chain relations. Key elements include transparency and traceability, fair pricing, and trading practices, and sufficient ownership for producers, at scale.		• Average duration of contracts • Occurrence of side selling • Number of trade arbitration cases

The system assessment can be finalized by identifying clusters of related functions that show underperformance, and that jointly determine underperformance of a systemic issue. This is relevant as the the performance of one function often depends on that of other functions. For example, the systemic issue of poor product quality can depend on the production practices, value chain incentives, and the public sector quality control system. It is recommended that the number and size of the clusters be limited to the most significant issues in order to avoid 'paralysis by analysis'.

Action 2 Broader context analysis

Next, one should look at how underperformance relates to the broader context. In most cases, there are external factors (within the broader context) that have a significant influence on the level of underperformance of the set of functions within the cluster. To identify these factors, look at factors in the broader context (political, economic, environmental, sociocultural and technological factors) and determine which of these are most influential. Being 'influential' can be determined by the relationship (direct or indirect) and the level of potential impact.

Once having determined external factors as being influential, one should determine whether these fall within the sphere of influence of the initiative. In that case, the system boundaries need to be adjusted and these factors become systemic issues that need to be addressed. For influential factors that fall outside the sphere of influence of the initiative, these can be considered as assumptions in a theory of change. They are important to have on the radar, as you may need to develop strategies to mitigate their risks or to capture the opportunities related to them.

Action 3 Root cause analysis

For each cluster, it will then be important to identify the root causes of underperformance. To do so, for defined systemic issues, define the root causes on the three levels of transformative change (see Figure 1). The starting point of the analysis is the identification of practices which lead to underperformance and would need to change to realize the desired level of performance. The next action is to identify the root causes which determine these practices. Root causes on level 1 (policies and resources directly influencing the practices) may be easiest to assess, while root causes on levels 2 and 3 (relationships, power dynamics, and mindsets) may be more difficult to identify, but they often play a crucial role. Each of the three levels of root causes should be assessed. Root causes are generally intertwined with and interact with each other, both in mutually reinforcing and counteracting ways. During this identification process, the desirable and current state of the root cause can also be described and scored (see step 1.2).

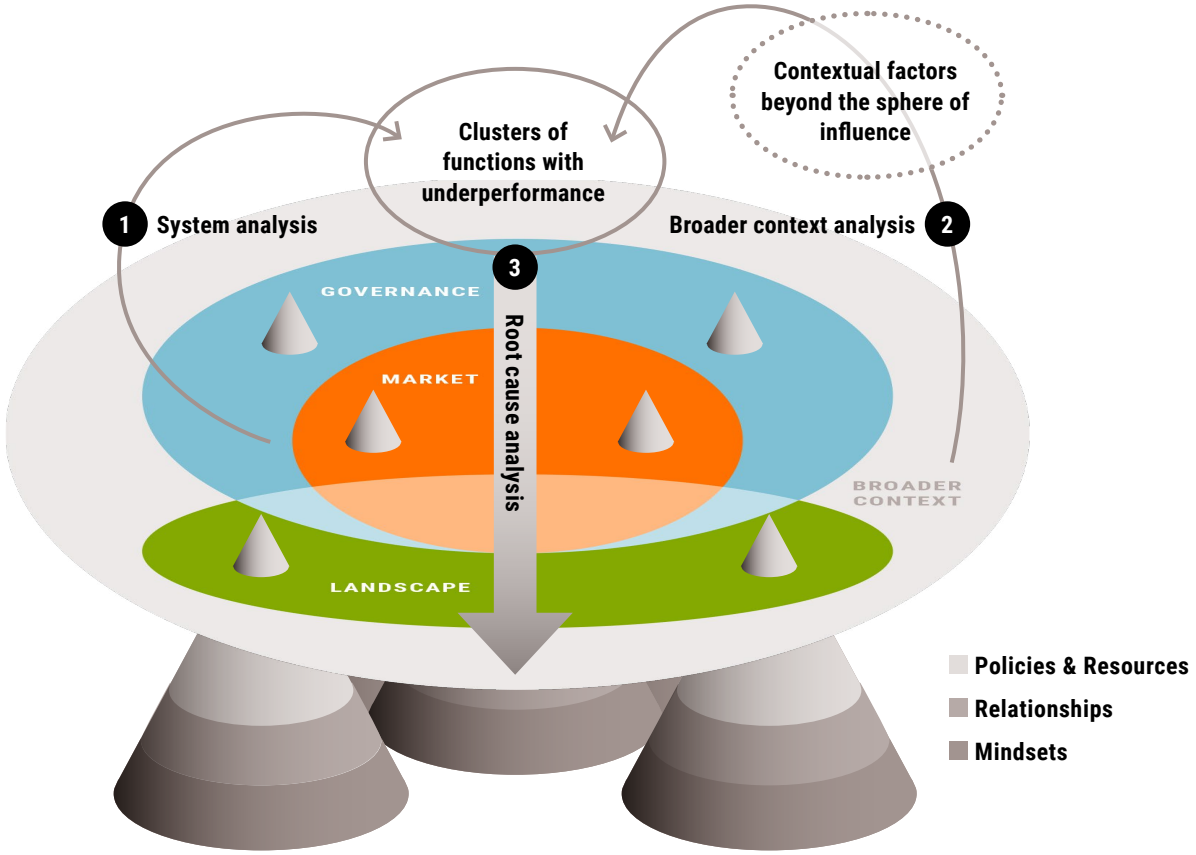


Figure 7: Identifying clusters of underperformance and the root causes of underperformance as part of sector diagnostics

Text box 6: ***Efficient and participatory approaches to sector diagnostics and vision development***

There are a number of different approaches to conducting sector diagnostics. It is best to combine desk research with a participatory approach. The desk research makes use of reports and statistics on sector performance and dynamics. The participatory approach uses key informant interviews, workshops, and focus group discussions, engaging the most relevant stakeholders of a sector, including producers, value chain actors, business service providers, research institutes, and representatives of the public sector and civil society. It may require explicit efforts to include voices of small-scale producers, workers, women, youth or other social groups in the diagnostics. In our experience, carrying out diagnostics can take two weeks of data collection and several weeks of preparation, analysis, validation, and reporting. The validation can also be used to define a sector vision and high-level strategic options.

Alternatively, system functions can be assessed in a workshop setting with sector experts. With proper preparation of the methodology and preselected system components and functions, this can be done efficiently. In our experience, it is possible to do this in a two-day workshop, which can include formulating a vision and high-level strategic options. The workshop can be followed by additional research into targeted issues that require more in-depth knowledge.

4. Step 2: Vision and strategy development

4.1 Sector vision

The basis for a sector transformation strategy should be a shared vision on the desired future performance of the sector. Defining a vision shared by the key stakeholders is an important step in ensuring a common understanding and guiding the strategy development process towards the desired overall sector performance, in line with the development goals of competitiveness, sustainability, and resilience. A sector vision describes the desired performance of the sector in, say, 10 or 15 years. A long-term vision can support more ambitious, innovative, or transformative goal setting.

A vision for transformative change should make explicit, for the whole sector or cluster of underperformance, the following points:

- The desired overall performance of the sector in terms of competitiveness, sustainability, and resilience, and more specifically of the relevant system components and functions (see Section 2.1).
- The desired performance of the three types of root causes identified (see Sections 2.3 and 2.4).
- The key actors responsible for the system components and functions, and their expected future relations, with specific attention to their expected future relationships and mindsets (see Chapter 3).

The vision should guide the strategy identification, but may over time be subject to change. As the sector transformation progresses, changing dynamics and new insights may require the vision to be adapted or refined.

4.2 Developing strategies for transformative change

There are numerous handbooks and guidelines for developing strategies for improving sector performance and sustainability impact.[5] So what is critical for developing strategies for transformative change? Strategies that aim at transformative change need to fulfill the following requirements.

1. **Vision-oriented:** Strategies need to contribute to the long-term vision and to the desired state of the system components and functions. The strategic priorities and type of actions should be aligned with long-term objectives.
2. **Integrated system perspective:** A sector transformation strategy recognizes the interdependencies between system components and functions (that is, the systems perspective). This reasoning follows the logic of identifying clusters of underperformance in the diagnostics phase.
3. **Truly transformative:** Strategies need to address the three levels of root causes of the systemic issues in order to achieve transformative change (that is, the root cause perspective). Strategies should also indicate which contextual factors are relevant, and which of these are assumptions. The strategy should describe how related risks can be mitigated and opportunities captured.

Strategies can be developed for a sector as a whole by addressing all relevant systemic issues, or only for (a) selected systemic issue(s), or for (a) cluster(s) of interrelated systemic issue(s) that show underperformance. In doing so, it can be useful to take one system component or systemic issue as starting point (often the most relevant one). Answering the following questions can support the process of strategy development.

- **Who and what needs to change if the vision set for this component is to be achieved?** List the specific systemic issues, functions, and root causes that need to change for this component, and the responsible actors for each of these. The identified actors may be existing ones or desired new actors, and may already have been defined as part of the vision. In defining the desired change, consider the changes for the actors on the three levels of root causes (policies and resources, relationships, and mindsets).

5] A strategy is defined as a plan of action designed to achieve a long-term or overall aim. It can include defining strategic priorities, and defining a type of action that is appropriate given priorities and context.

Text box 7: ***Typical actions for strategies to address systemic issues***

- **Convening**: building up or organizing multistakeholder coalitions, platforms, and dialogues
- **Dialogue**: aimed at creating commitment among decision-makers
- **Capacity building**: enhancing knowledge about one's own rights and abilities to take action
- **Lobby and advocacy**: influencing policy makers or other targeted actors
- **Empowerment**: strengthening individual and group potential in different levels of public debate and governance through the development of political consciousness
- **Action research**: an approach in which an action researcher and a client collaborate in diagnosing a problem and developing a solution
- **Media campaigns**: raising public awareness of urgent issues

- **What changes should the strategies bring about within this component?** Identify the strategies in this component which should result in the desired transformative change, and the relevant types of action. The strategies directly target the key actors in this component. Text box 7 presents a list of types of action that are particularly suitable as elements of strategies for addressing systemic issues.

- **What strategies in the other system components are needed to be successful in this component?** Identify any changes required in other system components, based on insights into the interrelations between system components, systemic issues, and the synergy needed to bring about real transformational change. For example, the transformation of the production component may require complementary strategies in the value chain, ecosystem, service, or policy and regulation component.

Once this exercise has been repeated for each relevant component, a long-list of targeted issues and actors and associated strategies is likely to appear. Most likely there will be duplication, overlap, and patterns, from which interrelations and key issues and strategies will emerge. For instance, insufficient access to finance for smallholders, and the need for changes in underlying financial models and mindsets in favor of smallholder producers, may emerge at several points (e.g., from clusters of food security, poverty, unsustainable land use, and poorly served domestic markets). The next step is to set priorities, to remove overlaps, and to solve any inconsistencies. The result should be an overview of strategies for clusters or the sector as a whole, with indication of the critical relationships and expected synergies.

Text box 8: ***Example of a vision and strategies to address a systemic issue for the production system component***

- The major systemic issues in the production system component have to do with the fact that farmers' incomes are below living incomes, and production practices are below optimum levels. Drought is increasingly becoming a limiting factor.
- The vision is that farmers earn a living income and produce what the markets desire taking into account social labor issues and environmental sustainability issues. Farmers are entrepreneurial, able to invest in more efficient and sustainable production practices and, over time, in larger farms.
- Strategies in the production system component
  Policies and resources (level 1):
  - Capacity building of farmers on desired productive and diverse farm systems with socially and environmentally friendly practices
  - Capacity building on financial literacy to promote entrepreneurship
  - Development of the business case for farm consolidation

  Relationships (level 2): none
  Mindsets (level 3):
  - Empowerment and raising awareness to create a sense of stewardship towards the environmental resource base, as a basis for adopting sustainable practices
- Strategies in other components:
  - Producer organization: Organization of farmers in cooperatives to promote access to services and markets (level 1); Promotion of accountable governance mechanisms within cooperatives (level 2); Promotion of a collaborative spirit and shared commitments among farmers (level 3)
  - Services: Promotion of service delivery models (e.g., training, inputs, finance) which can cater to different segments of farmers, including action research aimed at testing new models (level 1);
  - Value chains: promotion of responsible sourcing policies and practices by value chain actors to provide market incentives for good quality and environmentally sound products (level 1); promotion of equitable partnerships between smallholders and value-chain actors (level 2); promotion of a change of mindset by value chain actors regarding inclusive sourcing models to smallholders (level 3)
  - Policy and regulation: Capacity building of product quality control systems, ensuring land tenure, and lobbying for environmental regulations to be enforced (level 1)
  - Ecosystems: Establishment of a water catchment area governance platform for different ecosystem users to promote the availability and sustainable use of water (level 1); Empowerment of producers to give them a voice in water catchmentgovernance platform (level 2)

Finally, the strategies can be worked out in a roadmap and action plan. These should define activities, timelines, and the roles and responsibilities of individual stakeholders and partnerships. It should also define milestones and the rules that keeps everybody accountable in fulfilling their roles. Particularly important for strategies for sector transformation are the coordination and synergy that can be realized between activities on multiple levels and with multiple actors (that is, the system and the root-cause perspective). For instance, without a change in mindset towards child labor, activities to reduce this practice may lead to the undesirable criminalization of poor households.

Text box 9: ***Building a Theory of Change***

In support of strategy development, a theory of change (ToC) with impact pathways can be developed. A ToC shows visually the main components of a strategy and the expected unfolding of change towards the vision. Impact pathways show how the interventions, outputs, and outcomes lead to the expected impacts. They should also define the assumptions that may affect progress over time.

The strategies (or key impact pathways) can then be further worked out. They can be tailored to specific contexts and target groups, or adapted to the different phases of the innovation cycle. For example, one strategy could be to develop a proof of concept of a promising innovation, or to scale existing innovations to adoption by a larger number of actors.

4.3 An approach to prioritizing strategies across system spaces

In prioritizing strategies, there may be a further need to take into account certain system characteristics and the broader context. Some context factors might require implementing strategies in a different sequence or dropping certain strategies because they are not likely to be effective. To make such decisions, we look at the level of system spaces: which space should we take action in first? Where are the best opportunities, or at least the least constraints? And what spaces should be left aside for the time being?

To answer these questions, it is worth taking another look at the characteristics of a sector and its broader context (Figure 4). There are system characteristics and context factors which influence the likelihood of success of particular strategies. These can have a positive or negative effect on the effectiveness of strategies in a particular space. For example, when the goal is to enhance sustainable production at scale, the focus on value-chain driven strategies in the market space can be a good way to start, as value-chain actors may have some leverage over producers. However, this will also depend upon the way the market is organized. If the market is highly fragmented, with many different value-chain actors and end markets, it may be possible to begin with some value-chain actors at a certain location. However, it will then be hard to scale successful strategies across all market actors, and hence all producers, as there are simply too many and they are too diverse. This may lead to a decision to focus on strategies in the governance space—for instance, to promote public investments in service delivery with a higher potential to reach all producers.

Table 6 gives an overview of some important system characteristics and context factors that will help you to determine whether strategies in a particular system space are likely to succeed.[6] We refer to these system characteristics and context factors as 'conditions for systemic change strategies'. The conditions may show some overlap with systemic issues. In an ideal world, all these issues will be resolved over time. However, if the sector's conditions are severely limiting progress, it may make sense (at least initially) to put more emphasis on a particular space in order to improve the conditions for other strategies.

An enabling condition will increase the likelihood that working in this space will be effective. A disabling condition poses a limitation on what can be expected from working in the space. Some conditions may even be real showstoppers, with a negative effect that is difficult or impossible to overcome. As context will vary by sector, the different conditions should be weighed to make an overall combined judgement, including an appraisal of how this might affect the focus on spaces in the sector transformation strategy. Alternatively, strategies that aim to change a disabling condition into an enabling one could be considered. How possible this is will depend on your sphere of influence.

6] This table is adapted from ISEAL Alliance & Aidenvironment (2020), Choosing effective strategies to drive sustainability improvements: A decision-making framework for sustainability systems to take enabling conditions into account

For example, if market conditions are generally favorable, but the producers lack organization, then more regulatory approaches towards producers could be pursued as the leverage of value chain actors over producers is expected to be limited. Alternatively, the organization of producers could be prioritized so that value-chain driven strategies can become successful. Table 7 can support your thinking on how to deal with system characteristics and context factors in prioritizing strategies across system spaces and components.

Table 6: System characteristics and context factors as conditions for strategies to be successful in a particular system space (for more details, see Appendix I).

Landscape	Market	Governance
• Shared need for collaborative action (e.g., because sustainability issues are deeply rooted in community dynamics or landscape dynamics, or because capacity and investment gaps require collaborative action to reach scale and efficiency) • Stakeholder alignment and trust • Civic space to collaborate	• Awareness of and demand for sustainability • Business case for improvement (e.g., operational efficiencies, value capture, and market differentiation) • Capacities and access to services to improve • Organization and concentration of actors, and the leverage between them • Value chain transparency and stability • Market stability • Regulatory level playing field • Market infrastructure (e.g., communications and transportation)	• Public awareness of sustainability • Business case for decision-makers to change • Public sector leverage over market actors • Supportive policy frameworks • Institutional strength • Civic space for influencing

Table 7: Framework to support prioritizing strategies by considering disabling system characteristics and context factors.

	System characteristics or context factor			
	Disabling, but no showstopper		Showstopper	
Within sphere of influence	Can be addressed as a root cause by working in this space, alongside other strategies in this or other spaces.	**Example:** Work on sociocultural norms can be undertaken in the landscape space (e.g. through community engagement strategies on child labor monitoring), alongside introducing incentives for not using child labor in the market space.	Can be addressed, but may result in postponing other strategies in this space.	**Example:** Poor civic space does not allow stakeholders to come together, but there is room to change this. Before this has improved, it does not make sense to invest much in other strategies in the governance space.
Beyond sphere of influence	Cannot be addressed, but require strategies to (partly) mitigate its influence.	**Example:** price volatility cannot be avoided and hampers working in the market space, but strategies in the market or governance space can partly mitigate its potential impact.	Cannot be addressed, and another space will need to be focused on. It may also be necessary to reduce your ambitions of transforming this sector.	**Example:** very weak institutional strength and high levels of corruption. If it is impossible to change this, working in the governance space may be infeasible.

5. Step 3: Managing for transformation

5.1 Coordination

Work on sector transformation requires participation and ownership by the agencies that will be responsible for implementing the strategy. Participation by all the relevant stakeholders should start with the diagnostics and design phase, and continue during implementation. During implementation, it is particularly important to ensure that stakeholders continue to align and together learn the lessons that lead to the strategy being updated. Multistakeholder-based sector platforms or governing bodies can be established or supported to take up the facilitation or management role. They can create a space for dialogue and coordination by sector stakeholders. Sector platforms are generally voluntary and focused on alignment, learning, or the coordination of development efforts. It helps if platforms have a mandate from the government to play this role. A more formal set-up includes governing bodies, such as Commodity Boards. These are state-sanctioned and have a formal mandate to coordinate sectors, and possibly to manage markets. They can be placed within or at arm's length of the government. To a large extent, it is the participants who determine the success of these platforms or governing bodies. It is important to have the right mix of experts and decision-makers on board across all relevant stakeholders. Additional effort may be required to ensure participation by more vulnerable stakeholders (such as smallholders and workers).

Success factors for effective sector governance include the quality of facilitation. It can help to have a neutral and experienced facilitator to build the case for the initiative among potential stakeholders—someone understands the values and interests of the participants; facilitates dialogue, trust, and consensus building; and brings in expertise, and possibly funding, for the early activities.

A sector transformation process will benefit from balancing quick wins with long-term outcomes. Whereas long-term outcomes are often needed to address the systemic issues, quick wins can support ownership, build trust, and develop collaboration and commitment of the participants, while preventing initiatives being perceived as just talking shops.

Small wins are valuable in addressing complex or wicked systemic issues. Small wins are different from quick wins.[7] They refer to in-depth changes, including changes in routines, behavior, norms, and values, in line with the sector vision. Small wins have the potential to accumulate into a series that may ultimately result in transformative change. They are often intangible and difficult to fit in a linear change process. Rather than attacking big problems with big solutions, the approach could rather be one of creating meaningful improvement through a series of small, but significant, actions.

7] Catrien J.A.M, Termeer & Art Dewulf (2019) A small wins framework to overcome the evaluation paradox of governing wicked problems, Policy and Society, 38:2, 298–314

Sector transformation is a continuous and iterative process. The long-term ambitions and complex relationships between the system components and broader context make it unlikely that goals will be met by linear change processes. New sector dynamics will alter the relevance and effectiveness of the initial goals and strategies. This will require a continuous assessment of progress and changes within the system and its broader context, as well as corresponding adaptation of strategies, and possibly of the vision.

Sector transformation also requires sustained funding. Establishing a sector transformation initiative can be costly, mainly because of the staff time needed to convene and the initial activities, such as research and pilot activities. To support these costs, it can help to have an external independent donor who does not have a specific interest in any stakeholder. Over time, when participants have experienced the value of the initiative, they may also be willing to contribute more financially. However, changing policies and realizing systemic changes often requires several years. Quick wins are possible, but a typical four-year project timeframe is too short to change public and private policy environments to the degree that sectors can be said to have been transformed with significant and sustained impact. Four years may also be too short to create the commitment by national governments and industry to fully fund a sector transformation strategy. In these cases, some level of external co-funding remains critical to continue the initiative. In the long-run, the ability to generate revenues on a sustained and consistent basis on the sector level (such as though export levies) may be needed to remove the dependency on donors or lead firms.

5.2 Monitoring and learning

Once implementation has begun, monitoring using mixed methods should inform further alignment and strategy adaptation. Sector transformation is the process of solving all relevant systemic issues that undermine the competitiveness and sustainability of a sector as a whole. Measuring transformative change is not an easy task; some would say it is not possible, as many changes are qualitative or intangible, and many take time to appear and are generally less visible or implicit. However, our experiences show that it can be done by using mixed methods (quantitative and qualitative) to acquire useful insights with plausible levels of evidence.

The main elements of an approach to monitor systemic changes and sector transformation include:

- The starting point is the sector diagnostics, using the approach described above. This will allow you to define the priority systemic issues, associated system functions, and their interrelations, and to determine the root causes of the issues. For each systemic issue, change is expected at the level of system functions and root causes, that both need to be monitored.
- To assess the current level of performance of these systemic issues, there is need for indicators that can characterize the quality of each of these issues. Here use can be made of a combination of quantitative and qualitative indicators (Table 8). For qualitative indicators, scorecards can be developed with different levels of performance. In addition, it is recommended that a few priority indicators are monitored (for example, linked to the performance indicators on competitiveness and sustainability).
- Make use of specific impact pathways that show the process of expected changes from the outputs to outcomes and impact. For instance, this will link changes in the capacities and policies of individuals and organizations to changes in practices. The impact pathways should also highlight assumptions, as explained in the above steps. On assumptions, there may be a need to include indicators for monitoring if changes occur, as this may require adjustment of the strategy.
- Develop a measurement protocol describing how data on the quality of priority systemic issues is to be collected, at what frequency, and by whom; and how validation of the findings should take place. Data collection should ensure involvement of social groups (women, men, youth, disadvantaged stakeholders) and ensure they have the opportunity to validate the findings. This should include the conditions under which they are more likely to participate. Broad participation contributes to experience sharing and mutual learning.
- The contribution of interventions to changes can be assessed, at least indicatively, by relating the observed changes to interventions and other influencing factors; this will be a largely subjective assessment. It is not useful to even try to assess attribution.

For dedicated monitoring that supports accountability and learning, a participatory approach is essential. The monitoring can be performed by the dedicated staff of a sector transformation program, a government agency, or external consultants or researchers, but is best decided on and positioned within a multistakeholder or sector governance body. The use of qualitative indicators calls for a participatory approach, which will be instrumental in contributing to joint learning. This can be done through expert surveys or an expert workshop. In a workshop, experts are asked to score the current status of the functions in the components. Explicit attention may be needed to include the voices of vulnerable groups such as women and youth in these workshops. They also assess the changes since previous measurement, and indicate whether changes were a result of the interventions or external influences. The workshop is an opportunity to reassess the strategy and sector vision for the coming years.

The need for committed management is critical for continuous improvement based on evidence-based learning. To ensure that monitoring contributes to better strategies, it is crucial to embed this activity in a management system. This requires management buy-in and sufficient resources.

Table 8: ***Example of monitoring framework***

A monitoring framework could consist of a combination of qualitative perception scorecards and supportive quantitative evidence indicators, structured according to system components, functions and root causes.

System component	System functions	Qualitative indicator characteristics of the desirable state (a score of 4)	Current perception of performance, scored 1–4	Supportive quantitative evidence
Communities (improved governance by decentralized institutions)	To provide basic services and infrastructure	Communities have good access to water, health, nutrition, education, roads, markets, electricity, and communication		Percent of population with access to …
	To contribute to resolve conflicts	Conflicts are being resolved with support by local government		Number of outstanding conflicts
	To protect against terrorism	Communities feel safe and protected against terrorism		
	Root causes			
	Policies and resources	Local government has capacity and financial resources, and accountability mechanisms are in place, enabling civil society to hold local agencies accountable		Amount of funding available for public investments
	Relationships	There are collaboration platforms between local government and civil society, with decision-making based on equitable participation		Number of dialogues with the active participation of local authorities taking place
	Mindsets	Local government has the overall attitude of serving the citizens in their jurisdiction		

Text box 10: ***Case study of the Integrated Seed Sector Development Ethiopia***

The Integrated Seed Sector Development Ethiopia (IISD Ethiopia) aims to transform the Ethiopian seed sector. The program is implemented by the Wageningen Centre for Development Innovation (WCDI) and began in 2012. The transformation of the Ethiopian seed sector should improve female and male smallholder farmers' access to and use of quality seed of new, improved, and preferred varieties. The vision of ISSD Ethiopia is a vibrant, pluralistic, market-oriented seed sector in Ethiopia. During its implementation, it has introduced innovations in various components. Much attention has been directed to the system level and to underlying causes of systemic problems. However, many of these accomplishments were piecemeal. To create a truly transformational agenda, an inclusive process was begun in 2018 to develop a more holistic approach to seed sector development on the national level.

ISSD facilitated a series of national workshops to create a long-term vision and seed sector transformation agenda. The agenda involves strategic directions for the most crucial components in the sector. This agenda, endorsed by the State Minister of the Ministry of Agriculture, has become the basis for revisions of two critical documents governing the seed sector on seed policy and seed law. Since these initial results, WCDI has continued to support the federal Ministry and the regional Bureaus of Agriculture in implementing the agenda. It is developing a system to monitor the transformation of the seed sector.

ISSD's experience in Ethiopia offers various interesting lessons and key insights.

Embrace and unpack transformative change: To improve the performance of the seed sector as a whole, complementary action, and possibly disruptive change, is needed by many actors. ISSD Ethiopia did well to focus its narrative on systems, systemic change, and the root causes of problems in the seed sector, and to elevate its ambitions in this way. Developing the vision of tomorrow was a much better point of departure than dealing with the problems of today, as it raised the dialogue to a more strategic level. The use of simple concepts and frameworks, such as the sector transformation model, was instrumental in helping people understand the complex reality and in creating a common language.

Manage adaptively: The policy context in Ethiopia has been dynamic and one of ISSD's strengths was to be strategic and adaptive to unfolding contexts. To successfully facilitate a sector transformation process, it is necessary to grasp opportunities as they arrive.

Invest in social capital: The credibility of ISSD Ethiopia was of crucial importance in its acceptance as a facilitator of multistakeholder dialogue. Its eight years of presence in the country have shown its commitment. In addition, ISSD Ethiopia's policy dialogue on the regional and federal levels has made people familiar with the approach and the people. Collaboration with other partners has also led to this success. Finally, ISSD Ethiopia invested in committed and skillful staff, hiring some of the most recognized seed experts in the country. These people opened doors and drew audiences. These technical and institutional experts were complemented by a team of knowledgeable, enthusiastic, and creative facilitators.

"The sector transformation model was an important instrument in our facilitation of a stakeholder-owned roadmap for the development of the seed sector in Ethiopia."

Gareth Borman, coordinator of ISSD Ethiopia, Wageningen Centre for Development Innovation

Source: Borman, G.D., Hassena, M., Verhoosel, K.S. and Molenaar, J.W. (2020) Guiding sector transformation: the case of integrated seed sector development in Ethiopia. June 2020. Wageningen Centre for Development Innovation.

Appendix I: System characteristics and context factors

Section 4.4.3 presents a logic for prioritizing strategies across spaces. It refers to the system characteristics and context factors that are the conditions for strategies to be successful in a particular system space. The following overview describes the most important ones.[8]

Landscape

- Shared need for collaborative action: Whether relevant stakeholders feel a need to collaborate to solve sustainability challenges, and to influence key stakeholder. Such a need can exist in the case of:
- sustainability issues that are deeply rooted in community dynamics (such as child labor and gender inequality) or in landscape dynamics (as in the case of competing interests around different landscape users), and are therefore difficult to address by individual actors.
- capacity and investment gaps that cannot be closed by individual actors, but which require collaborative action to reach scale and efficiency
- Stakeholder alignment and trust: Whether stakeholders trust each other enough to enter into dialogue and pursue collaboration.
- Civic space to collaborate: whether all stakeholders are allowed to organize, participate, communicate, and collaborate with each other freely and without hindrance.

Market

- Awareness of and demand for sustainability: Whether there is a sense of urgency for sustainability improvements among producers, value-chain actors, and consumers, resulting in a market push or pull for sustainable products.
- Business case for improvement: Whether sustainability improvements can result in sustained benefits, such as operational efficiencies, market access and opportunities for value capture (e.g., through market differentiation).
- Capacities and access to services to improve: Whether producers, producer organizations, and value-chain actors have the capacities or access to services to implement sustainability improvements.
- Organization and concentration of actors, and the leverage between them: Whether producers are concentrated or organized to facilitate transfers of market incentives and support activities at scale, and whether value-chain actors are organized, concentrated, and have leverage over each producer.
- Value chain transparency and stability: Whether value chains are transparent, short, and stable, and whether producers and value-chain actors trust each other.
- Market stability: Whether structural (e.g., oversupply) and temporary (e.g., price volatility) market imbalances which can undermine investments in sustainability improvements are absent.
- Regulatory level playing field: Whether the institutional environment creates a level playing field for voluntary producer and supply chain improvement (this includes policy implementation and law enforcement).
- Market infrastructure: Whether there is the necessary transportation infrastructure and basic services for value-chain activities

Governance

- Public awareness of sustainability: Whether there is an awareness of or sense of urgency among key decision-makers in the public and private sector.
- Business case for decision-makers to change: Whether key decision-makers have a business case for solving sustainability challenges (such as commitments to existing policy frameworks and conventions; reputational and political risks could strengthen this business case).
- Public sector leverage over market actors: Whether the public sector has influence over consumers, producers, value-chain actors, and other stakeholders.
- Supportive policy frameworks: Whether existing policy frameworks support sector-specific policy development and implementation mechanisms.
- Institutional strength: Whether the actors have the leadership and human, and financial resources to respect their commitments (particularly without corruption, red tape, or rent-seeking).
- Civic space for influencing: Whether stakeholders, including civil society, are allowed to organize, participate, and communicate with each other freely and without hindrance. In doing so, they can affect the political and social structures around them.

The assessment of these system characteristics and context factors will have a direct impact on the strategic options open to you. Table 9 describes the possible implications of various combinations of enabling and disabling contexts in the three spaces.

8] The content of this appendix is adapted from ISEAL Alliance & Aidenvironment (2020), Choosing effective strategies to drive sustainability improvements: A decision-making framework for sustainability systems to take enabling conditions into account

Table 9: ***Example of monitoring framework***

Landscape context	Market context	Governance context	Landscape context
+	+	+	Good context to promote a coordinated sector transformation process with a strong focus on market-driven solutions. Landscape projects are relevant when sustainability issues require collaborative action at that level. Governance strategies focusses on creating alignment, a level playing field for market-based action and, if needed, precompetitive investments.
		-	Favors market-driven strategies with complementary landscape action where needed. Strong undermining dynamics in the governance context may need to be addressed.
-	+	+	Market-driven strategies can be pursued if supply chain actors have reach or leverage over producers. If not, emphasis on producer organization is needed. The public sector can play a role in enforcing the regulatory environment, capacity building, and other strategic investments.
		-	The role of the public sector in supporting producers will be limited, making the role of market actors more important. Market-driven collaborative strategies may support a level playing field and co-investment and risk-sharing. A sector dialogue with a strong market participation can raise awareness among public sector to engage more.
+	-	+	Focus on landscape and governance strategies with the aim of improving producer and value chain performance (such as through mandatory standards).
		-	Work on producer-centric approaches. Engage with front-runner value-chain actors so as to build proofs of concept of sustainability improvements, which may inspire the public sector and other value-chain actors to act.
-	-	+	Focus on strengthening the governance of the sector, and on feed this with proofs of concept from producer and value-chain best practice projects.
		-	Lower ambitions to reach scale; start best practice pilots with producers and value-chain actors, and raise awareness on sustainability issues.

+ = enabling (positive) **-** = disabling (negative)

Colophon

Molenaar, J.W. and Kessler, J.J. (2021). Sector transformation: A systems approach to transforming commodity sectors. Aidenvironment, Amsterdam.

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