Transforming Sectors

How to improve direction and practice in the transformation of agro-food sectors

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Preface

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Many of us strive to add value at every step of the journey our food takes, from the farm to our forks. This approach aligns us with locally-desired futures and contributes to global sustainable development goals. In reality, this journey is often a grim one. We know the direction in which food systems need to go - and we know that to do so we have to shift the underlying drivers that shape these systems - but we struggle to know HOW to do so.. Food systems transformation is a deep aspiration and a practical quandary.

One of the most tangible system levels at which we can work on food systems transformation is the agricultural sector. A rice, tomato, dairy, seed, or other sector is a food system in itself, with all the complex dynamics and drivers of national and global food systems. At the same time, it is a system many people recognise and can work with. Hence colleagues at Wageningen Centre for Development Innovation (WCDI), in extensive collaboration with partners within WUR and all over the world, have been working on effective ways to guide sector transformation for many years.

With this book they are taking our thinking about sector transformation to the next level. They have challenged themselves to answer the questions: "How can sector transformation go beyond an individual sector, and contribute to wider food systems goals around inclusion and planetary health? What kind of governance is needed for that, and how can we know we are moving the needle?"

Taking on these kind of questions requires a willingness to work in a deeply interdisciplinary manner, using the results of action research. This is the kind of 'knowledge in action' approach that WCDI is working on, in partnership with many stakeholders, particularly in the Global South. The authors of the current publication show what constructively happens when technical programmes are asked how they are 'leaving no one behind' in a generative conversation, and when impact evaluators are invited to assess complex, unpredictable, systems change. Bringing together an understanding of transition processes with value-based thinking in production and market systems has led to the necessary synergy to make seeming trade-offs become possible synergies.

This is the next level of challenge. If we really want sector transformation to "leave no one behind", we need to build this in as an achievable opportunity and let go of thinking in terms of trade-offs. Our planet earth needs to be given a place at the table in organising, managing and even governing sector transformation, instead of being ignored as an external driver. These things are possible, if we make the choice to govern the process of sector transformation to achieve such goals. And if we keep a strong finger on the pulse of our efforts, and adapt each step of the way.

Based on more than twenty years' experience in various agri-food sectors and contexts, this book shares critical choices that should, and can, be made to transform our food systems. As with all knowledge, it must be activated to be of real value. Hence WCDI links this kind of knowledge co-creation, with thinking how to use it in different contexts, and how to bring it into cutting-edge transformation projects as well as education for professionals and institutions.

We hope that you, as do we, read this with a smile of optimism that the futures we desire are not pipe dreams. This publication will help you along your way.

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Executive summary

How to improve direction and practice in the transformation of agro-food sectors

This document presents the learning and emergent insights of a group of advisors working at Wageningen Centre for Development Innovation (WCDI) in agro-food sector transformation. We have brought together different perspectives on sector transformation frameworks, strategies and practices in various programmes such as the horticulture, livestock and dairy, fisheries and seed sectors. This was done to respond to critiques that we could improve our strategies and practices in sector transformation, but also to address gaps and challenges that we ourselves observed and shared. In considering our practice when we contributed to sector transformation programmes, we were increasingly being asked, by ourselves and externally, to look beyond our primary focus on food security and nutrition.

We engaged in a process of co-creation (elaborated in four analytical sectoral perspectives), gained insights together, and documented reflections. This resulted in insights into the sectoral transformation perspectives of (i) governing sector transformation; (ii) managing for sustainable impact; (iii) inclusion; and (iv) environment and climate change. The process also allowed for an iterative joint reflection, bringing together deeper insights in sector transformation. This was not done in a singular way, but by informing and reinforcing between the four perspectives. Indeed, in this knowledge project we learned from sector transformation practice. We started by developing an historic overview, thus gaining understanding of how current directions and practice in sector transformation are a result of a process of several stages. Afterwards, we developed for each of the four perspectives a framework to analyse sector transformation and practice in various sector programmes. The selection of these four perspectives was based on what WCDI considered to be understudied drivers with a profound impact on sectors and food systems. The further deepening of each perspective through its own trajectory helped to advance our integrated food system and sector framework. Moreover, using these four perspectives enabled us to respond to key questions that emerged during the application of the integrated framework and during the implementation of sector programmes. As a whole, the cases we studied encompassed a wide variety of sector objectives, functions, and stakeholders in three continents. This provided a solid foundation for the analysis done across the four dimensions.

Using the governance perspective, we learnt that in moving forward we no longer should solely aim to promote the governance of a sector, but also aim to ensure that the processes of sector transformation themselves are governed. The perspective of strategizing, monitoring, evaluating, and learning provides insights that are critical elements for adaptive management of sector transformation, as sector transformation is an iterative and non-linear process. The inclusion perspective provides insights and reflection, as well as principles and practical recommendations for moving towards leaving nobody behind; this chapter illustrates why social justice has become a critical element in providing direction to the processes of sector transformation. Finally, the environment perspective, in a likewise manner, provides principles and guidance on how contributing to planetary health should become central, providing direction to transformation of sectors. The concluding step of the knowledge project and this publication brings the historical reflection and the insights and reflections on using the four perspectives together. The iterative process of the knowledge project allowed for a synthesis to gradually emerge and this was consolidated in a concluding workshop of which the outcomes are shared in the concluding chapter. Based on a synthesis of insights and reflections, we formulated a set of principles for advancing and providing direction to processes of sector transformation. In an effort to bring those principles together, and being inspired by the doughnut model for sustainable development, we combined social justice and planetary health more prominently in an emergent food system framework in which agro-food sectors are regenerative and distributive. A consequence is that 'food security and nutrition' is no longer positioned as central but as one of the multiple outcomes of the transformation of food system and its agro-food sectors.

The publication concludes with the elaboration of a set of next steps in which the WCDI team working in various programmes on sector transformation will engage, particularly in further promoting the use of the new insights and reflections gained in this knowledge project, together with our colleagues and partners, particularly in the Global South. As knowledge partner in larger food system and sector transformation programmes we intend to join agro-food sector transformation practitioners and use the new insights, learn, and engage in processes of co-creation. We hope to advance this new emerging agro-food sector transformation framework and its principles, while being critical and open for other questions we might encounter in this process.

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List of acronyms and abbreviations

3P	Policy, polity and politics (governance framework)
BME	Blue Marble Evaluation (framework for M&E)
BSP	Nepal Biogas Support Programme
CBD	Convention on Biological Diversity
COM-B	Capacity, motivation and behaviour (model of behaviour change)
DNCC	District Nutrition Coordination Committee
ENSP	Ethiopia-Netherlands Seed Partnership (programme)
FAFI	Fisheries and Aquaculture for Food Security in Indonesia (programme)
FANTA	Food and Nutrition Technical Assistance III (programme)
FAO	Food and Agriculture Organization of the United Nations
FNS	Food and nutrition security
FSN	Food security and nutrition (more recently used than FNS, given FAO's directions)
GHG	Greenhouse gas
GRAISEA	Gender Transformative and Responsible Agribusiness Investments in South-East Asia (programme)
HAED-Jo	Hydroponic Agriculture and Employment Development Project Jordan (programme)
HortiFresh	Commercial fruit and vegetable sector development in West Africa (programme)
HortiFuture	Programme towards a more inclusive and resilient horticulture sector for smallholder farmers in Jordan (programme)
HortInvest	Project investing in development of the horticultural sector in Rwanda (programme)
IAC	International Agriculture Centre (previous name of WCDI)
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
ISSD	Integrated Seed Sector Development (framework and various programmes)
IWM	Integrated water management (framework)
KIC	Jordan Knowledge and Innovation Centre
KIT	Royal Tropical Institute, the Netherlands
LNOB	Leave No One Behind (principle)
M&E	Monitoring and evaluation
M4SDI	Managing for sustainable development impact (framework)
MDG	Millennium Development Goal
MEA	Millennium Ecosystem Assessment
MSP	Multi-stakeholder process (framework)
MTR	Mid-term review
NGO	Non-government organisation
PME&L	Planning, monitoring, evaluation and learning (now usually referred to as SME&L)
PPP	Public-private partnerships
QDS	Quality declared seed
RAISE-FS	Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (programme)
SDG	Sustainable Development Goal
SME&L	Strategizing, monitoring, evaluation and learning (framework)
SNV	Netherlands Development Organisation
TIDE	Inclusive Dairy Enterprise programme, Uganda
ToC	Theory of Change
UN	United Nations
UNSDG	UN Sustainable Development Group
UNFSS	United Nations Food Systems Summit
USAID	United States Agency for International Development
WCDI	Wageningen Centre for Development Innovation (part of WUR)
WHO	World Health Organisation (United Nations)
WOAH	World Organisation for Animal Health (United Nations)
WUR	Wageningen University & Research

Contents

1. Setting the scene

Jan H.A.M. Brouwers, Walter S. de Boef and Yeray Saavedra Gonzalez

This introductory chapter explains sectoral thinking and practice and why this body of knowledge is relevant in food system transformation processes.

It provides an overview of the following: (i) the knowledge, insights and reflections on improving practice and directions in the transformation of agro-food sectors that are emerging in current publications; (ii) the history of sectoral thinking and practices, and the progressive insights that led to our current integrated framework of sector and food system transformation; and (iii) how the information in this book is structured.

Photo: CIAT/Juan Pablo Marin García

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1.1 Why are we interested in sector thinking?

The emergence of a vibrant agro-food sectoral practice

Over more than a decade, Wageningen Centre for Development Innovation (WCDI), part of Wageningen University & Research (WUR), has built a considerable body of applied knowledge on contributing through sector practice to promote inclusive food system transformation. As WCDI, we have translated this body of knowledge-in-action into various, often common, modalities for managing programmes, capacity development and policy support, targeting specific agro-food sectors. WCDI takes a sectoral approach in specific programmes with a focus on specific commodities or groups of commodities including horticulture, potato, dairy, forestry, fisheries, aquaculture, and sectoral tropical commodity programmes like sesame. WCDI takes a similar approach in its programmes targeting seed sector development. These specific agro-food sectors each have their socio-economic and environmental drivers that form a key part in the dynamics of the larger food system (Borman et al., 2022a).

This work has happened in an era where evidence is mounting that planetary boundaries are being exceeded and that despite decreasing average global poverty levels, well-being gaps across people have deepened. Therefore, increasingly we aim to place this sector knowledge-in-action work within a context of contributing to planetary health and just food systems.

Despite commendable achievements, up to now WCDI has made limited investments in developing a deeper scientific underpinning of its sector practice through action and systematic research. However, WCDI has always acknowledged that food system transformation and sector practice contributing to planetary health are complex and dynamic processes, which require a deep understanding of complexities, e.g. synergies and trade-offs of such transformation processes. Increased understanding of those complexities will contribute to the growing body of scientific insights and evidence to engage in ongoing scientific debates and contribute to practices in sector transformation contributing to food system and planetary health aims. We hope that the present publication will not only make a contribution to these debates, but even motivate towards making agro-food sector transformation more inclusive, just and sustainable, and ensuring that such transformation processes contribute to ensuring planetary health.

Who could be interested in this publication?

We hope that readers will include all those who want to make an impact through sectors promoting inclusive food system transformation and contributing to planetary health. This could include sector policymakers; those in the private sector who operate as sector partners because they see the added value of this; development practitioners; representatives from funding agencies and also our colleagues at WCDI and WUR. We also hope to inspire evaluators of sectoral programmes with new insights on how to assess and appreciate sectoral transformation processes.

1.2 Historical perspective and progressing insights

Below we present a concise historical overview of three decades of progressing insights on sectoral thinking with practices and lessons learned, combined with changing perspectives. Each summary of a stage in the development sectoral approach is combined with an example of a programme and the knowledge role, or roles, that WCDI took up.

Stage 1: From isolated projects towards a programmatic sectoral approach (1990-2000)

In the 90s, multilateral development agencies and especially the World Bank propagated a sectoral approach through which donors pulled together their efforts and funded government-driven sector programmes (Coullier and Dollar, 2004). Governments of low and middle income countries were in the driver's seat and formulated their own sectoral programmes, typically in sectors such as health, education, water, agriculture and the environment. At that time, the centre-left cabinet in the Netherlands supported this way of thinking. Under the development cooperation policy framed as the sectoral approach, the Dutch government, spearheaded by Minister Herfkens, sent finance through programme support, especially in sectors like health and education. Agriculture was no longer a priority for development cooperation in the Netherlands; the agricultural department within its Ministry of Development Cooperation was phased out and many agricultural experts left. With agriculture not being prioritized, WCDI (at that time called the International Agricultural Centre, or IAC), rarely became involved in sector programmes except for a few environment-focused programmes around fisheries, forestry and biodiversity. As such, WCDI's role as knowledge partner to the Ministry was to advise the fisheries, forestry and biodiversity departments,

conduct evaluations and implement training programmes. An example of a successful sectoral programme initiated in the 1990s was the biodigester programme in Nepal (see Box 1.1). However, it has to be noted that putting governments in the driver's seat rarely resulted in performing and sustainable sectors.

Stage 2: Towards multistakeholder processes within sectors (2005 - 2015)

For WCDI and its preceding entities, a key reflection was that addressing complex problems like poverty alleviation requires collaboration between different types of actors; it is not the sole responsibility of governments but also of the private sector, civil society, and actors like research and funding agencies. Insights from multi-stakeholder collaborations in sectoral development like the biodigester programme or the Australian Land Care Movement (Landcare Australia, 2023) prompted WCDI to design the multi-stakeholder process (MSP) framework. The MSP framework became a new approach that provided a body of knowledge for designing and facilitating partnerships. In its first version, institutional change and capacity development became two main methodological areas, combined with systemic thinking and societal learning. Sectoral thinking started to grow in technical areas such as in the seed sector. An example is that the course on seed technology transformed into a course on applying systems thinking and the MSP framework in the seed sector, while simultaneously WCDI developed a framework in programmes that started in 2008, referred to as Integrated Seed Sector Development (ISSD), which today continues to drive many activities supported by its development partners.

Stage 3: From value chains to sectors (2010 - 2020)

Subsequent to and distinct from the previous stage, new paradigms emerged in the development landscape: (a) strengthening value chains and (b) working with the private sector. In the climate of a series of neo-liberal governments, both within the Netherlands and elsewhere, value chains and a private-sector focus became dominant within development cooperation. At the same time, various programmes featuring collaboration between public- and private-sector actors like Aid for Trade were realized by the World Trade Organisation. The food crisis of 2008 also meant that several countries realized - or rediscovered - the importance of the agricultural sector. As a result WCDI started to work with partners in value chains that aimed for increased market access by small agricultural

Box 1.1: The biodigester (biogas) sector programme in Nepal

The Nepal Biogas Support (BSP) programme is a successful model of sectoral development cooperation, technological innovation, financial engineering and market development that helped to address social, economic, energy and environmental needs of the rural areas of Nepal. BSP represented a working partnership between the Government of Nepal, the Dutch Development Cooperation, the German Development Bank, the Agricultural Development Bank of Nepal, the Netherlands Development Organisation (SNV), the Gobar Gas Company, Nepal Bank Limited, Rastriya Banijya Bank, and the private sector of Nepal.

The principal objective of BSP was to promote the wide-scale use of biogas as a substitute for wood, agricultural residues, and animal dung. In former days, mainly kerosene and wood was used for cooking and lighting needs of rural households. From a few hundred plants (see picture for an example of a biodigester plant) at the start, by 2019 over 425,000 units had been built for Nepalese rural households (AEPC, 2019). Other benefits, as well as clean energy, have been the use of bio-slurry as fertilizer, and the reduction of forest degradation, women's workloads, and GHGs, with a reduction of 2.5 to 6 tonnes of CO_2-eq each year per household (SNV 2022).

By 2020, the Biogas Sector Partnership reported a dynamic sector in which various stakeholders from the private sector, academia, education, NGOs and government all collaborate (BSP, 2023). The sector has expanded from small-scale units for single households in rural areas to medium- and large-scale digesters in town neighbourhoods, the use of waste as feedstock, and the bottling of biogas. Meanwhile, the sector still faces challenges related to innovation, sustainability and financing. Many Nepalese biodigester experts have found employment as advisors elsewhere in South Asia and South-West Asia, and SNV has expanded the biodigester programme into Africa.

Photo 1: construction of a household biodigester in Nepal (credits SNV Nepal)

and food producers, for instance in the value chains of sesame in Ethiopia and cocoa in West Africa. In this period WCDI took on various new knowledge roles.

One of the first roles in this respect was to facilitate learning on institutional change and capacity development for Dutch embassies and the Ministry of Foreign Affairs. WCDI, together with KIT Royal Tropical Institute, managed the Support Programme for Institutional Change and Capacity Development (SPICAD). SPICAD supported some 20 Dutch embassies based in LMICs. These were still mainly working in sectoral programmes like health and education and wanted to strengthen the institutional and capacity components in these sectors of their development programmes. WCDI and KIT not only managed the programme, but also assured the knowledge component on institutional change and capacity development; ensured access for embassies to a pool of coaches (from some eight knowledge institutes in the Netherlands); and helped to document key learnings on institutional change and capacity development (see, for instance, Wigboldus, 2010). After the 2008 food crisis, the SPICAD programme was succeeded by a knowledge support role for embassies that had to quickly start new agricultural programmes; these were often focused on value chains but gradually also became focused on agricultural sectors. WCDI again facilitated this embassy support programme, which included access to a wide pool of experts. Flexibility and tailor-made support for embassies were essential ingredients, combined with supporting programme learning. Another knowledge role taken by WCDI, which emerged from 2008 onwards, was to combine experiences in working together with the private sector as a community of practice for inclusive business. An example of this work was the Seas of Change programme (see Box 1.2).

Box 1.2: The Seas of Change programme

This programme emerged in a context where innovation and growth in the agri-food sector focused on how to inclusively and sustainably scale, secure and distribute supplies.

The programme was built on the explosion of sustainable value chain initiatives from 2000 onwards. Business forums, along with many leading agri-food companies, had set forward-looking strategies and ambitious goals to make business inclusive. Inclusive business was seen as creating profitable business models and strategies that helped to drive economic opportunities for those who would otherwise be left behind: small-scale farmers, local agribusinesses and the rural unemployed. The main knowledge question was therefore how to achieve the scale of change needed. Knowledge learning questions were:

- Where are efforts resulting in sustained 'islands of success', and where are they adding up to a 'sea of change'?
- What inspirational examples are emerging from which ideas could be adapted, mutated or cross-pollinated?
- Where do those with experience see the opportunities for rapidly putting good ideas into practice on a larger scale?

Experience developed rapidly but the lessons and insights remained fragmented. *Seas of Change* provided the role of a knowledge manager capturing those lessons and insights.

For more background see WUR, 2016.

A similar knowledge-facilitation role taken by WCDI was the sharing and documentation of experiences with public-private partnerships (PPPs). The PPP lab was an action research and joint learning initiative to enhance the relevance, effectiveness and quality of Dutch-supported public-private partnerships, especially in food security and water programmes. The PPP Lab was commissioned by the Dutch Ministry of Foreign Affairs and was driven and implemented by a consortium of WCDI, the Partnerships Resource Centre of Erasmus University Rotterdam, Aqua for All, and SNV (WUR, 2018).

Stage 4: Towards integrated sector development (2015-2022)

Building on the first experiences with supporting value chains, it became clear that the enabling environment around value chains had to be included in the analysis and change trajectories. This meant engaging with new actors representing the wider parts of the value chain environment, like service delivery, research, media, financing, regulation and/or legislation. It became clear that national sectors can have structural weaknesses that undermine the performance of agriculture and value chains. These structural weaknesses can be seen as systemic failures, for instance in lacking legislature to allow women to access resources or in having no legislature to provide financial security for private-sector investments. Another often-observed systemic failure was low innovation and learning capacity in sectors. Another frequently-observed constraint in sectors was a limited availability of skilled and trained labour to perform the new tasks required to professionalize a sector.

Addressing underperforming sectors was no longer done by addressing symptoms, but by finding the systemic sector causes of underperformance and addressing these in an integrated manner.

In other words, building high-performing sectors required looking beyond the value chain. It also required improved governance and a coordinated approach amongst the sector actors to drive sector transformation. A performing sector requires shared governance with the government leading but not taking over (Guijt et al., 2021). We also learned that real transformation requires investments in innovation and transformation capabilities. Still another key insight was that scaling well-performing value chains requires a high-performing and sustainable sector.

To transform sectors, WCDI and its partners learned that integrated sectors require the linkage between three domains described by Molenaar and Kessler (2021) through their work with global commodity sectors such as cocoa and oil palm. The three domains are landscapes, markets and governance. Inserting landscapes within this integrated approach addressed the question of how to embed environmental sustainability as a commonality within all the processes of the transformation of sector of a global commodity. In this respect, it was recognized that environmental sustainability has both global and local, planetary-wide significance; so it should be a motivation for, and commonality within, the transformation of every sector. Follow-up questions that evolved, and remain critical today, include how this can be best organized in the public domain (governmental policies and regulations), and how much the private sector should be involved, whether for securing their business or because of the moral obligation of stewardship of the natural resources/landscapes which are a critical component of the sector.

The landscape domain is complementary to the markets domain. As both emerged as a new knowledge field in the same period, this resulted in a body of knowledge where viable production models are embedded in landscapes and communities (Van Oosten, 2021). Landscapes and markets need to be closely understood together within the governance domain of the sector; landscape approaches can be seen as approximately equivalent to approaches for the development of agro-food sectors, albeit through more environmental, sustainability, and spatial lenses.

The market domain in sector programmes required effective producer organisations to access services and markets; viable, scalable service delivery models to support farm improvement; and transparent, fair value chains to incentivize good performance. In addition, the governance domain became stronger, guided by questions such as how to organize as a sector. Two main insights emerged:(a) for sectors to have a conducive governance structure, conducive regulations and sector-wide investments are needed to create a level playing field and improve sector-wide performance; and (b) sector governance also requires coordination and alignment of investments in sustainability.

Stage 5: Focus on sector strategies, governance and monitoring (2020-2023)

WCDI took on the role of coaching and capacity strengthening of the key actors that drive sector development, or rather took on the process of enhancing performance - in this case, sector transformation. Often this started with helping to make a deep analysis of the current situation of the sector, including power issues, governance, politics, and finding engaged sector agents that represented different sector actors. This also involved helping to make a sector vision of what the transformed sector would be in the future, and strategizing on how this vision could be achieved. In its sector programmes, WCDI often provided input to design strategies which stimulated sector transformation towards higher levels of performance and sustainability (such as the development of national seed road maps, for which see De Boef and Thijssen, 2023).

WCDI in its programmes started helping sector champions to collaboratively address problems and opportunities and continue the transformation process towards a next level of sector performance. Additionally, WCDI started to help sector actors to monitor progress in improving sector performance targeted at selected priorities, by undertaking baselines and subsequent repeated measures. Emerging knowledge roles of WCDI focused on the governance of sectors, and helping sector partners to understand sectors as a system and see that integration between sector components is required. Box 1.3 gives an illustration on how WCDI took up this knowledge support role in the seed sector in Ethiopia.

Box 1.3: Integrated Seed Sector Development (ISSD) in Ethiopia

The ISSD approach aims to strengthen different seed systems on a national and continental scale. With this approach, WCDI supports the development of a vibrant, pluralistic, and market-oriented seed sector. Lack of access to quality seed is one of the most pressing issues hindering productivity increase. Addressing complex seed sector challenges results in better-performing seed sectors with increased access to quality seed of the varieties farmers prefer. This positively impacts food and nutrition security and economic development. The Integrated Seed Sector Development Programmes in Ethiopia (ISSD Ethiopia) operated through various phases to enhance the performance of the Ethiopian seed sector. WCDI coordinated the national effort to increase the availability and use of new, improved and farmer-preferred varieties of

seeds. With our partners in various regions of the country, WCDI strengthened and integrated seed systems, reaching over three and a half million farmers and increasing their access to and use of quality seed of improved varieties. The programmes included various aspects of capacity development among various groups of seed producers (domestic companies, seed producer cooperatives and farmer seed producers), but also allowed for addressing major systemic issues required for improving seed sector performance (e.g. government policies concerning seed distribution and marketing, seed quality assurance). Moreover, it strengthened the governance of the sector particularly at the regional level, including the capacity to identify challenges and engage through piloting, scaling and institutionalization in gradual policy and sector change processes. In Ethiopia ISSD has now evolved into the Ethiopia-Netherlands Seed Partnership (ENSP), which is still ongoing. However, WCDI has further applied and improved the ISSD approach in other countries like Myanmar and Uganda (WUR, 2023a).

Current stage 6: Focus on inclusive food systems and contributing to planetary health (2022-onwards)

In the programmes in which WCDI operated, questions were raised about how sectors and food systems can develop in more inclusive or more exclusive ways, such as more towards centralized ownership over large land, or towards being distributed over medium-sized farms which can provide sufficient income for poverty reduction. This is a choice of which sector and what pathway the transformation process pursues. So critical questions need to be addressed and responded on how inclusive sectors are, and what weight inclusion and equity have in transformation processes; that is, how strong the imperative is for just sectors within food systems. Similarly, as discussed above, questions about the weight of environmental sustainability have emerged. For instance, questions about the inclusion of climate resilience and biodiversity conservation when defining the direction of sector transformation. It then needs to be decided how this weight is translated into the ambition. For example, how to go about a transformation process in which agro-food sectors are transformed from *doing less harm* to being regenerative, nature-positive, and biodiversity-positive. More critical is the change in the transformation process so that it is no longer based on an extrinsic motivation (for instance, resulting from governmental rules and regulations, or from trying in a utilitarian way to secure the base of natural resources that would allow sector continuity), but moving beyond that to a basis where planetary health and stewardship are part of the transformation process in an intrinsic manner.

Looking back at this historical evolution in sectoral approaches, combined with the emerged and current calls for inserting inclusion and planetary health directing transformation of agro-food sectors, it can be concluded that sector transformation required a redirection towards a holistic approach with complementary strategies. Thus, from 2020 onwards, we see a clear trend moving towards sector transformation using a food systems approach (Borman et al., 2022a) - in today's context, placing the sectors and food systems in a more social and environmental context.

Given the multiple goals for transformation processes, a more adaptive approach was required for strategizing, monitoring, evaluation and learning. Additionally, we moved to a different ball game when we focused on supporting the development of sector governance. This is because we had to advance our understanding of, and practices in, the governance of sector transformation. Thus the practices for governance of transformation in emerging social and environmental directions needed new strategies, capacities, and tools.

In the rest of this introductory chapter, we will summarize our current sector thinking in terms of framework and concepts, showing the progression of insights and evidence from practice at the start of the 2020s; outline our emergent knowledge agenda on sectoral practices; and give an overview of the next chapters.

1.3 The sector framework and its linkage with food systems

Parallel to the increased use of the food system approach (Van Berkum et al., 2018), the sector framework has emerged as another application of systems thinking in WCDI's work. It builds upon a common and widely-used concept of the value chain, but takes a more holistic perspective that captures aspects of governance in addition to the value chain and market dynamics (Borman et al., 2022a).

The sector framework is applied by WCDI to guide the transformation of various individual agro-food sectors that cover a range of cash and food crops, livestock, and seed. The framework places these agro-food sectors within the larger context of policies, the environment, and people. Using this framework helps to build an understanding of sector dynamics and to subsequently design and direct efforts to transform them, so that they contribute to desired sector outcomes (Molenaar and Kessler, 2021).

The food system approach has emerged as a useful and powerful tool for showing the relationship between food policy priorities and themes. WUR prepared a report on

the food systems approach including visualizations of, and relationships between, food system components (Van Berkum et al., 2018). In this framework, sectors emerge as sub-systems that, like the larger food supply system, are influenced by socio-economic and environmental drivers. Particular subsets of the socio-economic and environmental drivers of the food system are relevant to these sectors in terms of relationships and feedback loops. WCDI has combined the food system approach with its sectoral framework, as visualized by Figure 1.1. Borman et al. (2022) provide a definition and attributes of activities, drivers and outcomes of an agro-food sector (Table 1.1).

When entering and engaging with sector actors in our sectoral programmes, we aim to conduct a participatory analysis using this integrated framework. The framework aims to connect practical activities with desired outcomes and assess the extent to which activities deliver these outcomes. Often interventions are needed; the analysis and reflection should identify actionable recommendations that initiate a transformation process. When designing actionable recommendations, the following principles are used as guidelines while operating in sector programmes:

- Take the future vision, not today's problems, as a point of departure.
- Transformation is a complex challenge requiring systems thinking.
- The complementarity of strategies is important for sector transformation.
- The aim is to create a sea of change rather than some islands of success.
- Relevance and prioritization will change according to each context.

As illustrated before, the integrated framework is increasingly used by WCDI and partners as an application of systems thinking. We help actors to see their sector as a system. In particular, we help them to see that they themselves are not only system actors but also system managers who can purposefully direct the system. The insights that WCDI and partners gain when they apply the framework help them to obtain joint insights and together make decisions about a sector, to change its dynamics; to innovate; and to increasingly steer the sector transformation process towards agreed desired outcomes.

This is also the result of a context wherein sectoral programmes by funding agencies report towards common food and nutrition indicators and other SDG goals. Our emergent knowledge roles now focus on tools, theories and concepts related to transformation of sectors within a context of development programmes; this is summarized in the next two sections (1.4 and 1.5) We also help to identify and support strategic change agents for sectoral transformation with new tools and frameworks like Theories of Transformation and Theories of Scaling. This is illustrated by Pro-ARIDES, a programme in which we partner in the Sahel (Box 1.4).

Box 1.4: Pro-ARIDES: transforming the agricultural sector in the Sahel

The Sudano-Sahelian zone is a geographic band with a short rainy season during which rainfall is low. However, the rainfall is sufficient to practice seasonal and off-season agriculture. The agro-ecological conditions of this arid and semi-arid zone also allow for the development of pastoralism, an agricultural economy that relies on extensive grazing. This sector provides the growing urban population with livelihoods, employment, and competitively priced meat. In Mali, Burkina Faso and Niger national and local availability of staple foods (millet, rice, sorghum, maize, beans, cowpeas, groundnuts) is in line with demand. However, it is unevenly distributed, and the Sudano-Sahelian zone is affected by severe food insecurity and chronic malnutrition. The Pro-ARIDES project is a ten-year project (2021-2030) designed to contribute to increased resilience, food security and household incomes for farmers and (agro)pastoralists. It is funded by the Dutch Ministry of Foreign Affairs and implemented by SNV, CARE-Netherlands, WUR and KIT. Inclusive value chains can provide decent incomes and strengthen the nutritional situation, and a trained youth workforce can drive transformation in the agricultural sector. Women can, with appropriate support and empowerment, assume key roles in value chain development. Creating decent jobs for these populations can help reduce existing tensions, reduce the attraction of violent extremist groups, improve stability in the region, and increase the resilience of populations to external shocks. Pro-ARIDES applies a holistic approach, working with agricultural and (agro)pastoral communities through effective decentralized institutions and organisations, for improved service delivery, natural resource and land management, and local economic development. Local institutions and organizations are strategic levers for achieving systemic change of the agricultural sector.

Source: Pro-ARIDES, 2023

Table 1.1: Definitions and attributes of domains, activities, drivers and outcomes of an agricultural sector

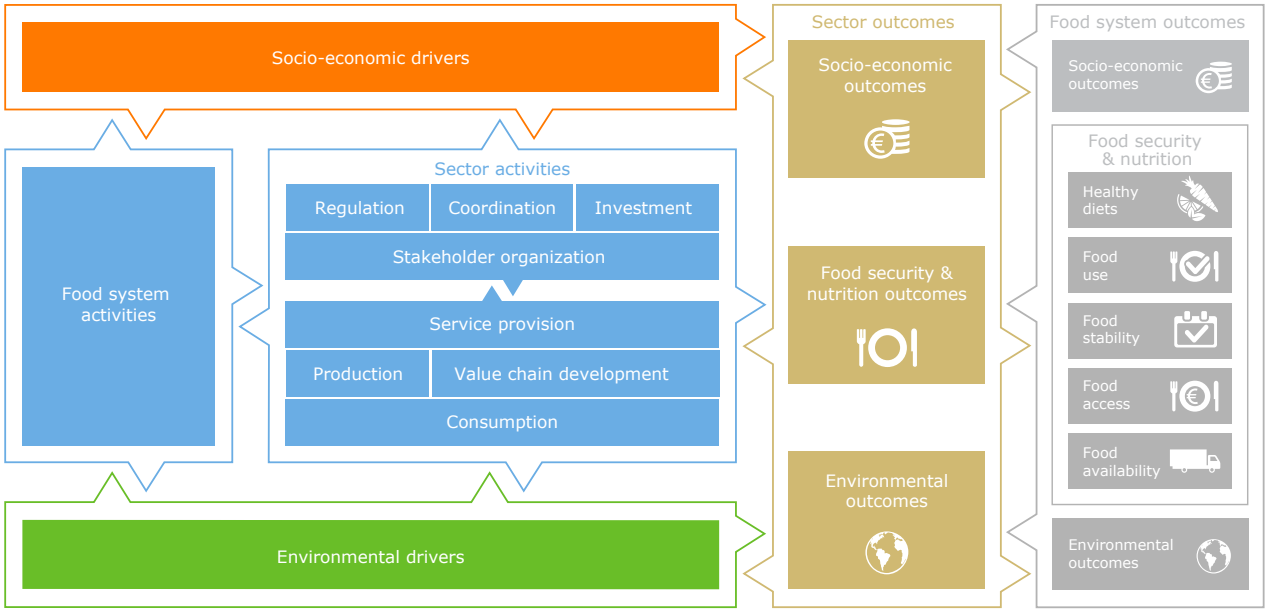
Activity	Definition	Attributes	Source
Production	Information about the farm or basic production unit, including what is produced and how	Farming system's viability, social inclusion, and resilience for a specific segment of the market	***A, B***
Value chain development	Details about market linkages like storage, trade, transport, processing, distribution and retail	Efficiency, transparency, traceability and fairness of trading practices, and dis/incentives for good practices	***A, B***
Service provision	Delivery models of services to stakeholders in the chain (like labour, advice, agro-inputs, machinery, transport, and finance)	Quality, feasibility and differentiation of service provision, and inclusiveness	***A, B***
Consumption	Promotion and utilization of products, and management of resultant waste, occurring at different proximities to the farm and at different levels of value addition	Consumer preferences, customs, knowledge, and behaviours in determining the suitability of products to their needs	***A, B***
Stakeholder organization	Organizations around producers (like cooperatives, federations); value chains (like partnerships and procurement); traders (like markets); and services (like service centres)	Effectiveness and inclusiveness of organizing stakeholders to improve their access to inputs, services and markets, empower individuals, and increase their collective agency	***A, B***
Regulation	Rules, systems and procedures governing the sector, including market management, policies, laws, regulations and directives; and informal norms, customs and power dynamics, including the way they structure the operations of stakeholders and their organizations	The implementation of policies and law enforcement; the coherence of regulations with stakeholder norms, customs and practices; the compliance of practices with regulations; and the effectiveness of regulations in achieving policy objectives	***A, B***
Coordination	Details about sector strategic frameworks (like sector plans and roadmaps) and forums (like sector platforms and governing agencies/ boards), and codes of conduct (like sector compacts)	Quality of dialogue and alignment of stakeholders operating at different levels, around a shared vision, strategy, standards and guidelines, in sector-wide monitoring and learning, and for advocacy	***A, B***
Investment	Mechanisms of the fiscus or non-state bodies to collect revenue (like taxes, duties, levies and fees), reinvest it in the sector (like subsidies and funds), and pull in additional private and public investments	Ability to capture a share of the value created by the sector and make strategic pre-competitive investments in research, education, development, regulation and governance, complemented with attractiveness for investment by the private sector, financial institutions and donors	***A, B***

Drivers	Definition	Attributes	Source
Socio-economic drivers	Understanding of the interplay between cultural, social and economic processes, including customs and traditions, structure and agency, power and political economy	Influence throughout the sector on the following: trends in market systems; policies, traditions and customs relating to, for instance, land tenure and land use; labour and food safety; science and technology; and the values of individuals	***A, B, C***
Environmental drivers	Biophysical environment, including climate, natural resources and ecosystems - such as land, soils, water, nutrients, biodiversity and energy - and the ecosystem services they provide	The sustainability of available, accessible, effective and efficient management, and the sustainability of the utilization of natural resources and ecosystem functions	***A, B, C, D, E***

Outcomes	Definition	Attributes	Source
Food security and nutrition	Impact of the sector on food security and nutrition through production, distribution and exchange	In/direct outcomes of improving healthy diets, food use, food stability, food accessibility and food availability	***A, B, C, F***
Socio-economic outcomes	Impact of the sector on welfare (health, wealth & wellbeing)	Benefit to (specific groups in) society and the economy	***A, B, C***
Environmental outcomes	Sustainability of natural resources and ecosystem management	The integrity of the biophysical environment that the sector depends upon and contributes to	***A, B, C***

Adapted from: Borman et al., 2022a; Sources adapted from:
A *Molenaar and Kessler, 2021;* ***B*** *Van Berkum et al., 2018;* ***C*** *Ericksen, 2008;*
D *Ingram, 2011;* ***E*** *Millennium Ecosystem, 2003;* ***F*** *FAO, 1996*

Figure 1.1: The integrated sector and food system framework



Source: Borman et al., 2022a

We should realize that even though the intention in sector transformations and associated programmes is to respond to and address multiple drivers, the practice of incorporating all drivers and outcomes is still in the early stage of development. As we will see in the analysis of the various sector programmes in this publication, they are to a large degree guided by food security and nutrition as primary goals, and in several cases include a strong private-sector development focus, guided by a linear development perspective increasing the overall performance of a specific sector. In the above-described stages four and five, WCDI sector programmes have increasingly started to use the integrated sector and food system framework. These emerging perspectives are part of the current project/publication challenge, particularly the degree to which social and environmental drivers and outcomes are considered in our strategies and practices for sector transformation. These perspectives give voice to the urgent need to reconfigure the framework guiding our strategies and practices.

1.4 Rationale for the current project and publication

WCDI's collective knowledge on sector transformation is laid out in the previously-mentioned peer-reviewed article "Putting food systems thinking into practice: Integrating agricultural sectors into a multi-level analytical framework" (Borman et al., 2022a). This article provides an outline of how sectors are being connected to food systems, with supporting evidence.

Nevertheless, a knowledge gap still exists when understanding what happens in the sector (stakeholders, functions, activities and outcomes) when the transformation process is primarily driven with a focus on sector and food systems outcomes (with the latter being driven largely by food security and nutrition), or when the focus on specific agro-food sector takes a more linear perspective towards the development of a sector.

In considering our practice when we contribute to sector transformation programmes, we are increasingly being asked - not only by ourselves but by partners, donors, and colleagues - to look beyond our primary focus on food security and nutrition.

How should we contribute towards (i) the inclusion of specific groups (that is, towards social and economic outcomes) or (ii) towards environmental outcomes? Additionally, in our practice within single- or multiple-sector programmes, we also need to address in a more intentional manner not only the governance of a sector, but how we work with multiple goals and complex processes on (iii) the governance of sector transformation. Combining this with the complexity of transformation processes, we need to (iv) strategize and measure sustainable impact, learn, and adapt during the processes of sector system transformation. Together, these are the considerations that constitute

the rationale for the current multidisciplinary internal knowledge project within WCDI, and contribute to the development of the next stage of directions and practices for sector transformation.

1.5 Methodology

The WCDI colleagues working on sector transformation in various sector and food system programmes started a collaboration in the current project with four other groups of WCDI colleagues that focus on other topics in their work, being (a) facilitating stakeholder collaboration; (b) managing for sustainable impact; (c) inclusion; and (d) environment and climate change. This multidisciplinary knowledge project resulted in this publication.

These four groups each developed a perspective to analyse, gain insights from, learn and reflect upon the framework used, the practice of sector transformation, and sector transformation programmes. The four perspectives are: (i) governance; (ii) strategizing, monitoring, evaluation and learning (SME&L), (iii) inclusion and (iv) environment.

We therefore had four groups that in some stages of the project worked in parallel on similar steps. For critical stages of the project they came together to share, reflect, and seek inspiration. The entire process was led by two process leaders - the WCDI staff members at that time leading the WCDI group responsible for sector transformation - who are also the editors of this publication.

At critical steps during the project, these two process leaders invited other colleagues, who were engaged in the practice of a sector as a whole (horticulture, seed, dairy and aquaculture) and managing sector transformation programmes, to share experiences and discuss their approaches and practice with the four groups conducting the research. Interactions between sector practitioners and the four groups were organized as a whole group and bilaterally. The entire process enabled guided deliberation, stocktaking, and consolidation of insights, documentation, evidence, and sensemaking for reflection. We provide an overview of the steps taken within the larger project to include what we refer to as the four trajectories:

Step 1: Defining tracks to deepen the understanding of sector transformation in food systems

The selection of perspectives was based on what WCDI considered to be understudied drivers with a profound impact on sectors and food systems. The further deepening of each perspective through its own trajectory helped to advance our integrated food system and sector framework (Figure 1.1). Moreover, they responded to key questions that emerged during the application of the integrated framework and during the implementing of sector programmes such as the horticulture, livestock and dairy, and seed sectors. Each trajectory was led by a team of at least three WCDI advisors. Most of these advisors were also members of WCDI groups already working on the same topics (facilitating stakeholder collaboration, managing for sustainable impact, inclusion, or environment and climate change). The overall process was coordinated and facilitated by the two editors of this publication.

Step 2: Composing frameworks for analysis

Each team developed its own analytical framework suited to drawing relevant insights from strategies and practice of sector transformation. Each team used and reflected upon various (sector) frameworks that were fit for the purpose of analysis.

Step 3: Selecting case studies for evidence building

Using a case study-based approach, each team selected a set of case studies. A case study was defined as a current or finalized sector programme in which WDCI took part or which was (mostly) WCDI-led. Each team selected no less than three finalized or ongoing

programmes. The cases were selected because of involvement of the team members, or upon indication by WCDI sector specialists.

Step 4: Interviewing sector specialists

In order to strengthen and complement the analysis of the cases, a number of WCDI sector specialists (dairy, aquaculture, horticulture, and seed) were interviewed about the design, implementation and monitoring of programmes using one of the lenses used to learn from and analyse sector practice. In this session, one member of the team from each trajectory conducted the interview, while members of teams on other trajectories only observed. This set-up allowed the various trajectory teams to learn from each other. They gained deeper insights by analysing differences and similarities in the strategies and practices of WCDI colleagues in sector transformation.

Step 5: Analysing the framework

Upon the joint interview, each team engaged in a literature study and further deepening their thoughts, forming an opinion but also refining and deepening the analytical framework. The teams processed this analysis each in a living document.

Step 6: Analysing programmes

Each team took their own approach in analysing WCDI and sector programmes. All teams conducted a joint interview with two colleagues working in the seed programmes in Ethiopia (see Box 1.3). Subsequently, some of the teams engaged in further discussions with colleagues and partners who had been responsible for implementing the programmes currently or in the past. Other teams did not engage in such interactive discussions but rather reviewed various programme documents to inform their analysis. Subsequently, based on a number of guiding questions as described in the analytical framework, the teams processed the outcomes of the analysis in the living documents, often zooming in on specific insights gained from analysing a specific programme or case study.

Step 7: Going from results to reflections

From the results gathered, each team was able to reflect and identify insights, emerging principles, and guidelines. The advances were processed in the living documents.

Step 8: Synthesis

A synthesis workshop was organized which representatives from the four teams joined, and in a structured process, we discussed the insights and reflections using the four perspectives on the frameworks, practices and strategies for sector transformation. This sharing was the foundation for a synthesis in which we identified insights and reflections on the practices, the framework and programmes, but also identified principles, input for a new framework, and topics for guidance. The outcomes of the synthesis workshop are the basis for chapter 7.

Step 9: Conclusion

In the synthesis workshop, each team went on to finalize their individual chapters. The synthesis chapter was composed jointly with all authors of the previous chapters. We also included a process of peer review of the entire publication before further conclusions.

1.6 Outline of the publication

The structure of the publication follows largely the process described above. The current introductory chapter first provides a general setting of the context of sector transformation, and outlines the emerging questions that became a rationale for the current project and publication; secondly, it introduces the project that shaped the publication. Chapters 2-5 describe the outcomes, outlining and analysing the directions and practices of sector transformation for the four perspectives of (i) governance; (ii) strategizing, monitoring, evaluation and learning (SME&L); (iii) inclusion; and (iv) environmental perspectives.

Each chapter highlights the foundation of its perspective and translates that into an analytical framework, which then is applied to gain insights on sector strategies / practices in programmes, emerging principles, and further guidance for future sector transformation work. Authors were given this generic structure with the freedom to use it as they saw fit. The publication concludes with a synthesis chapter which shares the outcomes of the synthesis workshop that included members of all teams; this provides insights on practice, strategies and programmes. The insights and reflections gained during the synthesis workshop provide inputs for developing five principles for improving future directions and practice in sector transformation. These principles are an input for the reconfiguration of the integrated framework. The emerging framework builds on the doughnut model (Raworth, 2017) in the way the transformation of agro-food sectors can be positioned within both global and local social and planetary boundaries. The synthesis chapter concludes with guidance on future direction and practice for advancing sector transformation.

2. How to improve governance

Brenda S. Namugumya, Herman Brouwer, Krista Kruft and Jan H.A.M. Brouwers

The chapter discusses different perspectives of sector governance based on our experiences in facilitating sustained development of various sectors over the past decade. We provide insights on how the governance of specific sectors has changed over time; the constellation of participating actors and changes over time; the mechanisms used to govern sectors; and the implications for sector transformation.

Photo: WUR

2.1 Introduction

The chapter discusses different perspectives of sector governance based on our experiences in facilitating sustained development of various sectors over the past decade. We provide insights on how the governance of specific sectors has changed over time; the constellation of participating actors and changes over time; the mechanisms used to govern sectors; and the implications for and contribution to sector transformation. Understanding the processes and practices in sector governance helps us to identify valuable strategies important for sector transformation, inclusion, and contribution to planetary health.

2.2 The concept of sector governance and governance for sector transformation

Sector governance is important to create the conducive environments crucial to facilitate transformative actions for sustained and responsible sector development. Sectors as systems are understood as presented by Borman et al. (2022a), with sector activities being driven through socio-economic and environmental drivers, being positioned within a wider food system, and producing sector outcomes (see Chapter 1).

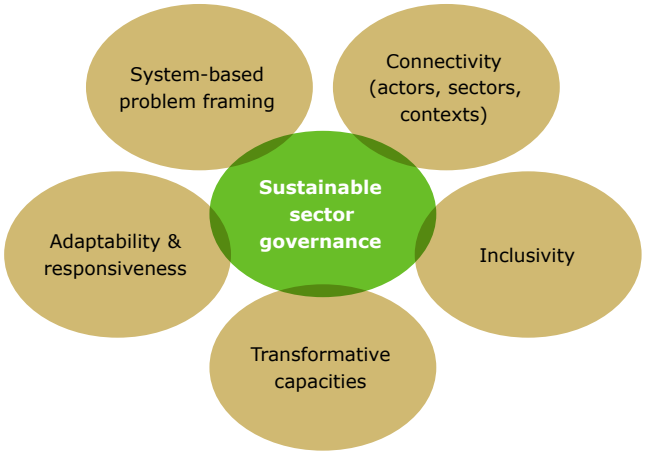
Sector governance refers to the legislations, structures and socio-economic and political processes that people and institutions use to create and shape their collective activities in a sector (Ansell and Torfing, 2021). It is about how sector actors organize themselves, their decision-making processes, and their practices in implementing those decisions. The sector actors, activities and outcomes are densely interconnected; the decisions in one sector function may fuel far-reaching consequences that could reshape overall sector operations. Hence, governing a sector and the transformation of a sector is a balancing act involving different stakeholders that are engaged in various complex transactions across the sector functions of production, value addition and distribution, service provision, utilization, stakeholder organization, regulation, coordination, and funding (Borman et al., 2022a; De Boef and Thijssen, 2023).

Sector governance is a process of continuous interaction and negotiation among different sector stakeholders who often have power asymmetries, divergent interests, motivations, knowledge and conflicting demands. Often reference is made to stakeholders involved in a sector. However, developing and governing a sector usually requires connecting with other actors not yet involved in sector activities, including its governance. These can, for instance, be representatives of banks for providing credits; media for stronger communication; representatives from youth, to make the sector more inclusive; or research for a tailor-made knowledge agenda that fits the learning needs of the sector. Representatives of stakeholders operating in the key sector functions not only have to think about their own stake (for instance, entrepreneurs might think about having a profitable business; and those in government might think about developing policy and monitoring food safety), but as a member of the sector governance team, they have an additional role to develop and pursue a common vision that enables sustained functionality and wellbeing of the entire sector (Ansell and Torfing, 2021, Borman et al., 2022b). They acknowledge and understand that the transboundary nature of their sector implies that one actor alone does not possess all the capacities critical to govern the sector and realize the sector ambitions. Transforming the sector requires actors' capacities at different operational and governance levels and beyond primary functions (such as financial institutions, media, research institutes) that may not be directly involved in the sector's core activities.

Sector governance also helps constituting stakeholders to identify a common ambition and the strategies to achieve their sector (transformation) vision, including their own contribution. These actors have varied goals, values, power and their solutions of how the sector needs to be developed can differ considerably. They often command different resources, knowledge, expertise and operate at different administrative scales and geographic boundaries. Fostering and maintaining the interest, effective coordination and participation of different sector stakeholders is a major governance challenge (Leeuwis et al., 2021; Leach et al., 2020).

One of WCDI's core contributions to inclusive food system transformation and planetary health is the articulation and documentation of sector governance strengthening. WCDI's sectoral practice refers here to sub-sectors within food systems. These agricultural sectors each have their socio-economic and environmental drivers that form a key part of the dynamics of the larger food system (Borman et al., 2022a).

Figure 2.1: Five main sector governance goals



Based on: Termeer et al., 2018

2.3 Methodology

In this section we explain the analytical framework, case selection, and data collection.

2.3.1 Analytical framework

We consider the five principles suggested by Termeer et al. (2018) as important in the holistic governance of systems, for example, governing sector transformation. These principles are *system-based problem framing* which conceptualizes synergies with regard to sector problems; *connectivity* across sectoral functions and to other systems and contexts that is necessary for cohesion, networking and resource mobilization; *inclusivity* and addressing power asymmetries; *adaptability and responsiveness* to uncertainties and volatile pressures; and *transformative capacities* to facilitate processes of change (see Figure 2.1).

Figure 2.2: The sector governance flower, with dimensions for policy, polity and politics (3P)

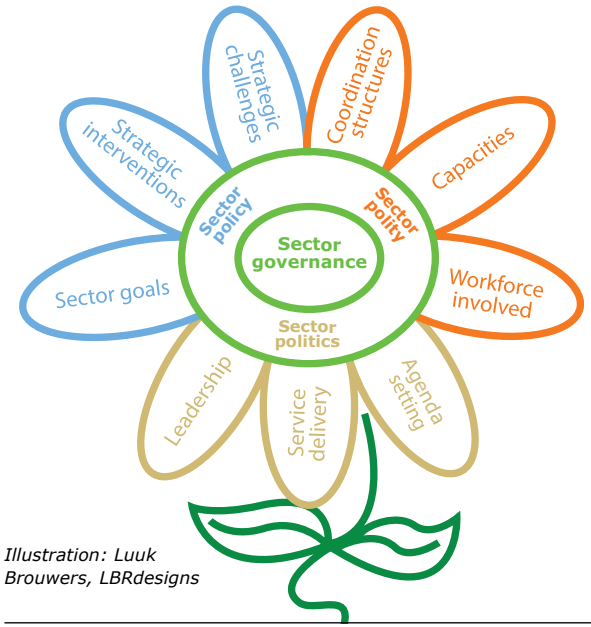


Illustration: Luuk Brouwers, LBRdesigns

These principles can also be observed in the policy, polity and politics lenses (3P) that are typical in governance literature (Knill and Tosun, 2012). Sector governance is shaped by various dynamic factors that can be examined through these three lenses: sector policy, sector polity and sector politics. Combining the five governance principles and the three perspectives provides a nuanced understanding of the processes, practices and outcomes observed in governing sector transformation.

Sector *policy* refers to the programmes, laws or regulations that result from the varied decision-making processes that shape the sector (Knill & Tosun, 2012). Policies highlight the framing of key challenges in a sector and clarify sector goals / related strategic interventions (policy instruments) (Howlett 2020; Howlett and Mukherjee, 2014). Sectors often have varied menus of interventions that can be categorized into funding for sector development, information collection and dissemination, and sector regulations / coordination mechanisms. There is a tendency for analyses to favour the formalized policies. However, sectors have varied informal, but normative, operations that require deeper exploration.

Sector *polity* concerns the structures adopted in governing, how sector functions are organized, and the composition of authorities that guide sector activities (Knill & Tosun, 2012). These may be formal or informal structures, operating in the public or private arenas and influencing sector functions at different governance levels (e.g. global, national, regional and/or local). Our analysis focuses on the structures adopted to govern the sector, the organization of administration, the characteristics of the workforce involved and the capacities applied in governing the sector.

Sector *politics* is about the interests and behaviours of the constellations of actors participating in sector development. Stakeholders have varied understandings of sector problems, divergent solutions, different resources and have power asymmetries. Power dynamics influence interactions and relations among sector actors, which can be compelling factors in determining to what extent long-term visions to transform the sector are realized (Anderson et al., 2019; Goodwill et al., 2021; Leach et al., 2020). We are interested in the leadership arrangements, how sector agendas emerge and are maintained, and participation in service delivery.

All three elements of sector governance may progress in varying degrees and can inform about the weaknesses and strengths of sector governance. We applied this analytical framework to examine and analyse governance processes and outcomes in sectors supported by WCDI (such as horticulture, livestock and dairy, and seed). Each of the three Ps (policy-polity-politics) has three dimensions, shown as petals in the governance flower. The *sector governance flower* can be used as a scan to observe which parts of the 3 Ps are present and which are weak or absent. The scan can also be carried out with sector governance practitioners and used as a joint reflection and agenda setting for strengthening capacity in governance. For the flower to blossom properly, all petals must mature (Figure 2.2).

2.3.2 Case selection and description

The cases examined were selected from WCDI programmes that focused on sector governance to facilitate transformation, and three cases, comprising two ongoing and one closed programme, were explored: integrated seed sector development (ISSD) Ethiopia (case 1, ongoing); nutrition sector governance in Uganda (case 2, closed); and a watershed programme in a Latin American country (case 3, ongoing).

2.3.3 Data collection

The information presented in the result section was obtained through interviews with colleagues that facilitated the programmes, and from desk reviews of literature about the presented case. We combined the five governance principles identified by Termeer et al. (2018) with the three governance lenses to develop questions (see Table 2.1) which offer different micro-perspectives or entry points for understanding sector governance processes and practices. Interviewees chose which of these perspectives would be useful to explore and understand. Only a selection could be explored, but this was in itself informative and provided overall meta-learning on the practice of understanding and strengthening sector governance in WCDI sector programmes. Interviews were closed with a joint reflection from the interviewer and interviewee, which was valuable and helped to find commonalities and emergent understanding on what this meant for our sector governance practice. The interviews were complemented with insights obtained from review of documents about the cases.

Table 2.1: Micro-perspectives for understanding sector governance and governing sector transformation: matrix of five governance principles against three governance perspectives

Governance principles	The 3P governance perspectives		
	Policy *(sector objectives & instrument*	**Polity** *(sector structures and norms)*	**Politics** *(sector actors & resources)*
System-based transparent sector approach	• What are the dominant frames used in the sector? • Is there more system-based understanding of the sector?	• What are the structures of the sector? • What organisation structures are in place to facilitate sector transformation?	• Which actors are involved in different parts of the sector and is there systemic leadership? • Are some sector actors missing?
	• To what extent are sector issues addressed in a systemic approach, while managing trade-offs and avoiding conflicts across different sector functions and objectives?	• Is there cohesion in the country between different sectors in terms of the sector structure and sector norms?	• Are emergent new political priorities of different sector actors addressed in a coherent way?
Inclusivity, including addressing power asymmetries	• Who participates in policy development and implementation in the sector and who does not?	• Where does the participation in sector policy development and implementation in the sector take place and who is not present?	• How does participation differ among stakeholders, and with what effects on sector transformation? • Why?
	• What policy instruments (information, authority & finance) and goals are prioritized to develop the sector?	• What norms exist that shape how power is exercised in the sector structures?	• What different roles, relationships and hierarchies of actors are present, and how do/did these influence (lack of) sector transformation?
Adaptiveness & responsiveness	• How are current policies and implementation frameworks helping (or hindering) the sector to be adaptive (policy change)?	• How do/did the structures and norms amplify certain voices in the sectors?	• How do different sector actors reflect and respond to the urgency for transforming the sector?
Connectivity within the sector and with other sectors	• In what ways are sector policies promoting connectivity across various operations, objectives, instruments?	• In what ways are the sector structures supporting connectivity within the sector and with other levels/sectors?	• What are the practices and interactions among actors that increase or decrease interlinkages within the sector (if any)?
Transformative capacities	• What capacities are prioritized to motivate transformative actions?	• What capacities are employed or needed in sectoral structures to facilitate shifts in policy processes? • How do the capacities differ in the formal and informal structures?	• What mechanisms are shaping the interactions and relations among sector actors?

2.4 Results

In this section the results of three WCDI sector programmes are presented and analysed using the sector governance framework presented in the methods section above.

2.4.1 Integrated Seed Sector Development (ISSD) - Ethiopia

The Integrated Seed Sector Development programme in Ethiopia (ISSD Ethiopia) operated for its second phase between 2016 and the end of 2020. In 2017, after years of investing in piloting innovations and facilitating dialogue at all administrative levels, ISSD Ethiopia generated enough support to pursue a sector-wide and inclusive strategy at national level (for more details on ISSD Ethiopia, see the case description in section 5.4.1). By 2021, the programme had evolved into the Ethiopia-Netherlands Seed Partnership (ENSP), which is still ongoing (WUR, 2023b; 2023c).

Insight 1: Vision should be combined with adaptive management

Sector governance is about ambition and applying adaptive management: 'We had to constantly change strategy as there is always a disconnect between vision and reality. This continuous adaptation of plans, tactics, and sometimes framing of the problem and potential solutions is necessary to achieve the vision' (quote Gareth Borman). Combining vision with the ability to adapt programme activities was a constant effort. 'Targets determine strategy but they have to be feasible. Ambition with targets needs a rationale, which requires attention. Who will you include and why? How to embed in political processes? Say why you do what you do, then it makes sense' (quote Gareth Borman).

Insight 2: Sector transformation should aim for gender equity

The ISSD Ethiopia programme had a relatively high level of female participation (about 30%) with programme staff challenging women to increase their ambitions and raising awareness among both men and women about gender dynamics and inequality. This can be seen as a direction for sector transformation. One strategy that worked was setting ambitious targets for female participation in the programme and helping stakeholders to look at this critically. This had to be done in a realistic way. For instance, during the selection of ten domestic seed businesses for support from ENSP, the team found only one female entrepreneur who met the criteria. In response, the strategy was adapted to invest in an entrepreneurship incubator for small-scale female-run businesses.

Insight 3: Interventions should be made at different administrative levels

In 2017, after years of investment at regional state level, ISSD Ethiopia generated enough support at national level to address the topic of seed sector governance. ENSP continues some of the efforts started by ISSD Ethiopia. However, regional seed core groups (multistakeholder partnerships), which were instrumental in the collaborative governance of the seed sector at regional state level, are no longer functional. It is still a big problem to really govern the sector, as illustrated by the weak linkages with regions.

Insight 4: Policies, polity, and politics should be aligned

Sector policies: the Ethiopian seed sector policy is well covered and presence of policies is not a problem. The main problem is rather in the implementation of the policies. The Ethiopian seed sector polity is difficult and not yet committing to sustainable practices. There is an advocacy coalition/advisory think tank on long term sector transformation, but government support is limited and lacking capacity. Government realized too late that it should put funding into a seed sector coordinating structure. There should be capable leadership of seed sector transformation and the current ENSP programme is still pushing for this.

Sector politics: there is a strong focus on attaining short term results (x amount of tonnes of seed next year) and seed is a political commodity. There is less interest from the national political arena in understanding and driving the systemic changes needed in the seed sector. The programme team, therefore, still has an agenda to stimulate more strategic leadership of the seed sector and to influence the political arena to put seed higher on the agenda. This goes together with changing the culture of sector governance, which is still to centralize decision-making and control. In Ethiopia, formal authority is very much an important source of power, which in agriculture resides with government and to a large extent research as well. Research is widely seen as the main catalyst for agricultural transformation, while the seed industry is not taken as seriously. As such, the private sector has to become more autonomous, combined with more meaningful interaction with government. Overall it can be observed that policy-polity-politics does not align.

Insight 5: Learning needs an enabling environment

The programme created spaces and opportunities to bring in regional thinking at national level, trying to get regions involved in the national seed advisory group. Unfortunately the state Minister of Agriculture at the time declined to allow regional participation in the national seed advisory group. Towards the end of ISSD Ethiopia, the political landscape worsened and government focus was upon resolving political turmoil. This left little attention to reflection and learning about seed sector governance. Spaces and moments for reflection have the potential to be part of a stronger collaborative governance culture.
Learning from other seed sector cases elsewhere in

the world was very useful. The national seed advisors are now able to practice a systemic and strategic way of thinking that covers the whole sector development. However, this is not yet in place in the Ministry of Agriculture. The programme team found it difficult to fit great ideas into a national government framework for policy and implementation. Over the past decade, the ISSD team explored different structures, including units based within the ministry and regional state bureaus of agriculture, to foster learning, but these attempts have not been institutionalized. There is still need for a culture of critical thinking and sense-making. Another problem is that there is high turnover of staff in the ministry and a lack of continuity as a result. There are huge disincentives for people to stay within ministries compared to the more exciting careers outside government.

Insight 6: We should aim to understand the root cause of problems

'We learned a lot about seed sector governance. In general there was no strong governance thinking and practice in the Ethiopian seed sector at the start of ISSD Ethiopia. It also depends on the attention the government gives to the seed sector. They framed the sector more in terms of seed production, not working on the bigger picture with a long-term sector vision' (quote Mohammed Hassena). Government simply wants the producers to produce sufficient amounts of seed, and that's the extent of it. Nevertheless, producers face many challenges that could be solved by better governance. Resolving these challenges requires stakeholders to work more strongly together combined with institutional changes.

Insight 7: Power is not just material, but ideational as well

The paper produced by Borman et al. (2022b) shares two important insights: (i) the importance of creating collaborative governance arenas (regional seed core groups); and (ii) ideational resources of a non-state actor like ISSD as a much-needed counterweight to political authority in a country like Ethiopia. As for ideational resources, ISSD was great in championing ideas and bringing them into the discussions. This changed the narrative on seeds and people's mindsets on what the urgency really is. 'We now have a new generation of seed sector experts that are more systems thinkers. Strategy does tacitly include what we learned in the past in ISSD Ethiopia. We now mobilize power of formal authority and use ideation as a strong counterweight to formal power' (quote Gareth Borman).

Insight 8: It is important to mobilize formal authority

'The existence of a functional advisory group was a way to bring an informal group into a formal system. And we now have a critical group of seed sector experts with close connections to politics that have been involved from the start' (quote Mohammed Hassena). This is an important asset and capacity for the governance of the Ethiopian seed sector.

Insight 9: It is important to use and understand precise terms

The two terms *sector transition* and *sector transformation* are both used in the work of ISSD Ethiopia. The team also sees subtle differences between the terms *transformation* and *system transition*, such as more emphasis in the second term on the process unfolding through time, while the former term denotes more of a scale or depth of change. ISSD Ethiopia therefore prefers the more precise term of *system transition* than *transition* and also sometimes uses the term *transformation* to emphasize depth of outcome when more nuanced language is required. Certain innovations in ISSD Ethiopia were transformational, like the introduction of the local seed business model and direct seed marketing.

2.4.2 Integrated watershed management in a Latin American country

This case describes the sector of integrated watershed management (IWM) with regional planning in a region/administrative unit of a Latin American country. The region is a very fertile area which produces large volumes of cereals and soy. The region is progressively dealing with problems of floods and droughts, aggravated by climate change. The policy governing the region, in spite of its challenges, focuses on stimulating productivity. As the case is ongoing information is anonymized to protect interviewees.

For decades the provincial government had been working on technical solutions to manage the flood and drought challenges. It became quite clear, however, that technical solutions did not offer a response for the entire region: if one area was drained, another part was flooded. There was an urgent need for stakeholders to work together and identify trade-offs to ensure that everyone in the region would benefit from an integrated sectoral solution. WCDI was requested by a Dutch supporting agency to provide a multi-stakeholder partnership (MSP) training and coaching to support collaboration in the region that complemented the technical objectives with a process-oriented objective. WCDI supported a core group of national facilitators, who served as interlocutors between the government and farmers' associations and other sector actors.

Insight 1: Understanding ineffective sector policy in IWM at regional level

The programme started at the end of 2021. In terms of policies, there was a focus on economic development and productivity in the region despite the socio-economic and ecological/biophysical problems. The importance of climate resilience increased as a result of yet another series of floods and droughts in 2022. As of early 2023 the same policies continue to be applied and it will take time before shifts are made in the overarching policy goals.

The questions (Table 2.1), 'Who participates in policy development and implementation in the sector and who does not? and Where does the participation in sector policy development and implementation in the sector takes place and who is not present?' are crucial to understand the current sectoral governance practices. Another complexity in inclusive participation was the fact that many current land users (farmers) do not own the land they are making use of. Any change related to land utilisation needed to be agreed on by the landowners, who were fragmented, not represented by a single organ, and not linked to policymakers. The fact that land users were not landowners incapacitated spatial planning of the area and rendered many economic incentives powerless.

It was clear that solving the challenge of the floods required a multi-disciplinary approach as it affected many stakeholders in the region differently. For example, the floods impeded students in reaching their classes which was a concern for teachers, while livestock owners were concerned about the loss of cattle as a result of contaminated water. The area's current policy focuses mostly on productivity and agro-economic development and does not reflect the diverse needs of the area's stakeholders nor address the multiple levels of the challenges that the area is facing. Another group excluded from policy development were knowledge workers, despite being national experts. As a result, stakeholders wanted to have access to policymakers to make their point.

Insight 2: Understanding regional sector polity in the IWM sector

There were all types of institutional structures like farmer associations, research institutes with various expertise, a provincial government team on integrated river basin/watershed management, and a Dutch agency for research on watershed management. The management committee overseeing the watershed area now also oversees adjacent regions connected to the watershed area; dialogue with other regions has been launched but collaboration is not yet functional. The entity's governance remains unclear to many stakeholders in the region as it did not receive a clear mandate from national level. There is a formal legal entity set up to govern the watershed area, consisting of politicians and advised by technical advisors and MSP facilitators. However, it excludes other actors like landowners, farmers and civil society. The governance structures and decision-making mechanisms underlying this new legal entity are not clear for most stakeholders and not fully developed.

There was weak interconnectivity between the sector structures. Everyone worked within their own mandate but did not have the mandate to connect with others. Even an exchange between diverse groups was not easy to bring about. There was a general lack of trust and institutional jealousy, which resulted in outright antagonistic relationships. As a result disagreements on items such as communication strategies grew at an alarming rate.

One positive development of the creation of an MSP facilitating team was that the work of technical modellers was redesigned into clear and useful visuals and models that clarified scenarios and options for interventions. Many farmers and political decision-makers thought that installing drainage canals in the entire watershed were the solution to the flooding problems. However, visuals produced by the modellers showed clearly to farmers and politicians that this intervention would not generate the desired results. Modellers appreciated the opportunity to share their work with field-knowledgeable stakeholders living in the area. From these interactions a set of concrete options and scenarios were generated that helped to consider the potential impact of different interventions (i.e. working with rotation of crops and intensification of land use). These scenarios were very helpful for politicians to decide on policy and investment.

Insight 3: Understanding regional sector politics in IWM

There were formal leaders who were driving the process and informal leaders, such as the MSP facilitators, assigned by the programme but without a mandate or decision-making power. The MSP facilitators were assisted and coached to facilitate the process and engage with a variety of stakeholders in constructive dialogues. However, as it turned out, the MSP facilitators did not have the mandate to guide the complex negotiations nor did they have any decision-making power or real influence. They did shake up the situation and urged for change but did not have the power to change the situation. Continuing the work is still a priority but the long term vision, planning, budgeting, and clarity of roles of various stakeholders is lacking. The initiative is top-down driven by formal leadership from the region with a focus on public investments in infrastructure (drainage). It is also not clear which government level (regional or national level) is responsible for what. The Dutch agency that was supporting this trajectory has decided that they will only co-invest in a second phase of the programme, and this only when local ownership and leadership is shown. This means that building consensus across

different stakeholder groups is required. However, for the moment no-one has taken on this task. Assistance has been offered in order to help with further developments of the proposal and to support networking to pitch the proposal to other donors.

Insight 4: Governance should aim for knowledge exchange and cross-sectoral collaboration

The programme did identify actors for participation, but this did not always mean they were included in the decision-making process, or that they claimed or were given a co-decision role. Besides vertical differences between local, provincial and national actors, there were also horizontal differences of opinion. For example, the National Agricultural Research Institute, that contributed with their experts to the development of a watershed modelling tool, at one stage was challenged by an association of farmers who were already testing the effects of different agricultural practices on the water levels within a micro catchment, having tacit knowledge. This exchange challenged the scientific knowledge applied by the technical experts and modellers. Although this situation had the potential to start an exchange of knowledge and a co-creation of solutions, no concrete steps were taken to bring together different types of knowledge and innovations. This begs the question: what role could the local MSP facilitators have played to support cross-sectoral collaboration? The power dynamics on the ground impeded the MSP facilitators in connecting to these different groups. They were strong in analysing but hesitated to engage in facilitation as they were caught up in power dynamics.

Insight 5: Stimulating collaborative leadership for effective sectoral governance

WCDI played the role of trainer, coach, and critical sparring partner. However, this role has its limits especially if it is online and there is a general lack of clarity between stakeholders. Without having a formal leadership role in the programme one stays outside the sphere of influence. If institutional incentives to collaborate and co-create across sectors do not work, the role of an informal leader can be quite powerful, especially if the leader becomes a gravitational pull and starts to attract a critical mass of other stakeholders. This begs the question: How can WCDI engage in nurturing stakeholders' inherent leadership qualities for sector governance?

It is indeed important to continuously look at the leadership role. In the early days, the programme enjoyed the support of a strong governmental partner. After this partner moved on to a different role, the initiative was supported by a successor who proved to be a good process facilitator, but not an inspirational leader who could bring people together. Other more informal leaders did not pick up the leadership role, even after being nudged by WCDI, as they all had their vested interests in the power structures in the area. In the end, someone within the group did take up the role and created a strong group that was able to link with powerful players at national level. However, the approach taken was to convince those powerful players of the group's ideas, and not using their influence to build a bottom-up movement. There is a clear recognition that processes of this nature take time and we need to remain aware that this programme had only a one-year trajectory.

Insight 6: Our learning agenda needs to become more knowledgeable and engage in transformation

As a knowledge institute, WCDI and partners are working on transformation processes. The question therefore is: how can we better advise on food system (and sector) governance transformation? Can we identify more tools to streamline governance in transformation processes? How can we use the three governance perspectives (policy, polity and politics) to unpack roles, dynamics, and hurdles, and identify effective tools, approaches, guidelines and mechanisms? Using our practice-based experience, can we distil a series of good practices and guiding lessons across countries and cultures? Can these be translated into overarching principles that can be applied to governance in transformation processes?

These questions also link to our internal learning question on collaborative system governance: What kinds of effective governance practices are needed for system transformation? How can we collect evidence and practices on this question? As a knowledge institute we strengthen the capacities and support the learning of others. How can we extend this to internal learning as well? How can we give more consideration to the time element of transformation processes? For example, before accepting an assignment or programme role, we may want to ensure we have enough time to pass through the *groan zone* of any group process (going through the *storming* stage and arrive in the *norming and performing* stage). If not, we may choose not to get involved. Let's challenge ourselves: how can we become more knowledgeable two years from now?

2.4.3 Strengthening governance of the nutrition sector - Uganda

In 2014, the Government of Uganda adopted a multi-sectoral framework for action, the Uganda Nutrition Action Plan, to address the complexities of improving the nutrition situation. The mandate to coordinate implementation was allocated to different ministries and District Nutrition Coordination Committees (DNCCs). However, the presence of the Action Plan was not accompanied by tangible action at a decentralized level. The DNCCs were viewed as parallel structures without formal integration into existing governance structures, their roles and benchmarks for performance were ambiguous, and there were

inconsistencies in the support provided and how they fulfilled the multisectoral mandate. The Office of the Prime Minister and the Ministry of Local Government, in collaboration with the Food and Nutrition Technical Assistance III programme (FANTA, funded by USAID) and WCDI, embarked on a trajectory to strengthen nutrition leadership and governance at national and district levels. This included strengthening the districts' capacity to plan, budget, mobilize resources, and monitor nutrition activities (FANTA, 2018).

Based on the learning from this initiative, an actionable framework for strengthening nutrition governance at decentralized level was developed (Figure 2.3). This approach to strengthen nutrition governance was adopted by the Office of the Prime Minister by 2018 to train all Ugandan districts on multisector nutrition planning and implementation.

Insight 1: The role of WCDI in helping the nutrition sector

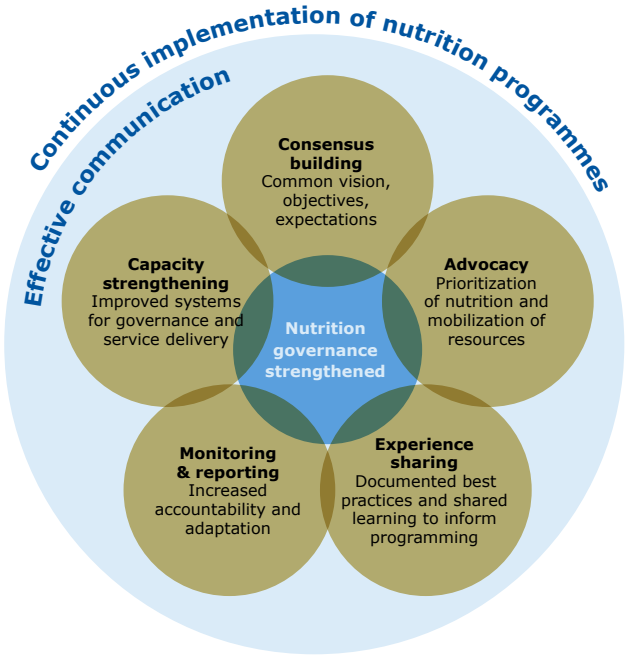
As an external facilitator, WCDI supported a combination of procedural and technical processes, including facilitating reflection and participatory learning to improve communication and to document best practices; consensus-building among the diverse communities of stakeholders to agree on roles, required capacities and resources; mentoring in process facilitation to strengthen in-country teams; and assisting the development of ten multisectoral district nutrition-action plans.

Insight 2: Integrated sectoral nutrition sector policy in Uganda

The DNCC initiative was guided by the Uganda Nutrition Action Plan, which framed nutrition as a multi-sector challenge. Nutrition integration into the sector policies was minimal, and the district development plans only considered the issue as a health problem. At the end of the initiative, the participating local governments had district nutrition action plans with clear interventions for each sector department: health, agriculture, education, community development, water and environment, and communication.

The initiative cascaded national policies related to nutrition-sensitive agriculture, and multi-sector planning for nutrition to local governments; there was evidence that was used to increase advocacy to mobilize nutrition finances and human resources at both national and local government level. The first Action Plan was replaced by a second with an expanded mandate to all sectors and local governments to identify explicit nutrition objectives and strategic actions that address both undernutrition, overweight, obesity and diet-related overnutrition. This integrated sectoral vision is visualized in Figure 2.3.

Figure 2.3: Framework for nutrition governance in Uganda



Inspired by and adapted from: FANTA, 2018

Insight 3: Nutrition sector polity Uganda: create structure and agency at district and county levels

District nutrition committee membership was primarily comprised of government representatives from administration, health, planning, education, agriculture, community development, and water departments. During the consensus-building process, stakeholders agreed that more effort was needed to increase involvement of civil society organizations, the private sector, and academia to mobilize nutrition resources and provide technical assistance. The district level nutrition governance committee started to engage directly with the political, cultural and religious leadership in their respective districts to strengthen nutrition governance based on joint decision-making on resource allocation and to agree upon behaviour change communication that addressed nutrition issues.

The increased popularity and relevance of DNCCs motivated dialogues to strengthen the sub-county nutrition coordination committees (a sub-level within the district) to support actual service delivery as well as add urgency to secure nutrition-focused finances to support policy implementation. Non-government organisations (including UNICEF, SNV, and World Vision) became interested in working with these governance structures, in a win-win situation with funding for district nutrition plans and increased visibility and ownership of nutrition programmes.

Insight 4: Importance of role clarity and formalisation of governance structures and mechanisms

Role clarity and formalisation was crucial to ensure authenticity of the coordination mechanism. The district committees required both governance-related and specific technical (e.g., health, nutrition sensitive agriculture, gender sensitive) capacities for effective coordination and nutrition service delivery. Line ministries conducted trainings at district level based on their individual mandates and work plans. The district

committee members needed specific skills to fulfil their functions (e.g., leadership, advocacy, and planning skills), as well as nutrition technical skills that allowed them to provide technical services. These were agreed upon as a standard for all members.

Insight 5: Influencing governance politics by the creation of a bottom-up agency

Starting up the initiative triggered tensions and initial resistance among some national level actors. Co-creating the activities and implementation strategies with the nutrition stakeholders was a relatively new approach, which departed from the norm of implementing programmes that were designed by external actors without buy-in from Ugandan stakeholders. The facilitators navigated this challenge by starting dialogues at district level where stakeholders were more receptive, while keeping the national actors informed on the voice of district level actors. The omission of district planners in the composition of district committees was another source of tension, in particular when discussing nutrition integration in district plans and budgets. Once engaged, these planners spearheaded development of their district nutrition action plans.

Insight 6: Effective sectoral alignment between local government and NGOs

As districts became clear on what they wanted at district level in terms of nutrition sectoral priorities, NGOs became interested in supporting the DNCC quarterly meetings and aligning their programmes. Also the national government and donors pushed NGOs to support the committees in terms of technical assistance and implementation of plans. Engagement improved the buy-in of programmes, enabled the co-creation of activities, and enhanced communication between districts and programmes. However, there was limited flexibility in implemented activities; this limitation was attributed to the urgency to realize the stipulated time-bound programme indicators. The districts tended to prioritize and respond to actions financed by NGOs (like humanitarian assistance and health interventions), indicating some potential biases in the choice of interventions during service delivery.

Insight 7: Increased interest from the district political leadership and peer learning between districts

Sharing experiences 'planted a seed' to take the local level operations seriously, and the developed knowledge materials and tools were used by the Office of the Prime Minister for resource mobilisation and as guides for designing district level functions countrywide. The capacitated district nutrition teams were involved in training other districts. The empowerment and increasing confidence of district teams sometimes required dealing with resistance and tensions, for instance districts determining their roles and workplans versus NGOs wanting to apply prescribed templates from their donors, or district teams investing in the process versus pursuing stipulated outcomes.

Insight 8: There is a need for more involvement by the private sector

The DNCC activities were mostly undertaken by government and NGOs. The private sector, and citizens, were often lacking or underrepresented. The private-sector actors had no clear value addition for nutrition committees in participating districts.

Insight 9: Boundary-spanning actors have an important role in facilitating transformative processes

Another learning was the importance of involving boundary-spanning (knowledge) partners to support different district departments in the framing of nutrition issues and actions and awareness of related national policies. This facilitated both vertical and horizontal learning in districts, across local governments and with national-level actors. It required time, a focused commitment and advocacy, and communication of the emerging story to decision-makers.

2.4.4 Summarizing observations for all cases

Summarizing the five requirements for effective governance of sectors and their transformation (Termeer et al., 2018) from the selected cases, the following observations can be made:

- *System-based problem framing helps to conceptualize synergies regarding the problems of the sector*: joint visioning, strategizing and identifying a common theory of change is being practiced, but could be utilized more effectively as sectoral theories of transformational change.
- *Connectivity across sectoral functions and to other systems and contexts is necessary for cohesion, networking and resource mobilization:* the Latin America watershed case, the Ugandan nutrition case and to some extent the Ethiopian seed case show the importance of connectivity at various levels within the sector and between their sector and other systems / the national context. Making these connections stronger supports effective sector governance and transformation.
- *Inclusivity and addressing power asymmetries varied:* this was done in a limited way (with the exception of nutrition in Uganda). In most cases government imposed top-down structures which hindered effective sector governance, let alone transformation of the sector.
- *Adaptability and responsiveness to uncertainties and volatile pressures can foster sector governance:* programme and donor-driven operations were not always helpful to foster this element of sector governance, although the cases did find ways to contextualize and initiate learning cycles that were open for adaptations. Adaptability and responsiveness to uncertainties and shocks can foster sector governance.

- *Transformative capacities are needed to facilitate processes of change:* in most of the cases transformative capacities are just emerging. Most cases show how sector partners re-organize sector governance. The governance of sector transformation is a new concept and requires attention in the coming year to evolve into a living practice with related knowledge products.

Table 2.2 presents what can be observed and concluded as lessons learned from applying the 3P (sector policies-polity-politics) framework on the three cases.

Table 2.2: Overview results of three governance sector cases according to the 3P, with observations and lessons learned.

Sector case	ISSD Ethiopia	IWM Latin America	Nutrition Uganda
Sector policies: ***Sector goals, strategic interventions, and sector challenges***	Focus on production, weak implementation, strategizing, and dealing with challenges	Focus on productivity, problematic implementation, not dealing with sector challenges	Inter-sectoral policy for national nutrition policy with clear goals and strategies
Sector polity: ***Structures for coordination, workforce, and capacities***	Weak local-national linkages; both technical and governance capacities require strengthening	Technical capacities existed; governance capacities strengthened, but this was not effective enough	Installing and capacitating local government structure sparked bottom-up governance processes; both technical and governance capacities were strengthened
Sector politics: ***Leadership, sector agenda setting, and service delivery***	Not on sector system transformation. Top-down	Stagnating, no clear mandate, top-down dominance, not effective	Providing space for bottom-up policies and nutrition delivery (empowering districts)
Key observations	Weak sector governance, only some elements of sector transformation	Scattered / inefficient sector governance, weak sector transformation	Sector policies and polity aligning different levels of government and government with programmes
Key lessons learned	In the Ethiopian context it was important to mobilize formal authority and link this up with more informal authorities (advisory bodies)	In a highly fragmented society, enough time should be taken to build common ground not only through joint visioning, strategizing and identifying a common ToC, but also by identifying the underlying interests of each stakeholder, their potential contributions, and a joint SWOT analysis; this will increase the cohesion between stakeholders and increase their collaborative spirit	Creating agency for bottom-up voices created transformation; importance of boundary partners to accompany key sector actors

2.5 Reflections

In this last section, we provide a number of reflections for practitioners that aim to strengthen the governance of sector transformation. The reflections focus on the question 'What can be learned from the cases and what does this mean for more effective and meaningful governance of sector transformation?'

2.5.1 Sectors

Reflection 1: Understand sectors as dynamic systems

Understanding a sector as a system helps to embrace systemic thinking. In WCDI's practice this often starts with participatory actor and issues analysis, looking at sector functions or system components, sector (system) boundaries, and relations between sector actors. In order to govern sectors effectively, it is also necessary to understand sector dynamics. Sectors are not static but in a constant flow, being a living system. Being able to help sector governance teams to understand these dynamics, and working with them or sometimes against them, is important for systemic sector transformation.

Reflection 2: Consider also operating in the intersection of sectors and society

Sectors are not only governed and steered by sectoral actors. They are also influenced by niche innovations, societal trends, and political changes. Sectors can be seen as socio-technical regimes with their own culture, institutions, and technical developments. Transformation of sectors towards more sustainable and inclusive systems is therefore influenced by societal trends and politics. Geels and Schot (2007) refers to how the societal and political context influences socio-technical regimes like sectors. The Latin America case illustrates how politics and culture influenced the functionality of the governing sector bodies (this is an example of actors sabotaging other actors' network meetings and this being part of national politics). As illustrated by the Ugandan case, WCDI can help to find actors and political support for sector transformational change.

Reflection 3: Move from sector governance to governance of sector transformation

The synthesis of the results show that most programmes are mainly working on strengthening governance structures and culture within sectors. Governance of sector transformation is not clearly articulated and structured in the analysed cases. This means that in the coming years WCDI should move more clearly from governance of sectors towards governance of sector transformation.

Reflection 4: Identify academic counterparts

There is a need to identify strategic partnerships and counterparts to support the policy-science-implementation interphases. Engaging knowledge institutions as a key stakeholder can expand perspectives on how to address sector challenges and enhance possibilities for collective action in transforming sectors, as illustrated in the Ethiopian seed sector case. Knowledge institutions often have a neutral position and can raise divergent views in the context of learning. At the same time we learnt that in the Latin America case, the watershed modellers from the National Agricultural Research Institute did not connect with the farmers' on-the-ground learning. These reflections point to the need to connect academic insights to practice and vice versa, which can also counterbalance more formal, hierarchical power relationships in sectors.

2.5.2 WCDI sector programmes

Reflection 5: Promote connectivity across sector teams

Reflecting on the selected cases, we observe that more exchange and learning needs to take place between different sector teams within WCDI. Sectoral practices in different domains (landscape, nutrition, seed, dairy, fisheries, aquaculture, and commodities) have evolved over time in different teams. There is a potential to connect them and learn from each other.

Reflection 6: Strategize beyond programme frameworks for sector transformation

Sector governance for joint planning, strategizing, monitoring, evaluating, and learning often starts from programme design. Programmes have their own dynamics with timeframes and budgets. Deliberate collaborative design and institutionalisation of governance functions and tasks needs to take place to ensure they are embedded within sector programmes.

Reflection 7: Move from sector governance to governance of sector transformation

Sector governance in WCDI programme practice is mostly about organizing and steering sector events. In our cases, we do not see an explicit and strong focus on the governance of transforming the sector. This task needs new capacities and actors and WCDI can be more deliberate and strategic in its programmes to help sector partners understand and start this new ambition and challenge.

2.5.3 Principles for governing sector transformation

Reflection 8: Address power asymmetries

Power dynamics in programme partnerships can block or push inclusivity and the need for addressing environmental values and outcomes. Governing sectors also means that a sector power analysis and inclusivity strategy needs to be established and implemented. Often this requires conflict management and a strong support from sector facilitators like WCDI teams.

Reflection 9: Stimulate adaptability and responsiveness

Current programme and donor-driven operations are not helpful to foster adaptability and responsiveness of sector governance, although WCDI programmes do find ways to contextualize and initiate learning cycles that are open for adaptations. Examples are the documentation of learning from ISSD Ethiopia (Borman et al., 2022b) and the nutrition sector of Uganda where change started bottom-up. Contextualization is a key element in sectoral learning and adaptation processes. There seems to be more space for sector teams to stimulate and practice adaptability and responsiveness.

Reflection 10: Foster a governance culture of joint SME&L

Often sector partners are used to their own organisational SME&L, whether coming from government, the private sector, or civil society. Working together in programmes is a step towards SME&L collaboration; but governing a sector, including governing for sector transformation, requires engagement to value diversity and engage for inclusivity at sector level. It also requires helping sector partners to see the sector as a complex system, being able to contextualize the sector, and fostering a culture of sectoral learning.

Reflection 11: Help sector partners to govern for effective connectivity

It is important to articulate a sector connection strategy, within the sector, and between the sector and other sectors, in for example a food system or a landscape, to connect with innovators and other actors in society. Sector net mapping tools are increasingly applied to see the actors in the system, identify weak or absent connectivity, identify absent actors (inclusivity, environment), and new sector actors like connectors, boundary partners and system brokers.

2.5.4 Application of the two governance frameworks

Reflection 12: Apply the scan on five sector governance goals

The five governance goals are helpful as a scan, as they point to the five key areas of governing sectors. The selected cases show for most of these five goals an emerging practice, but in most areas there is quite some work to be done. They all have to be strengthened in terms of establishing strategies, finding effective tools, and learning from practice in each of these five sector governance goals.

Reflection 13: Use the 3P framework to help sector governance practitioners analyse and reflect

Case owners easily applied the 3P governance flower framework and it helped to reflect on changes over time in the historical evolution of the governance of a specific sector. Often an element was forgotten at the start, like the absence of sector policies or sector politics. Most programmes start to analyse and reflect on sector polity - the governance structures or institutions that need to be strengthened or installed - without thinking about sector policies and sector politics. If, for instance, inclusivity or planetary health values are to be prioritized it might be good to start with understanding and influencing sector politics, and help to establish inclusivity and environmental policies, before addressing the review of sector polity. The sector governance flower provides three potential petals for each of the 3 Ps.

2.5.5 Guidance and recommendations on governing for sector transformation

Reflection 14: Balance formal and informal governance processes

From the cases it can be deducted that the more informal processes happen in sector governance, the more valuable meaningful change processes can be observed; whereas when mainly formal sector governance processes happen, the more difficult it is to identify meaningful sector transformation. It is especially important to invest in informal communication at the start of sector transformation, as over time initial informal working groups might evolve into more formal governance structures. Sometimes it can be strategic to move an informal structure towards a formal, as shown by ISSD Ethiopia (see insight 8 on page 24).

Reflection 15: Strategize on the role of WCDI as sector change agents

We see a variety of different roles WCDI takes in our sector programmes: to connect, mobilize authority, create agency, coach sector champions, strategize on where and how to start, understand and deal with conflicts, pose difficult questions, use the WUR *academic power*, etc. The package of WCDI's possible contributions in a sector that aims for transformation needs to be tailor-made and worked out together with the key sector champions that are willing to embark on the sector transformation journey. In other words, we can help each other by being clear on the competences required for sector transformation, and how these are being strengthened amongst sector governance teams, as part of a coherent and collaborative leadership framework. As a knowledge institute, we are in a good position to push boundaries and challenge restraining norms to drive the transformation, all under the banner of learning. If we are aware of this role we can play it more deliberately and strategically.

2.5.6 Capacities and conditions for governance of sector transformation

Reflection 16: Invest in transformative capacities

Building on reflection 2 - that we need to also operate in the intersection of sectors and society - this requires investment in transformative capacities and how WCDI can strengthen these amongst sector governance practitioners. One element will be applying theories of transformation (with embedded theories of change), which for instance show how we expect that societal trends and politics will influence sectors (Geels and Schot, 2007) on how the societal context is influencing socio-technical regimes like sectors. Capacities include both technical and leadership / governance-oriented capacities.

Reflection 17: Acknowledge existing sector governance capacities

In all cases, we see that WCDI builds on existing sector governance culture and capacities. It is important to meet the sector where it is. At the same time, WCDI is in a position to cross-fertilize insights and learning from other sectors and countries. Working with sector stakeholders who are open to learn from other experiences is another condition for the governance of sector transformation.

Reflection 18: Embrace a long-term perspective

A condition for sector transformation is that a long-term engagement is made. Transformative changes means systemic changes with institutional reforms. Although short-term innovation and inspiration is required at the start, in-depth results at the scale of an entire sector requires at least ten years and often a generation.

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3. How to improve strategizing, monitoring, evaluating and learning (SME&L)

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This chapter discusses using SME&L to support systems change. Sectors are complex and dynamic; so this has implications for monitoring and guiding sector transformation; it inherently means dealing with messy and complex processes.

Photo: ISSD Uganda

3.1 Introduction

Sectors are complex and dynamic, and this has implications for how to plan, monitor, evaluate and learn (SME&L) to support systems change. Monitoring and guiding sector transformation inherently means dealing with messy and complex processes. A systems approach is required to deal with complexity (Kusters et al., 2017, p. 28): 'Essentially, a systems perspective is about considering different elements in their connectedness and coherence and not as isolated elements or phenomena'. This also holds true for the transformation of a sector: it requires a different way of strategizing, monitoring, evaluating and learning (SME&L) than what is normally done for programmes.

The attention to and current learning on how SME&L can support the transformation of a sector of a food system is growing. This includes, for example, integrating and dealing with multiple outcomes such as food security and nutrition-related outcomes; socio-economic outcomes, including equity; and environmental outcomes. SME&L helps transitioning towards sector transformation, targeting impacts, assessing interrelated outcomes, and understanding synergies and trade-offs between these outcomes. Another trend in SME&L is the realization that we need to deal with complexity since everything in a sector or system is connected. This is reflected in approaches for SME&L that use a mix of (complexity- sensitive) methods, capturing the dynamics of a changing system and context. Moreover, evidence that is generated and that supports transformation processes can be political. Therefore, SME&L supporting transformation requires the engagement of multiple stakeholders at multiple levels in and outside a sector. Below one can see how the perspective on SME&L (earlier often referred to as planning, monitoring, evaluation and learning or PME&L) has evolved over time from focusing on tracking programme changes towards being transformed in a more strategic approach whereby SME&L supports the transition towards the transformation of a sector. Based on Kusters (2017), we elaborated SME&L perspectives supporting the development of a framework for assessing and learning from the use of SME&L within sector transformation programmes. Table 3.1 shares these perspectives. Jim Woodhill (2022) explored in the webinar 'Transforming monitoring & evaluation to support food systems transformation' how in this context monitoring and evaluation needs to change:

- From monitoring pre-determined results, to monitoring directions and application of systemic change principles;
- From a primary focus on what is being done or achieved, to focusing on interrelationships between context and interventions;
- From largely tangible changes to tangible and intangible changes that create conditions for systemic change;
- From sector orientation to systems orientation;
- From looking back to exploring the future.

Guiding sector transformation needs to be flexible and adaptive, as the context is dynamic and changing all the time. This requires a different approach to the way we plan or rather strategize, monitor, evaluate and learn as part of a process of managing and governing a process of transformation towards the desired and envisaged outcomes. Such a process calls for designing pathways, theories of change or rather theories of transformation that are in line with these complex and dynamic contexts. Such processes of transformation require monitoring to move beyond pre-identified indicators. Therefore, it is essential that stakeholders regularly engage in sensemaking and learning to find out what works or not, and to identify the key factors and actors they need to influence to contribute to desired outcomes.

3.2 Three key frameworks informing the analytical framework

For the current publication, we conducted a quick scan of articles and documents to identify relevant analytical frameworks that could guide the analysis of SME&L in cases of sector transformation within WCDI programmes. Three frameworks were identified that matched this purpose.

Framework 1: Managing for sustainable development impact (M4SDI)

In the guidebook, M4SDI is introduced as 'an integrated, results-oriented management approach, which can be used across a range of sectors and domains in a variety of contexts and aims to contribute towards the Sustainable Development Goals (SDGs). It seeks to integrate ideas and practices from a range of approaches and methodologies for planning, monitoring and evaluation, using appropriate methods or tools that engage people in a process of learning and adaptation'. Figure 3.1 illustrates the M4SI framework (Kusters et al., 2017). Cecile Kusters is the lead author of M4SDI as well as the lead author of this chapter.

Framework 2: Principles of Blue Marble Evaluation (BME)

Patton (2019) describes BME as 'an approach to evaluating global initiatives aimed at transforming systems towards a more sustainable world'. BME principles are key for SME&L that supports the transformation of sectors contributing to desired food system outcomes. Many of the BME principles overlap with the M4SDI principles. Patton elaborates that BME 'is principles-based because to deal with the complexities of global issues and problems, we need principles to guide us, not a rule book to tie us down. The principles direct us to view the world globally, holistically, and systemically. This means examining

interconnections of problems and solutions across the artificial boundaries of nation-states, sector silos, and narrowly identified issues. BMEs must provide timely, meaningful, relevant, credible, and actionable information in support of global systems change and, ultimately, transformation, thereby becoming part of the solution, not, as evaluation is often perceived, part of the problem'.

Framework 3: Synthesis of independent dialogues for the UN food systems summit

The synthesis of the independent dialogues for the UN food systems summit was led by Michael Quinn Patton, who is also the founder of Blue Marble Evaluation (BME) Principles. The synthesis report presents 22 guiding themes for food systems transformation. These also include: (a) guidance on what is needed and envisioned; (b) guidance on who should be engaged in transforming food systems; (c) guidance on how transforming food systems be undertaken; and (d) success factors that are key to transformative results. The 22 guiding themes are regrouped in a graphic to suggest a sequence of engagement that constitutes a potential theory of transformation for food systems transformation. Figure 3.2 illustrates the synthesis framework. The synthesis report was summarized in a blog by Michael Quinn Patton (UNFSS, 2021). Michael Quinn Patton (2022) also presented this during the webinar 'Transforming monitoring & evaluation to support food systems transformation' (UNFSS, 2021).

Translating the three to one analytical framework

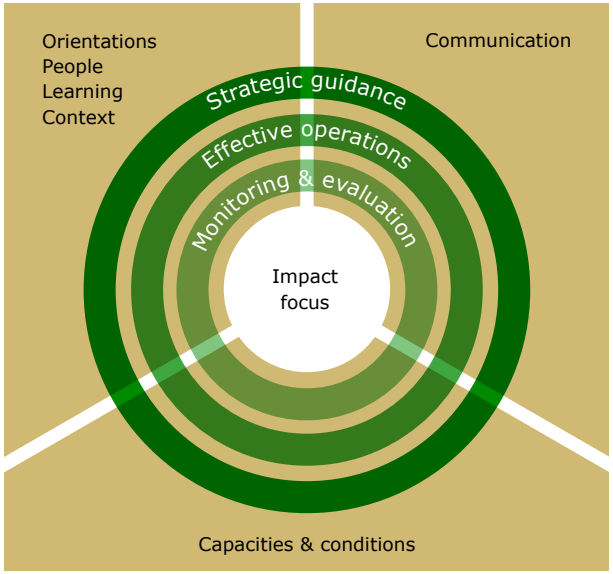
Based on the three frameworks (M4SDI, BME and the UNFSS-related theory of transformation for food systems transformation), one overarching framework has been developed. This framework is provided in Box 3.1.

Table 3.1: Changing perspectives on SME&L

From:	Focus on activities and outputs
To:	Including a focus on outcomes and impacts
From:	M&E mainly for projects
To:	SME&L for organizations, sectors, value chains, across sectors Harmonizing SME&L for different funding agencies
From:	Design of M&E focused on accuracy
To:	Design of M&E focused mainly on its utility for (or even its influence on) primary stakeholders Linking SME&L to internal planning and decision-making processes
From:	Dominated by linear cause- effect thinking and the use of logic models
To:	SME&L inspired by systems and complexity thinking in view of rapidly changing environments and increasing interdependencies
From:	M&E considered only as compliance with external reporting requirements, and therefore viewed as a burden
To:	SME&L recognized and appreciated as an integral part of management and organizational learning
From:	M&E driven by external directions and assessment
To:	SME&L co-designed and owned by those directly responsible for implementation
From:	Randomized control trials (RCTs) as the gold standard for impact evaluation; quantitative information valued more than qualitative information
To:	Impact evaluation to draw on a wider range of designs and methods
From:	Evidence as a neutral input for decision-making
To:	Realization about the politics of evidence
From:	M&E based on a fixed set of indicators
To:	ME&L based on agreed information needs, based on input from key partners/ stakeholders, and a complex and changing context
From:	Primary focus on identifying indicators
To:	Focus on clarifying performance and evaluation questions and from there only defining appropriate indicators
From:	Generating lots of unused data
To:	The anticipated use of data (by different stakeholders) is one of the key determinants in defining what data will be collected
From:	Data analysis and sense-making only by (M&E) expert
To:	Stakeholders engaged in data analysis and sense-making
From:	Studies leading to long reports
To:	To move away from producing lengthy studies towards using streams – ongoing data, real-time data, harvesting, data from many different official and unofficial sources facilitated by ICTs
From:	Preparing only one generic evaluation report
To:	Multiple forms of reporting aimed at various audiences Increased attention to visualization that draws attention to key messages
From:	Limited capacity and competency in M&E; 'expert' evaluators often based in the North
To:	Increasing SME&L capacity Everyone has a role to play in SME&L

Adapted from: Kusters et al., 2017: pp. 164-165

Figure 3.1: Framework for managing for sustainable development impact



Source: Kusters et al., 2017

Figure 3.2: The theory of transformation applied in the synthesis of the independent dialogues for the UN food system summit

Source: UNFSS (2021)

Box 3.1: Framework for analysing sector transformation programmes gaining insights and learning lessons on SME&L

A. SME&L processes – strategic guidance
- Key outcomes
- Focus & boundaries
- Theories of change/ transformation
- Evidence-based and adaptive management

B. SME&L processes – effective operations

C. SME&L processes - SME&L for adaptive management
- M&E – foresight, scenarios, projections
- Monitoring transformation
- M&E – context awareness
- Bricolage methods principle - contextualize

D. Communication: internal and external

E. Capacities & conditions
- Leadership
- Human capacities for SME&L & evidence-based adaptive management
- Incentives for SME&L
- Structure – evaluator roles - skin in the game
- Budget

F. Principles
- Recognize complexity and apply systems thinking
- Yin-yang principle - harmonize conceptual opposites
- Engage stakeholders in learning-oriented SME&L and decision-making processes
- Value diversity and engage inclusively

G. Contextualize and localize

3.3 Methodology

To learn about SME&L for sector transformation in WCDI practice, a deep dive was done in four sector programmes: (i) The Inclusive Dairy Enterprise programme in Uganda; (ii) Investing in Horticultural Development (HortInvest) in Rwanda; (iii) Investing in Horticultural Development (HortiFresh) Ghana and Côte d'Ivoire; and (iv) Integrated Seed Sector Development (ISSD Plus) in Uganda.

We conducted interviews with programme staff, using core interview questions that are described in Box 3.2. Both the interviews and documents review provided inputs for the analysis of SME&L-related practices in the four cases. The analysis provided inputs for the formulation of key lessons assessing and learning from the application and use of SME&L in support of sector transformation. See also Box 3.1, which provides the summary of the analytical framework.

Box 3.2: Core interview questions

- How do you (including key sector stakeholders) know/find out what change takes place in the sector?
- How do you know that something changed, that transformation took place in the sector? How do/ did you keep track of these changes?
- How did you use this information to support the transformation process?
- How can monitoring (processes, approaches, methods) support real sector transformation?
- What should we do/change to ensure monitoring can support sector transformation?
- Is this different from monitoring to support food system transformation? If so, how?

3.4 Results

3.4.1 The Inclusive Dairy Enterprise programme (TIDE) - Uganda

Case description

The Inclusive Dairy Enterprise programme (TIDE; 2016-2023) aims to contribute to the expansion of the dairy sector in Uganda by addressing systemic market constraints. The programme's first phase focused on supporting farmers' transition to semi-intensive dairy farming by creating a commercial input market. The second phase focuses on developing the created input market to deliver at scale products and services to farmers. TIDE has adopted a market system approach which included strengthening value chain linkages and inclusiveness, promoting improved milk quality, and domestic dairy market diversification (SNV, 2023a). SME&L is focused on the behaviour of stakeholders in the dairy sector.

Insights

Insight 1: A market systems development approach can be helpful

Although TIDE phase I was not initially designed to transform the dairy sector in Uganda, the market system development approach and the actor-based Theory of Change (ToC) helped the programme to focus on key leverage points in the dairy sector. Addressing the input and output market failures helped dairy farmers to transition to semi-intensive dairy farming.

Insight 2: There should be a focus on stakeholder behaviour

The actor-based ToC assumes that the dynamics in the dairy sector are essentially the result of stakeholders' behaviours. Following the COM-B model for behaviour change (West & Michie, 2020), stakeholders' behaviours in turn are influenced by their capability, opportunity and motivation. Focusing explicitly on stakeholders' behaviours was key for TIDE's strategic planning and implementation and for assessing whether TIDE had contributed to the development of the dairy sector.

Insight 3: Use focused sector level outcome areas that require interventions at multiple levels

TIDE focuses among others on a) improving milk quality in the dairy sector, b) ensuring farmers gain price premiums for good milk quality and c) strengthening relationship between farmers and milk collection centres and processors. This focus on milk quality as one of the key outcome areas proved to be instrumental for the programme's contribution to sector transformation. In fact, it requires TIDE to intervene at multiple levels in the dairy sector, including the enabling environment, through its quality-based milk payment system and support to the dairy development authority.

Insight 4: Use behaviour change as a leverage point to achieve impact

To identify key leverage points, TIDE first identified three key impact areas: (a) improving dairy farmer income, (b) increasing employment at the farm level and along the value chain, and (c) improving the nutrition of school children. The programme then identified behavioural changes needed within key stakeholder groups to achieve these impacts. Interventions were then directed to improving stakeholder capacity, motivation and opportunity (COM-B model) in adopting these desired behavioural changes, given the baseline situation. These key leverage points were then represented in the TIDE's ToC, which assumes that the dairy farming income increase is a result of an increased volume of good quality milk sold.

Insight 5: SME&L supporting sector transformation requires an actor-based ToC

The actor-based ToC was useful in understanding the influence of TIDE in the sector. By tracking changes in capacities, motivation and opportunities, and how these have contributed to changes in behaviours, the M&E system was well positioned to assess the contribution of the programme to dairy sector transformation and thus operate as a SME&L system.

Insight 6: Monitoring the programme contribution to sector changes is complicated

Assessing the contribution of a programme such as TIDE to the transformation of sector such as dairy is complex because of the many actors and different forces influencing their behaviours. Understanding the socio-economic and political landscape in which the actors operate is a sine qua non for any study of sectors and changes inside and outside the sector. For example the current M&E system of TIDE does not capture contextual aspects that relate to the dairy sector in Uganda, nor does it record changes in the sector in a thorough, systematic way. Examples of such contextual aspects (relevant to sector transformation but not captured), are (a) the position of cooperatives in the dairy sector in South-West Uganda, (b) dynamics in the informal dairy markets and (c) policy processes relevant for the dairy sector. Furthermore, the programme does not have a dairy sector-level vision (or approach), and mainly focuses on monitoring activities and outcomes related to the value chain (such as improving milk production and supporting the private sector).

3.4.2 Investing in Horticultural Development (HortInvest) - Rwanda

Case description

HortInvest (2017 – 2021) aimed to significantly increase the horticultural sector's relative contribution to the regional economy in North-West Rwanda and farmers' incomes, as well as to improve the food and nutrition security of poor households in Rwanda. The programme focused on (a) improving market-led horticultural production and supplies for domestic and regional markets; (b) enhancing food and nutrition security of rural households involved in horticulture and urban consumers; (c) developing high-value horticultural exports; and (d) creating an enabling environment for commercial horticultural developments (SNV, 2023b; WUR, 2023d). This case shows the importance of understanding the context of a programme to come up with SME&L that serves the purpose of a programme to contribute towards sector transformation.

Insights

Insight 1: The geographic position of the country affects the programme's ToC

Context and the geographic positioning of Rwanda as a landlocked country influences the economic positioning of the horticultural sector. As a landlocked country, export of vegetables and other products from Rwanda to Europe is feasible only as airfreight. This affects the prices of horticulture products for the market. Situated in a particular geographic and climatic zone, the country has a potential for vegetable production. When the Covid-19 crisis started, airfreights stopped impacting the vegetable export and domestic markets. This contextual aspect must be considered when designing and adapting a ToC for a sector programme.

Insight 2: Country governance can influence stakeholder engagement in SME&L

Rwanda is centrally led by government and the private sector is only just starting to have an influence or importance. The government decides what land will be used for staple crops and/or other crops. The government is also interested in technical innovation for high-end users of horticulture, which drives such technical innovations. Whilst some of the principles for SME&L are about stakeholder engagement, decision-making, and inclusion, the governance and policy environment of a specific country creates more or less room for manoeuvre in the application of such principles.

Insight 3: A mix of methods is required to understand changes in the sector

HortInvest commissioned at its beginning several specific studies which include targeted baselines. Subsequently it conducted midterm and endline M&E, which showed changes on the indicators for food and nutrition security. The midterm and endline evaluations used quantitative and qualitative methods; they also used control groups for measuring impact on food security and nutrition. Critical informative sources for change were not tracked. Some changes were not captured in HortiInvest's formal M&E, but for the purposes of this case study we were able to source them through their qualitative impact studies. An example is the uptake of learnings by the farmers from the demonstration plots. For the qualitative studies, the programme interviewed targeted stakeholders and collected stories of change; these showed changes at the household level including income, capital and nutritional status. At company and sector level, collected stories illustrated the changes to which the programme had contributed.

Insight 5: Multi-stakeholder platforms can support SME&L for sector transformation

Multi-stakeholder platforms for horticulture and potato sectors were set up at district and at national levels. The platforms served, at a sector level, to share experiences, learn from them, discuss challenges, and formulate action plans. It was challenging for the platforms to gain the commitment of the stakeholders and put agreed action plans to action. This constrained improvements in the sector functioning; it also jeopardized the joined monitoring, evaluation and learning required for system changes on the challenges identified. At first, the government platform led the platform; gradually leadership transitioned to the private sector. The platform served as a way of strategizing and of focusing on the remaining challenges to be addressed in the horticultural and potato sector.

Insight 6: Strategic SME&L with a food systems lens can support sector transformation

Four strategic learning events, including a road trip, were organized under the flag of HortInvest. These learning events targeted different audiences, so their design and purpose varied. For instance, the international event brought together stakeholders from 12 different horticultural programmes covering 9 different countries. As with the other events, this supported deeper learning and insights in sector transformations and their contributions to food system transformation. A critical insight gained was that good guidance and leadership is needed to ensure collaborative SME&L processes that look beyond programmes, sectors and countries to support food systems transformation.

Insight 7: A sector-based ToC with multiple outcomes needs an integrated programme

HortInvest had four separate pillars in its design: production, nutrition, investment and an enabling environment (including gender and youth). The four pillars did not come together during the programme period. HortInvest focused mainly on socio-economic outcomes. The design was production-oriented, but over time HortInvest adapted towards a more food system perspective. In the last year, there was more emphasis towards horticulture as a contribution to food systems and nutrition. This helped with a better integration of nutrition in the other programme activities. However, the nutrition pathways continued to be implemented in isolation; there was not enough reasons to integrate, for example, production, marketing, and nutrition interventions. The ultimate results were not geared towards a collective improved impact.

Insight 8: Programme leadership governance can hugely affect the outcome of the interventions

The way that HortInvest was governed and managed also affected the way how results were obtained. The practice was to use M&E to track change at programme level (accountability to the donor); to come to SME&L for learning and adaptive management, and to view M&E as a driver for sector change, would have required a more integrated approach. Opportunities for strategic adaptive management existed. However, the practice remained where, for example, annual plans treated different tracks separately and did not promote integration between tracks. HortInvest did, to a limited degree, communicate results and changes to different sector stakeholders.

Insight 9: The monitoring and evaluation of programmes need more than donor-driven indicators; only donor-driven indicators are not useful for programme impact

The food security and nutrition (FNS) indicators give certain measurement directions, but they do not show sector and system change. Other trends and indications are necessary for getting more insights into changes happening that contribute to food security and nutrition outcomes. Moreover, the changes happening in the horticultural sector are perhaps not always good for certain stakeholders and or sector functions. For example, production intensification can harm the environment or the health of the farmers, or commercialisation of certain crops may benefit the men and not the women.

Insight 10: Use evidence-based principles to support sector transformation

To deepen the insights from sector change and to build the case towards horticulture contributing to food systems, HortInvest and HortiFresh in 2019 and 2022 shared their experiences with ten other horticulture programmes in Africa. The 2022 event resulted in the Kigali Horti Declaration Principles (Box 3.3). The principles relate to SME&L, systems thinking, stakeholder engagement and capacities, and the conditions needed to support SME&L processes in horticultural sector transformation.

Box 3.3: The Kigali Horti Declaration principles

1. Align with government policies and strategy
2. Undertake a food systems analysis
3. Understand trade-offs and do no harm
4. Set a clear vision
5. Engage stakeholders
6. Define and tailor target groups
7. Strengthen capacities, develop leadership and coalitions
8. Programme towards scaling and systems change
9. Monitor, evaluate and learn
10. Communicate and advocate for scaling

3.4.3 Investing in Horticultural Development (HortiFresh) Ghana and Côte d'Ivoire

Case description

Côte d'Ivoire's and Ghana's fruit and vegetable sectors are very diverse, with a growing domestic market, and a stable export market of pineapple, banana, mango, and Asian vegetables. Though encouraging growth has been achieved in the sector, several challenges have been identified by sector stakeholders. Many of these challenges were interrelated and hence the HortiFresh programme in Ghana and Côte d'Ivoire took up a sector transformation approach. The programme aimed to contribute to a sustainable and internationally competitive fruit and vegetable sector contributing to inclusive economic growth, food and nutrition security. HortiFresh focused on three major outcomes: (a) a conducive business climate, facilitating the development of the fruit and vegetable sector; (b) a competitive and innovative high-value fruit and vegetable sector; and (c) an inclusive and sustainable fruit and vegetable sector. HortiFresh used a range of different SME&L methods and approaches to capture the complexity and to work with this in support of sector transformation.

Insights

Insight 1: Mixing methods and sources are key for monitoring evaluation and learning

SME&L took place in HortiFresh at multiple levels, involving multiple stakeholders and using different sources of evidence, both quantitative and qualitative. Data was collected from external data sources, from internal documents and from interactions with stakeholders in platforms and stakeholder stories. SME&L was not only indicator-based but also process-based, and learning events were part of data collection. This helped to capture the complexity of a sector and to stimulate stakeholders in the sector to learn from each other on what worked and what challenges needed to be addressed. It also informed initiatives for sector coordination.

Insight 2: Use stakeholder intelligence in learning events as part of data collection

Business platforms meetings brought together and engaged horticulture sector stakeholders in discussing salient topics like finance, phytosanitary issues and marketing. Round tables were organized in which selected stakeholders would provide their views on specific issues like food safety or international trade issues. The discussions in these fora amongst and with stakeholders informed the programme agenda. Stakeholders would discuss specific relevant topics, identification of specific sector issues and what needs to happen to address them. Although stakeholders' information was not collected as formal qualitative SME&L data, it was key in validating the theory of change and its assumptions; monitoring context, trends, opportunities and bottlenecks in the sector; and adapting planning.

Insight 3: Special studies are useful approaches to gather information on the context

To provide additional information on emerging issues, trends and context change, special studies were commissioned. These studies could, for instance, provide data on context changes for the sector (for example, the changing global, regional and local markets due to COVID-19). Sometimes studies were commissioned by stakeholders; for example, the food safety task force that came into existence after a round table commissioning a special study on food safety. The studies were useful for understanding changes in the context and adapting accordingly.

Insight 4: Use studies discussed in platforms and roundtables lead to joint sensemaking and action

The results of studies were shared and discussed with stakeholders in meetings and round tables. These structures and processes for collective sense-making helped to create space for critical reflection on evidence on common challenges and collaboratively seeking solutions towards systemic changes in the sector.

Insight 5: Mid-term reviews (MTRs) can be geared towards learning

HortiFresh commissioned an external MTR to assess the relevance, effectiveness and sustainability of the programme. The MTR was geared towards learning and adaptation, and the programme team and implementing partners were its intended users. The donor did not make the MTR a requirement in the contract, so questions on efficiency were not pushed into the MTR terms of reference, and learning was core. The MTR team collected qualitative data with sector stakeholders and came up with relevant and actionable findings and recommendations. These were used to inform the planning of the programme in the next years and as such informed decisions for sector transformation.

Insight 6: Rapid assessments are useful for gauging sector performance and adapting programme implementation and stakeholder practices

Rapid assessments amongst partners provided information for adaptive management; they were useful for a) adapting implementation and b) gauging sector performance before a future programme design. A rapid assessment conducted to assess the impact of COVID-19 global pandemic on the horticultural sector, informed the partners and contributed to changes in programme, adjusting the way of working and informing the adaptation of programme implementation. At the same time, the rapid assessment provided key information recommendations

to sector stakeholders and policymakers so they could use this evidence to adapt and respond to the pandemic and its impact on the sector.

Insight 7: It is difficult to define indicators to track sector change

After validation of the theory of change of HortiFresh with sector stakeholders, indicators were defined. The FNS indicators that had to be reported to the donor did not provide information for tracking sector change. HortiFresh tried to identify indicators for which quantitative data was already available. For examples, to monitor changes in the competitiveness and the performance of sector, it selected indicators related to horticultural trade volume and value collected by a public body. However, the data quality appeared questionable, and data was not available timeously. Consequently, it was concluded that these trade-related indicators were not trustworthy and reliable for monitoring sector change; that qualitative data on stakeholders' perceptions of change would be more valuable; and that the tracking of sector change was complex and required the engagement of multiple stakeholders to agree on what was necessary to know in terms of sector change.

Insight 8: It is difficult to attribute changes in a sector to a programme

It is difficult to relate, let alone attribute, changes in high-level indicators, like the ones on trade volume and value, to an individual programme such as HortiFresh. A sector is a system with many different interconnected components. Whilst a programme can influence a sector, it is very difficult to attribute changes in a sector to a single programme. It is more useful to assess the contribution of a sector programme as well as other influencing factors and stakeholders towards overarching goals.

Insight 9: It takes time for change in the enabling environment to be measurable

It was difficult to find indicators that allowed monitoring progress in the enabling environment, such as changes in the business climate. Furthermore, improvements in policies and establishment of sector bodies typically take time to take shape and result in any measurable impact. It requires indicators that allow the reporting of small incremental changes, and the engagement of sector actors to monitor even the small changes towards an enabling environment.

Insight 10: Storytelling illustrates sector trends, sector change, impact, and influence on personal lives

Where indicators with numeric value proved not to be very useful in monitoring sector change, stories collected with stakeholders did provide information on changes in the horticulture sector. A qualitative methodology was used, where stories were collected at the start of the programme and change stories were collected at the end of the programme. Policymakers, entrepreneurs, farmers, students, workers, and service providers shared their personal change stories and told about changes in policies, markets, production methods, services, access to finance, compliance with standards, livelihoods, and opportunities for education. Collecting stories of change from diverse stakeholders is an important tool for collecting information from diverse perspectives on sector transformation.

Insight 11: Stories and/or narratives are not useful for comparing over time and across stakeholders

To use the narratives collected through storytelling as a source for monitoring progress, by asking the same question at the beginning and the end to a panel of storytellers, and comparing the beginning and end stories, proved not to yield information on change. Also, we found that comparing the narratives of the storytellers is only possible when all facilitators of the storytellers facilitate the process in the same way, framing the questions in the same way. When using different facilitators, one having more a qualitative data collection focus, and the other having more a journalistic focus on communicate successes, this uniformity for facilitating and framing turned out to not yield useful results. Storytelling is very difficult to use as a method for collecting baseline and endline information with the objective to identify changes by comparing between baseline and endline.

Insight 12: On the indicators required by donor, the values that were reported used many assumptions

HortiFresh provided quantitative data on selected indicators that its donor uses for monitoring progress at the level of food security and nutrition. The donor aggregates the data on indicators at country level, feeding the annual reporting to parliament and country-level reporting on SDG indicators. The data sources for these indicators were trustworthy; grantees and programme staff validated the data; the data were also supported by activity reports. However, to report the required values for some of the indicators (for instance # of households indirectly reached), HortiFresh used a number of assumptions for extrapolation. To obtain more trustworthy data, a huge sample size would have been required, which was not in line with the investment in HortiFresh.

3.4.4 Integrated Seed Sector Development (ISSD Plus) Uganda

Case description

From 2016-2021, the ISSD Plus Uganda Programme was implemented to support the development of a vibrant, pluralistic and market-oriented seed sector in Uganda, providing more than 300,000 smallholder farmers access to affordable quality seed of preferred varieties. It worked across the entire seed value chain and promoted all classes of quality seed in Uganda with the aim of increasing access to, and uptake of, quality seed for smallholder farmers in Uganda (WUR, 2023e; ISSD Uganda, 2023). The programme applied SME&L to the functioning of the entire seed sector; this helped to support its transformation.

Insights

Insight 1: Use multiple sources of evidence

ISSD Plus programme focused its SME&L on the entire seed sector; it captured change at programme-specific level to changes in the sector. This required a mix of methods to obtain both quantitative data, such as the amount of quality seed produced, and qualitative data, such as the perception of stakeholders on sector level changes. The programme used M&E reports, databases, studies and stakeholder perceptions to inform adaptive programme management and provide evidence-based support to decision-making and governance of the seed sector.

Insights 2: Generate deeper insights through studies and publications

ISSD Plus carried out studies in the seed sector. For example, the access to seed study gave a lot of information on the level of uptake of quality declared seed (QDS) that was produced by local seed businesses supported by the programme. Understanding the level of QDS uptake was the most important indicator of fundamental changes in the seed sector, which was in fact a new key component of the now pluralistic seed sector. In addition to the studies, programme staff, in collaboration with others, published in scientific journals, for which reliable information was needed. The studies and publications generated deeper insights relevant to the programme as well as the seed sector in Uganda; they were informative to similar initiatives targeting sector transformation.

Insight 3: Engage with multiple stakeholders to assess and address sector challenges

As seed sector transformation is complex and involves many stakeholders, ISSD Plus actively engaged with multiple seed sector stakeholders in dialogue. For example, in biannual multi-stakeholder meetings but also in bilateral meetings, stakeholders shared perspectives on their activities as well as their perceptions on changes and sector challenges. Furthermore, performance of the seed sector was assessed by engaging all stakeholders to reflect on and rate the performance of different segments of the seed value chain, such as variety development, seed production, uptake, and the policy environment. Engaging multiple stakeholders to assess progress and changes in the seed sector is crucial in addressing seed sector challenges in a sustainable manner.

Insight 4: Use observation, the media and the grapevine

Announcements by the Ministry of Agriculture, Animal Industry and Fisheries (for example on seed regulations) provided evidence on seed sector performance. ISSD Plus Uganda, in collaboration with stakeholders, provided input for the seed policy and regulations. Another important source of information was the 'grapevine', which was important to find out about rumours on negative perceptions of what the programme was doing. 'It is good to know your friends but also your opponents' said Patrick Oyee, Chief executive of ISSD Plus Uganda. SME&L does not just consist of using formal methods and approaches; through informal ways evidence can be generated that can inform decision-making.

Insight 5: Encourage collaborative sensemaking for adaptive management

The programme used an evidence-based approach to adaptive management of the programme and the process of sector transformation. This ensured sensemaking on and use of quality evidence from farm to policy level. In addition to the multi-stakeholder meetings, technical working groups with key stakeholders were set up to address specific challenges, develop strategies or concepts, and then take these back to the wider stakeholder group for buy-in, adaptation and implementation. At programme level, quarterly and annual review and planning meetings focused not only on reviewing programme progress, but also on how key challenges in the seed sector had been addressed and what new challenges were emerging. These sensemaking events informed a revision of the theory of change, the logframe and the development of the next quarterly or annual plan of the programme.

Insight 6: The leadership should support building relationships and collaborative learning

Because of integrated feedback loops and an open culture of learning and leadership support, the programme, in close collaboration with key stakeholders in the seed sector, was able to adapt its efforts to changes in the seed sector. All staff were Ugandans, and this helped in developing close relationships with the government and other stakeholders in the seed sector. Building relationships based on trust, being open to listening to all, including dissenting voices, and being flexible enough to change actions towards a bigger goal were important, next to ensuring reliable evidence and communicating this evidence to other stakeholders. This helped to inform relevant actions on the seed

sector. It also helped to pilot-proof their concept and package the information so that an alternative seed delivery system could be established to complement the certified seed system. Investing in staff as well as stakeholder relationships was important. Leadership was key in all of this. 'We need to monitor to learn and not only for accountability to the donor' (Patrick Oyee).

Insight 7: There is a need for a comprehensive sector and programme management information system

There is a need for an integrated information management system for the seed sector; this is something that stakeholders brought up. The programme started to develop a seed tracking and tracing system for forecasting and information on seed availability and demand. This system can provide relevant information to lobby for government support and investment and to guide the National Agricultural Research Organisation in planning their activities for early generation seed, which is the key input needed for farmers to produce certified and quality declared seed. However, a more comprehensive management information system than the seed tracking and tracing system is needed to also capture and help manage better the transformation process towards the outcomes agreed upon by multiple stakeholders. In tracking change, ISSD Uganda staff realized that it was not easy to get all the data needed from all stakeholders. Reasons for this lack of commitment to sharing data was an inactive seed board, which resulted in stakeholders being focused on their own domain of work. A comprehensive information system is needed to inform not only programme management but also, at sector level, to inform sector level decision-making and governance. However, this requires openness and trust by sector stakeholders.

3.5 Reflections

3.5.1 Sector and food system transformation

Reflection 1: Transformation is about major structural, and systems change

'Transformational change by its very definition must be major, must be big, and therefore must be observable and/or measurable. True transformations are hard to miss and easy to document. The challenge is bringing about transformation. The concept of transformation means it is taking on major structural and systems change' (Patton, 2019). In Blue Marble Evaluation, this is referred to as the Transformation Fidelity Principle, which ensures that what is called transformation constitutes transformation. For instance, we often claim to work towards sector or (food) systems transformation, but within programmes we can only work towards generating incremental changes in a sector. Box 3.4 shows that transition and transformation are almost the same.

Box 3.4: Sector transition or sector transformation?

- Transition and transformation are not as distant concepts as one might think. In fact, they are often used interchangeably to point to the need for large scale systemic societal changes, like a sustainable and just society. Both terms 'provide nuanced perspectives on how to describe, interpret and support desirable radical and non-linear societal change'. These nuances relate partially to their etymological origins but significantly to their use by different scientific communities to understand and interpret system changes.
- A nuanced perspective distinguishing the two concepts can be observed across four dimensions of system changes, including (a) system focus, (b) dynamics and processes, (c) normativity, and (d) agency and governance. The two concepts focus on adaptive complex systems, but transition often refers to social, institutional, and technological changes in subsystems such as energy, mobilities and cities, while transformation relate more often to large-scale societal change processes from local to global levels and with socio-ecological interactions.
- In relation to dynamics and processes, the two concepts assume complex and uncertain system patterns and mechanisms and recognize the existence of path-dependency, emergence, and thresholds. The concept of transition is more related to understanding how non-linear change occurs, while transformation relates more to identifying emergent patterns of change and their effect on a set of outcomes.
- The normative stance of the two concepts allows for contested system change which can be desirable or undesirable. The concept of transition however focuses on moving from an unsustainable to a sustainable system state, while transformation focuses on creating safe and just operating spaces to avoid undesirable system change.
- Finally, in terms of agency and governance, the two concepts involve multi-actor processes to foster innovation, learning, collaboration and knowledge integration. Applying the transition concept, the process involves developing disruptive interventions to support a transition to sustainability while transformation focuses on responding to the implications of change, monitoring the individual motives and values supporting transformation.

Source: Hölscher et al. (2018)

Reflection 2: Transformation needs adaptive governance

Patton in UNFSS (2021) suggests that transformation is not a programme. Rather, it is multi-dimensional, multi-faceted, and multilevel, cutting across national borders and intervention silos, across sectors and specialized interests, connecting local and global, and sustaining across time. Unlike programmes, transformation is not time-bound, but depends on interactions. Sector transformation cannot be managed like a programme, although these can contribute to the transition of a sector. It takes leadership and governance to really, and adaptively, transform a sector.

Such a nuanced distinction between the two concepts of transition and transformation was highlighted in the ISSD Ethiopia Programme, for which we had a conversation with two of its team members supplementary to the more detailed analysis of the four cases. The team members see subtle differences between the two terms 'system transformation' and 'system transition'. To them, 'transition' puts more emphasis on the process unfolding through time for system transition, while transformation is a more relevant concept to depict the scale or depth of change. Given ISSD Ethiopia has a sector focus there is indeed a preference for a more precise term of 'system transition'. The research team has used the term 'transformation' to emphasize depth of scale of transformation as an outcome such as the development of local seed business (LSB) (Sisay et al., 2017) and direct seed marketing (DSM) in Ethiopia (Hassena Beko, 2017; Borman et al., 2022b).

Reflection 3: Strategic and systems based SME&L needs to support sector and food systems transformation

Whilst one can't steer sector transformation, it is very well possible to contribute towards an overall transition towards sector transformation. Monitoring for sector and food systems transformation needs a theory of transformation. Within this, one needs to consider how to maximize synergies between multiple outcomes and how to reduce trade-offs between these outcomes. For this purpose, one needs to look for deep (as opposed to shallow) leverage points in the system. It is also important to monitor the relationship between elements of a system. Furthermore, one needs to monitor how context influences change in the system and look at trends and developments that may influence the outcomes of a sector or food system in the future. Stakeholder engagement is key in this.

3.5.2 Guidance for SME&L to support adaptive programme management

Reflection 4: Adaptive management needs to monitor the programme ToC and its context

For a programme that contributes to sector transformation, it is important to adaptively manage towards envisaged outcomes. This involves collaboratively developing and monitoring a programme ToC but also monitoring context. Context includes what is happening in the sector at large but also outside the sector, such as for example the political context (for example, instability, conflicts but also governance), socio-economic conditions (for example, inflation, unemployment) and environmental conditions like drought and flooding. These conditions, factors and stakeholders can have an important influence on not only the outcomes of a programme but also the dynamics in and outcomes of a sector.

Reflection 5: Programmes can contribute substantially to sector transformation

Programmes and programmes have a fixed time span, fixed budget, limited boundaries and often limited room for manoeuvre. Having a programme ToC that aims towards sector transformation (i.e., a sector ToC) and that also monitors the sector in collaboration with stakeholders, can be beneficial in making substantial contributions towards sector change.

Reflection 6: Sector governance needs leadership support and stakeholder engagement

Programme leaders need to see SME&L as an integrated approach for learning and adaptive management; SME&L is perceived as an instrument and a driver for sector change. This governance of a sector needs leadership support and stakeholder engagement.

3.5.3 Guidance for SME&L to support sector transformation

Below several elements of the analytical framework are elaborated in terms of lessons learnt in relation to strategic guidance, SME&L and communication. Effective operations as element is not included in the reflection as there were no specific lessons to be shared. Orientations or principles are explained in the next section on principles. And capacities and conditions are elaborated on in the last section of this chapter. Some of the lessons learnt overlap with the principles.

Strategic guidance for sector transformation

Reflection 7: Make outcomes and boundaries explicit; integrate synergies and minimize trade-offs

A focus on sector transformation does not imply a right to food for all. *'Guarantee the right to food - conceptualize food as a right, rather than merely a market-based commodity for a unified and universal framework for food systems transformation'* (Patton, 2021). Using a food system lens can help to broaden the focus from programme to sector to a food system. This also brings us to the point of sector or food system transformation outcomes. In the design of programmes, these need to be made explicit. This also implies engaging in critical reflection on possible synergies and trade-offs between these outcomes, from the design onwards. In sector programmes, there is often an economic outcome that gets more attention than for

example food security and nutrition-related outcomes or environmental outcomes. These are sometimes considered as an add-on rather than different lenses that are integrated right from the onset of the design of a programme. One can decide to develop a ToC or a theory of transformation that is inclusion and environment centric.

Reflection 8: Use a theory of sector transformation connecting dimensions, levels and stakeholders

To support sector transformation, one needs to go beyond designing a ToC to support transformation. UNFSS (2021) and Patton (2021) refer to a theory of transformation which includes multiple theories of change. 'A theory of change specifies how a programme or programme attains desired outcomes. Transformation is not a programme. It is multi-dimensional, multi-faceted, and multilevel, cutting across national borders and intervention silos, across sectors and specialized interests, connecting local and global, and sustaining across time. A theory of transformation incorporates and integrates multiple theories of change operating at many levels that, knitted together, explain how major systems transformation occurs (Theory of transformation principle)' (BME, 2023). This has implications for the way we currently work with programmes that support sector transformation. For a programme, we can have a theory of change, with multiple outcomes. But a programme cannot cover a full sector. And having multiple outcomes does not necessarily imply integration of multiple dimensions with stakeholders at multiple levels in a sector. For sector transformation one can collaboratively design multiple, interconnected theories of change that together contribute to an overarching theory of sector transformation. The design of this theory of sector transformation should be evidence-informed so that envisaged outcomes are contributed towards through interventions that aim to change behaviour and tackle leverage points in a sector.

ME&L to support strategic guidance for sector transformation

Reflection 9: Engage in sensemaking for adaptive management and governance

Sector transformation is complex and dynamic. It requires the engagement of different stakeholders to critically reflect on what works in each context and what is needed for sector transformation. This collaborative sensemaking relates to reflecting on how a sector changes and what the contribution is of different programmes, in order to make informed choices for sector transformation. Using a food systems lens during this reflection and learning can further support strategic directions for the transformation of a sector. Sensemaking requires particular attention to context, as different solutions are needed for different contexts through place-based innovation and adaptation. Any learning/adaptation needs to be done through ongoing adaptation in the Theory of Transformation for Food Systems (UNFSS, 2021). Learning/adaptation also needs to be done in a timely manner. This relates to the principle *Act with a sense of urgency in the short term and support resilient sustainability for the long-term* (Time Being of the Essence Principle, BME 2023).

Reflection 10: Engage stakeholders in learning and adaptation for governance of sector transformation

There are many challenges in a sector that need to be addressed for the sector to transform and contribute to desired transformation outcomes. To understand these challenges, identify leverage points and implement possible solutions, the close collaboration of stakeholders is needed. Having a platform where these stakeholders meet is a useful way of supporting a sector to transform towards shared goals; for example, the Rwanda Horti platform. This platform needs to meet the diverse needs and interests of the diversity of stakeholders, ensuring that also the most vulnerable people benefit. Learning and adapting is important, and this needs an open environment where people can speak freely about not only successes but also failures. This relates to *Learning and adaptation through ongoing adaptation and Ensure openness and transparency throughout* (UNFSS, 2021).

Reflection 11. Monitor beyond indicators and programmes and towards transformation

'Transformational change by its very definition must be major, must be big, and therefore must be observable and/or measurable. True transformations are hard to miss and pretty easy to document. The challenge is bringing about transformation. The concept of transformation means it is taking on major structural and systems change.' This refers to the Transformation Fidelity Principle: *Ensure that what is called transformation constitutes transformation* (BME, 2023). This also has implications for the monitoring of sector transformation. It is important to monitor whether a sector is changing towards envisaged outcomes. Understanding a sector and how it changes requires moving beyond indicators and beyond solely focusing on a programme when monitoring. It involves not only assessing programme outcomes but also sector outcomes and how different initiatives and developments have influenced these outcomes. It requires a good understanding of a sector, and this cannot always be pinpointed in indicators. For example, to monitor changes in an enabling environment one needs to look at how policies and regulations change but also how informal processes and structures influence the outcome of a sector. Or how market systems can work better to deliver impacts for (disadvantaged) people. These processes and issues are not easy to capture in simple indicators. All these processes and elements in a system influence each other – change in one area can positively or negatively influence another part of the system and herewith the outcomes of a system. Therefore, it is important to not just focus on indicators but maybe even more

so on relationships between elements of the system and how these influence the outcomes of a sector transformation process. This requires the engagement of different stakeholders in a sector and making explicit how their actions and the context are interrelated. SME&L for sector transformation also requires looking beyond small changes in a sector. This requires stakeholders to critically reflect on whether the changes they have observed are truly transformational for the sector and beyond. Donor requirements in reporting attribution of programme activities to sector change using simple indicators and requiring big surveys with counterfactuals can give a false sense of security in tracking sector change and reduce the resources available for effective SME&L for transformation in dynamic contexts of sector change.

Reflection 12: Engage in flexible monitoring that captures context and helps with foresight and scenarios

Context awareness is crucial in generating evidence to inform decision-making towards sector transformation as a sector, because context is complex and influenced by many stakeholders and factors. A Blue Marble Evaluation principle is about the Anthropocene as context principle: *Know and face the realities of the Anthropocene and act accordingly*. Understanding how the context we live in influences our actions and processes is important; we need to take this understanding on board and integrate it with other evidence on why and how a sector changes. Context monitoring involves looking at the geographic situation or position (for example, being landlocked), governance processes, and structures. Keeping an eye on trends and developments involves, for example, monitoring and predicting conflicts; the political climate; the economic situation; climate change-related conditions like drought and flooding; pandemics (for example, COVID-19); and other impactful trends and developments; and how all these affect the outcomes of a sector. For example, what is the impact of COVID-19 on people's livelihoods and food security and nutrition situation? What are the possible food security and nutrition scenarios with the current trends in climate change and economic developments? In order to take timely and relevant decisions, it is important to understand how the context changes, and how this affects or may affect the future. Monitoring, predicting and analysing context dynamics must always be done systemically - that is, with regard to the systems involved. This will improve the relevance, effectiveness and impact of decision-making in sector transformation.

Reflection 13: Monitor synergies and trade-offs between outcomes

It is also important to monitor trade-offs between envisaged outcomes of sector transformation. Many sector programmes have an economic focus but tend to have less attention to, for example, environmental outcomes or inclusion. It could very well be that focusing on environmental outcomes contradicts socio-economic improvements for some stakeholders. Monitoring these trade-offs and showing evidence on possible synergies and trade-offs between outcomes of a sector is important to share and discuss among different stakeholders. This can result in strategies like do no harm or even better, improve situations (for example, in terms of environment and inclusion), and lead to maximum impact.

Reflection 14: Use context-specific methods and approaches that capture a variety of evidence

The Blue Marble Evaluation Bricolage Methods Principle is about conducting useful, context specific monitoring: *Conduct utilization-focused evaluations incorporating Blue Marble Evaluation principles to match methods to the evaluation situation. Context matters in designing evaluations. Intended purposes and uses matter, as does identifying and working with primary intended users. Customization and contextualization rule* (BME, 2023). This implies using a diverse mix of methods and approaches to provide comprehensive insight on changes at multiple levels of a sector. This ranges from regular monitoring to studies; following trends and developments; and capturing stakeholder perceptions and stories on sector changes and contexts.

3.5.4 Communication

Reflection 15: Use different forms of communication based on context specificity and norms and values

Communication is not just about communicating SME&L findings, such as for example *successful stories* of HortInvest in Rwanda or *change stories* of HortiFresh in West Africa. Whilst communication has not been explicitly mentioned, the importance of stakeholder collaboration in these sector transformation processes means that attention needs to be paid to communication. To become more inclusive, different forms of communication need to be used, based on context specificity and norms and values. This can also help to minimize the risk of conflict and solve conflicts between different stakeholders or groups. In the M4SDI framework, *communication* is *the glue that binds it all together*. This holds true for adaptive management processes, especially where stakeholder interaction is required.

3.5.5 Key principles to guide SME&L for sector transformation

What emerged from the above resonates in some key principles that can underpin SME&L and adaptive management approaches to support sector transformation towards food systems transformation.

Reflection 16: Recognize complexity and apply systems thinking

This is important in the M4SDI approach but also emerged from the cases and the authors' own experience. The work by Patton for UNFSS (2021) mentions recognizing complexity as a principle. A Blue Marble Evaluation principle includes a Global Thinking Principle which involves applying *whole Earth, big picture thinking to all aspects of systems change* (BME, 2023). Sector transformation is complex and this needs to be recognized. It involves systems change which requires systems thinking.

Reflection 17: Yin-yang principle – harmonize conceptual opposites

This Blue Marble Evaluation principle is about harmonizing conceptual opposites. There are many different stakeholders with many different perspectives in a sector. For a sector to transform towards common goals it is important to make use of a diversity of perspectives to understand and inform holistic directions and actions in a sector. *'...(use) wholeness of perspective as a guide to wholeness of understanding to inform holistic action. To achieve that sense of wholeness necessitates seeing and engaging with different perspectives, harmonizing opposites, integrating divisions, transcending boundaries, and overcoming polarities'* (BME, 2023). In Uganda, the ISSD Plus programme was able to bring in the diversity of perspectives in transforming the seed sector by engaging not only with supporters but also with opponents and coming up with a common agenda on quality seed.

Reflection 18: Collaborate with stakeholders, value diversity and engage inclusively

The M4SDI approach is about collaborative learning in PME processes for evidence-based adaptive management to enhance ownership, relevance and effectiveness. Engaging stakeholders is crucial in these processes; this was done in the case studies mentioned in this chapter. The results of the dialogues for the UNFSS (2021) also stressed the importance of collaboration and inclusion and that these processes need to be facilitated to enhance synergies, manage conflict and minimize trade-offs between outcomes of a (food systems) transformation process. This can be seen in the following principles: *Engage collaboratively in partnerships*; *Align and integrate coalitions and solutions; Facilitate conflict resolution and negotiate trade-offs; Value diversity & engage inclusively; Treat everyone as a stakeholder in food systems; and Amplify and empower historically excluded voices (women, Indigenous Peoples, youth, and smallholder farmers and other small-scale producers)* (BME, 2023). This calls for a strategy not only about which stakeholders to engage with but also thinking through who to invite to the table and who to target. Having targets for women and youth engagement is not enough. One needs to think through who exactly to engage, and how to do this to contribute to equal opportunities for all. But as many sector programmes focus on improving production (for example, of crops, dairy, and fish), which requires collaboration with the private sector, the benefit is not necessarily for those that really need it, the vulnerable. Often assumptions are made about the benefits of increased production. Paying attention to inclusion needs to be integrated from the design of initiatives onwards.

Reflection 19: Adapt to context and localize

Adapting to context is another important principle in the M4SDI approach. This involves context monitoring and collaborative sensemaking to ensure that options for change are relevant to the context. The work for the UNFSS also speaks about this: *Contextualize and localize - localized food systems, in which different solutions will be needed for different contexts through place-based innovation and adaptation.* The Blue Marble Evaluation principles, too, include a principle about context: *Anthropocene as Context Principle. Know and face the realities of the Anthropocene and act accordingly* (BME, 2023). This is particularly important as we now face crises, not only in relation to climate change and biodiversity, but also others (such as Covid-19), that affect the whole planet. In Rwanda, the HortInvest programme was able to support the horticultural sector adapt from its focus on export to a focus on the domestic market after Covid-19 restrictions on export to Europe. Using a bottom-up needs assessment and design helped HortiFresh in West Africa to inform the work to be done in commodity clusters.

Reflection 20: Integrate interconnections within and across levels and silos

This global principle is a Blue Marble Evaluation principle: *Global systems change must be contextually sensitive and grounded in the interactions between local and global processes and scales of change* (BME, 2023). This was also very clear in the sector programmes we analysed. What happened at international level, also influenced actions and results at national and local levels. This links to the ability to be context-aware and to adapt in response to a changing environment. By engaging with stakeholders, and monitoring trends and developments, it is possible to connect the dots. In particular, the initiatives that worked across sectors were able to have a broader focus and outcomes. Using a food systems framework can be helpful in this respect, both in terms of design as well as monitoring perspective.

3.5.6 Capacities and conditions

Reflection 21: Ensure leadership, effective competences and adequate flexible budgets

To ensure all these SME&L processes work effectively, all the necessary capacities and conditions need to be in place. This includes, for example, ensuring that people have the competencies to do strategic guidance, that incentives are in place to support adaptive management processes, and that there are clear roles and responsibilities and an adequate budget. During the interviews, especially, the importance of good leadership and an adequate budget were mentioned. As sector transformation is complex and needs the engagement of multiple stakeholders, it also requires good leadership to support the transformation processes. Leadership needs to emerge from different stakeholder groups to bring about fundamental changes in a sector. Leadership is needed to help vision a future for a sector but also to build relationships and stimulate collaborative learning. This requires the leadership to be systems and strategic thinkers.

The M4SDI guide stresses the importance of leadership for programmes; but governance of a sector is beyond programmes. The work of Patton refers to *Acknowledge and support the primacy of government responsibility and accountability* in the theory of transformation of food systems (Patton, 2019). Engaging government is crucial and so is building collaborative leadership. Furthermore, an adequate flexible budget is needed, as sector transformation is complex and needs flexible SME&L that consists of a wide array of methods and approaches to support evidence-based decision-making.

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4. How to steer transformation of agro-food sectors in a direction that is deliberately inclusive

Thies Reemer, Thomas Tichar, Eunice Likoko and Judith Jacobs

This chapter addresses the question: how is the concept of inclusion of marginalized groups understood and implemented within sector transformation programmes, and how can positive impact on marginalized groups be increased?

Photo: Thies Reemer

4.1 Introduction

This chapter addresses the question: *how is the concept of inclusion of marginalized groups understood and implemented within sector transformation programmes, and how can positive impact on marginalized groups be increased?* We intend to make more explicit what motivates, helps and blocks decisions on inclusion strategies and how these can be improved in sectoral transformation initiatives. In doing so we aim to move on from the generic *inclusion is good* rhetoric and evaluate the implicit assumption that an inclusive strategy in sector-specific programmes contributes to, rather than detracts from, the business-oriented objectives of sector transformation.

Over 2 billion people work in food systems globally (Castañeda et al., 2018; Woodhill et al., 2020). Production of agricultural products and other activities along agricultural value chains are a vital, albeit often insufficient, source of livelihoods for many otherwise marginalized people. About 80% of the extreme poor, and 75% of the moderate poor, live in rural areas. Of these, 76% and 60% of rural workers, respectively, are in agriculture (Castañeda et al., 2018). This marginalization takes multiple forms – such as discrimination in the access to resources, information and markets - and is often based on factors like socially ascribed identity, socio-economic status and climate vulnerability.

In recent years, publications on food systems have gained influence at policy levels - they provide frameworks and describe processes of transformation and address governance. Sector transformation is increasingly positioned within the larger framing of food system transformation. Governments, donors and development partners invest time, energy and funds to improve the socio-economic status of the marginalized in sector transformation programmes.

Inclusion is often mentioned in these as a catch-all term, without much explanation of its meaning and implications for design, implementation and programme impact. One could say the term *inclusion* is over-used and under-defined. This makes it hard for practitioners and programme teams to make deliberate choices for inclusion strategies, and to be transparent about these. Policymakers are unable to match the variations in needs of marginalized populations to ensure that strategies suit this context as well as the available resources (FBKP, 2018).

Though impact is often claimed to be inclusive, viewpoints about inclusion, motivations and reasons to include strategies in programmes differ greatly and are often not articulated. Still, these can have a major influence on how programmes deal with exclusion and inclusion at the design and implementation stages. For example, targeting enterprises in the formal sector for investments, while assuming that the benefits will trickle down to people from low income groups in the informal sector. Or addressing underlying barriers for specific groups marked as marginalized, as part of a push-up approach to trigger substantive sector transformation.

More broadly it is recognized that food systems and specific sectors include actors that hold contrasting interests; trade-offs or compromises are required for the sector to develop but which may benefit some actors more than others and might increasingly marginalize some. Further complicating this is that agriculture, by nature, is a relatively high-risk activity and becoming increasingly so due to climate change.

4.2 Methodology

This section describes the process that was used to understand inclusion in a sector transformation context. The following was used as the main learning question:

How is the concept of inclusion of marginalized groups understood and implemented within sector transformation programmes, and how can positive impact on marginalized groups be increased?

The following sub-questions were used to guide the collection of information and presentation of findings:

1. What concepts, definitions and frameworks are used in literature to describe inclusion in the context of the SDGs?
2. How is inclusion reflected in sector and food system frameworks?
3. How is inclusion reflected in sector transformation programmes?
4. What helps and inhibits sector transformation professionals to promote inclusiveness?

To answer these research questions, the following steps were used:

a) A literature review was conducted to identify the main concepts, definitions and frameworks on inclusion, using the angle of the Sustainable Development Goals (SDGs).
b) An assessment of several sector and food system frameworks was done to identify entry points and limitations that they provide for the inclusion agenda.
c) An assessment of documents (proposals, reports, evaluations) from both completed and ongoing sector transformation programmes was carried out using the UNSDG framework of Leaving No One Behind.
d) Conversations (interviews and a workshop) were held with professionals working on sector transformation initiatives.
e) Reflection and analysis of the findings from the literature review, the assessments, and the conversations at different levels was done. These reflections focused on implications on various levels such as: (i) sectors; (ii) programmes; (iii) emerging principles, (iv) guidance notes; and (v) role of frameworks.
f) Overall conclusions were drawn about the inclusion from the reflection exercise.

Following the introduction and methodology in the first two sections, section three gives an overview of the findings that include concepts from literature review, assessment of food system frameworks, assessment of programmes and analysis of conversations. Section four gives a reflection on the main inclusion insights derived from this study and this if followed by the concluding reflection in section five.

4.3 Results

4.3.1 Inclusion in literature

Responding to the first sub-question, this section introduces common concepts, frameworks and definitions of 'inclusion' based on the literature review. The concept of inclusion can be studied from many different angles. Sector transformation programmes are commonly formulated within the 2030 agenda for sustainable development. The SDGs are often used as an entry point in studying inclusion. Food system transformation initiatives use the SDGs as a reference point and therefore this chapter uses this as a point of departure.

All UN Member States pledge to *eradicate poverty in all its forms, end discrimination and exclusion, and reduce the inequalities and vulnerabilities that leave people behind and undermine the potential of individuals and of humanity as a whole* (UNSDG, 2019). This is summarized in a now commonly used principle: Leaving No One Behind (LNOB). As an example, the most recent Dutch policy document on international cooperation (MoFA, 2022) states: *In all its activities, the government makes every effort to work according to the 'leave no one behind' principle.* The UN-SDG provides definitions and frameworks that have been translated in plans and policies for contributing to the SDGs worldwide; it does this also in its guidance how to operationalize LNOB.

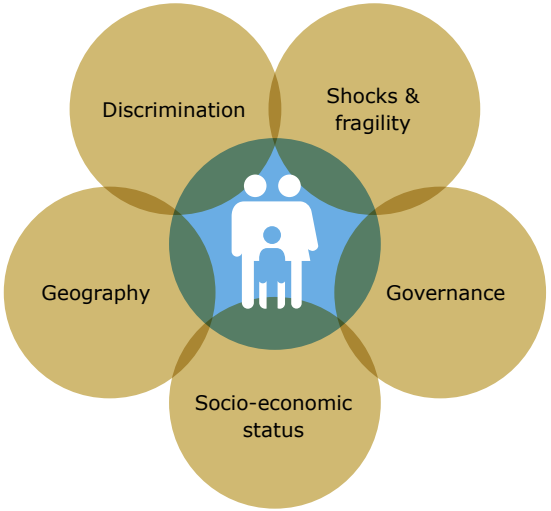
Based on this human rights-based approach, the UNSDG framework sets out three concepts:

a) Substantive equality of opportunity and outcomes for all groups
b) Non-discrimination
c) Equity, pointing at the broader concept of fairness in the distribution of costs and benefits.

UNSDG identifies five factors which help to understand the different grounds based on which people and groups are excluded from services, programmes, initiatives and the like. These are illustrated in Figure 4.1 and they include:

a) Discrimination on the basis of assumed or ascribed identity or status, such as gender, ethnicity, age, sexual orientation, class, education levels, disability and religion or belief systems.
b) Geography such as isolation due to location or spatial exclusion.
c) Vulnerability to shocks and fragility: populations that are vulnerable to natural disasters, crime, violence and economic, climatic or other shocks.
d) Governance such as laws, policies, taxes, budgets, civic space.
e) Socio-economic status such as multi-dimensional poverty, household composition, access to income and assets, or livelihood strategies.

Figure 4.1: Five factors of Leaving No One Behind (LNOB)



Inspired by and adapted from: UNDP, 2018.
Note: People at the centre face multiple reinforcing disadvantages and deprivations (intersectionality)

In unpacking the concept of inclusion, it is helpful to also understand exclusion. In practice, most people/groups face more than one kind of deprivation, disadvantage or discrimination leading to exclusion and marginalisation. People who find themselves at the *intersection* of multiple factors of LNOB (see Figure 4.1) are most likely to be excluded.

Social inclusion is defined as the process of improving the terms of participation in society, particularly for people who are disadvantaged, through enhancing opportunities, access to resources, voice and respect for rights (UNDESA, 2016). Gupta et al. (2016) state that social inclusiveness implies applying five principles:

- Ensure equity principles to share the opportunities for development.
- Include the knowledge of all.
- Build targeted capacity building to enable effective participation.
- Enhance protection for the poorest.
- Engage all in the politics of development.

Social exclusion emphasizes that the deprivations that people recognize largely depend on societal norms and values, which translate in judgements that people use and criteria they adopt (Khan et al., 2015). What is considered really unfair in one country or society may be considered normal in another society. Understanding how social exclusion occurs is helpful for developing inclusion strategies. When people are excluded, a combination of *individuals, institutions and systems* are likely to be at play (Burchardt et al., 2002), which often make it complex to address.

Kabeer (2009) breaks exclusion down into three categories, which the authors interpret as follows:

a) It can take place in a conscious or unconscious manner. Unwritten rules of the game can cause exclusion of people or groups who might threaten the status quo. Whether it happens consciously or unconsciously can make a big difference when trying to address exclusion.
b) It can be intended or unintended. Deliberate/intended strategies can be at play to exclude individuals or groups. For example: people who lack assets to use as collateral are often excluded deliberately from saving and credit groups.
c) Explicit or informal strategies can be used to exclude individuals or groups. For example: an explicit diversity policy that is implemented in recruitment processes can help to recruit new colleagues with different cultural backgrounds or from different age groups. However, informal organisational culture can operate to exclude them.

A critique of social inclusiveness is the *underlying moral meta-narrative* that assumes that social inclusion, as the opposite of social exclusion, is inherently good and desirable (Hickey and du Toit, 2007). This often ignores the ways in which the terms of inclusion can be problematic, disempowering or inequitable (Khan et al., 2015). Lastly, total exclusion on all dimensions is rare. Many impoverished and exploited people are workers, consumers or otherwise. Moreover, the 'terms of how they are included' can be highly adverse; Hickey and du Toit (2007) refer to this phenomenon as adverse inclusion.

4.3.2 Inclusion in food system frameworks

To answer the second sub-question *how is inclusion reflected in sector and food system frameworks?,* we reviewed six different sector and food system frameworks. We used for comparison the food system frameworks by Dengerink and Brouwer (2020) as a starting point and added the integrated sector and food system framework of Borman et al. (2022). Table 4.1 gives an overview of differences in the entry points and the limitations that the models and frameworks provide for developing inclusion strategies, using the five LNOB factors as the main reference.

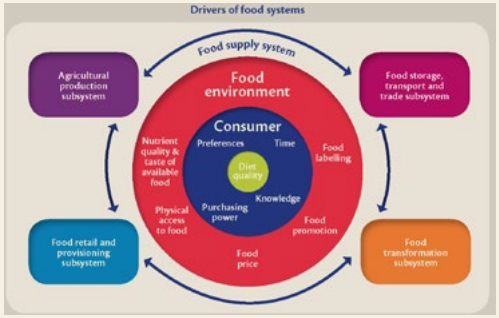
The entry points for addressing exclusion or developing inclusion strategies appear very different in each framework reviewed. The five factors of LNOB often refer to the informal sphere. For example, exclusion in the form of *discrimination based on socially ascribed* identities is mainly driven by mental models, social norms and beliefs. Where frameworks provide space for informal dimensions (such as culture, attitudes, norms), the link with exclusion and inclusion is more easily made. Where social and economic are combined in socio-economic, there seems to be an implicit focus on the economic outputs. The HLPE (2017) model appears to show most entry points for the inclusion agenda.

In a number of frameworks on sector transformation (Van Berkum et al., 2018; Borman et al., 2022a), social inclusion appears to be used in relation to poverty (mainly defined in monetary terms) and food insecurity. Stating that food system transformation can also leave people behind, they refer to *farmers, the rural poor and socio-economic inclusion*, all related to monetary poverty or socio-economic factors. This contradicts literature about poverty where the multi-dimensional nature of poverty is stressed (Bray et al., 2019). Several of the frameworks use social exclusion and poverty synonymously. This has been criticized for various reasons. Firstly, because exclusion can be stemming from many other factors beyond (socio-) economic status, such as socially ascribed identities (gender, ethnicity, age, sexual orientation, class, education levels, disability and religion or belief systems), civic space, vulnerability to shocks, and isolation due to location (see the five factors of LNOB). Secondly, because this fails to capture the idea that social exclusion can worsen with movements out of poverty (Fischer, 2011). For example, women's empowerment, when not managed well in the cultural context, can lead to adverse inclusion of women in their households and community.

Table 4.1: Analysis of various food systems models and frameworks, zooming in at entry points and limitations for the Leaving No One Behind (LNOB) principle

1 Drivers of food systems

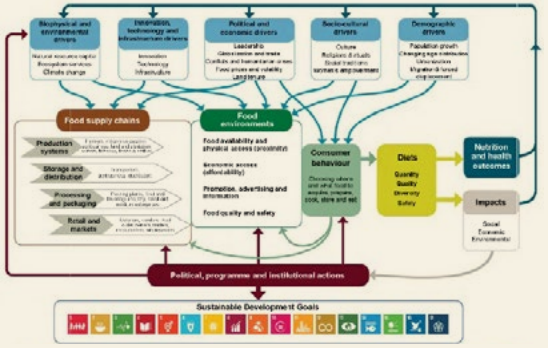
Model Global Panel (2016)



- No explicit inclusion entry points; it does not mention any social drivers or social dimensions of general drivers.
± The model puts the main focus on healthy and nutritious consumption of food as the main outcome. Consumer purchasing power could be used as an entry point to address exclusion based on monetary aspects of poverty.

2 Food systems for diets and nutrition

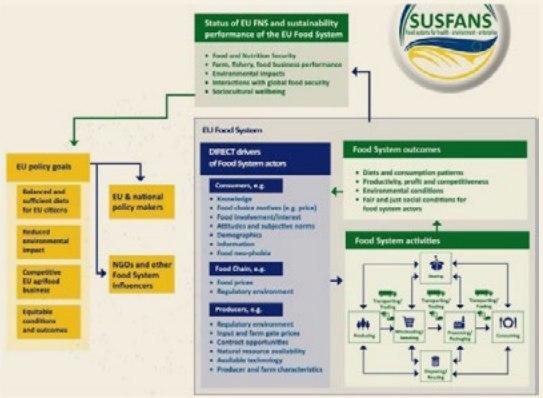
Model HLPE (2017)



+ Five groups of drivers are distinguished. Economic (political and economic) and social (socio-cultural) drivers are separated. *Demographic* is added including migration and forced displacement. Drivers such as culture, religions and rituals, social traditions and women's empowerment are explicitly mentioned, proving entry points.
+ Explicit attention to the role of political, programme and institutional actions and their impact on food supply chains, food environments, consumer behaviour and food system drivers. *Institutional* is an entry point.
+ At the level of impacts, *social* is also separated from *economic*.
+ All the SDGs are indicated in the model, which makes the link to the LNOB framework easier.

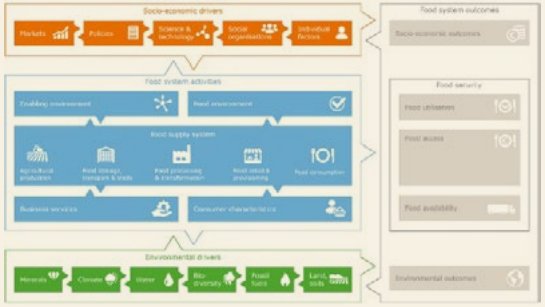
+ *positive,* ± *neutral,* - *negative*

3 **European Union food system**
Model SUSFANS Zurek, M. et al. (2018)



+ It focuses on drivers of food system actors and includes *attitudes* and *subjective norms*.
+ In the outcomes, *fair and just social conditions for FS actors* stands out as an entry point for inclusion. Socio-cultural wellbeing is considered part of the sustainability performance. These are linked to EU policy goal *equitable conditions and outcomes*.
- Attitudes and subjective norms is limited to drivers in the consumers category only, suggesting that these are not relevant in the food chain and for producers.
- Drivers for food chain actors and producers are mainly formal, like regulations, prices, available technology etc.

4 **Conceptual food system** *Van Berkum et al. (2018)*

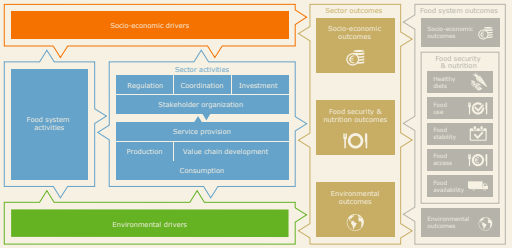


- The model combines social and economic in one category. By always using the money symbol, the monetary economic dimension is at the forefront.
- *Enabling environment* in the blue boxes of activities would logically influence inclusion and exclusion. It is explained as the factors 'transport, regulation, institutions and research infrastructure.' Apart from 'institutions', most of these factors can be understood in the formal sphere, while exclusion mainly happens in the informal sphere.

± The model provides the *socio-economic* sphere in food system outcomes and drivers.
± Drivers are divided into five categories (the orange boxes). *Social organisations* and *individual factors* could be used to indicate drivers of inclusion and exclusion of individuals and groups in the food system, although this is not made explicit.
± Enabling environment (in food system activities) could capture the institutions influencing inclusion and exclusion, but this is not made explicit.

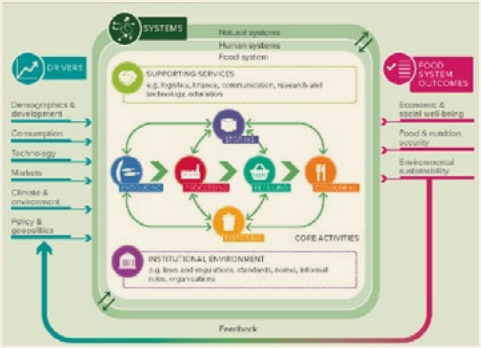
+ *positive,* ± *neutral,* - *negative*

5 **Integrated sector and food system framework**
Borman et al. (2022)



- One can assume that socio-economic drivers includes social organisations and individual factors as above. However this is not specified. Entry points in the informal sphere – such as culture, social norms, traditions – are lacking.
- With the money symbol for socio-economic – this is further narrowed down to a monetary / economic focus.

6 **Food systems framework** *Woodhill et al. (2020)*



- In the food system drivers there are no explicit entry points on exclusion / inclusion.
- Human systems are mentioned in the model next to food system and natural system, however without providing clear entry points for inclusion.

+ This puts circularity at the heart of the food system activities, and the food system nested inside human systems that are again part of larger natural systems. The model provides some entry points for inclusion: in the outcomes (economic and social wellbeing- the word wellbeing stresses the social, without a symbol of money); and in the institutional environment (includes norms, informal rules).

4.3.3 Inclusion in programmes

To answer the third sub-question *How is inclusion reflected in sector transformation programmes?* we reviewed programme documents, such as proposals, evaluations and reports. We focussed on assessing inclusion at the level of goals, the theory of change, programme targeting, and outreach during design and implementation stages. Out of the concepts discussed in the literature review section (4.3.1), we used the five LNOB factors of *Leaving No One Behind* guiding the assessment. Table 4.2 shares in summary format the results of the assessment of six programmes.

Table 4.2: Results of a document-based assessment of LNOB factors in six sector programmes

Programme* and goals	LNOB analysis $	Examples
HortInvest Rwanda (2017-2021) Aimed at private-sector development and food security in six districts in Rwanda by intervening in the horticulture sector.	• 2 out of 5 LNOB factors were addressed in the proposal: - Socio-economic status (monetary poverty, food & nutrition insecurity) - Discrimination based on socially ascribed identities (gender and age) • The inclusion process is focused on reaching women and youth in activities. • No evidence of changes in norms and mindsets of men and women, or women's empowerment as mentioned in proposal.	• '… will focus on groups that are vulnerable to malnutrition, mothers and infants with poor nutritional status, within households that are food insecure and/or poor.' • '… will report gender disaggregated data (male, female, female headed households, and youth).' • Selecting crops that are preferred by women
HortiFresh Ghana, Cote d'Ivoire (2018-2022) Aimed at sector transformation of the horticulture sector through public-private sector interventions.	• 2 out of 5 LNOB factors were addressed: - Socio-economic status (monetary poverty, food insecurity, nutrition insecurity) - Discrimination based on socially ascribed identities (gender and age) • The inclusion process is focused on reaching women and youth in some activities.	• Youth employment fund which provided grants to small-scale businesses run by young women and men. • Female business accelerator programme that focused on developing leadership mindset and skills in women that run SMEs.
ENSP Ethiopia (2021-2025) Aims at working with the private sector to provide higher quality seed varieties to farmers, including smallholders.	• 2 out of 5 LNOB factors are explicitly addressed: - Socio-economic status (monetary poverty, food & nutrition insecurity) - Discrimination based on socially ascribed identities (gender)	• Gender parity targets for the farmers, entrepreneurs, students, graduates (jobseekers) and for scholarships.
RAISE-FS Ethiopia (2021-2025) Aims at more resilient, inclusive and sustainable food systems in 4 regions, contributing to women's and youth empowerment, sustainable production, enhanced sector performance, food security and nutrition, and an enabling environment,	• Mainly 1 factor of LNOB is addressed in the proposal: - Discrimination based on socially ascribed identities (gender and age). This shows in the component focusing on women and youth and descriptions of target groups.	• Markers for reporting: gender-blind, gender-sensitive, gender-aware and gender-transformative. • Targeting frameworks • Gender and age disaggregated data collection. • Women's Empowerment in Agriculture Index (WEAI) indicators are included in baseline and social norms in RFSA.
GRAISEA+ South-East Asia (example: Vietnam 2014-2018) Aims at policy change to promote respons)ible agribusiness practices, recognizing women as central economic actors, incorporating women's economic empowerment in core business and responsible gender-sensitive investments by financial institutions. Commodities are palm oil, rice and aquaculture.	• 2 of the 5 LNOB factors stands out: - Discrimination, based on socially ascribed identities (focus: gender). This is also made clear in the title and the objectives of the programme. - Socio-economic status (focus: monetary poverty) comes out as the main secondary factor.	• The intervention logic is based on the recognition that financial viability and gender equitable/ sustainable supply chains are not mutually exclusive, and that win-win-win propositions are possible where communities/ environment win, women and men small-scale producers win, and larger businesses win.

** See Annex X for more detailed descriptions of the various WCDI programmes. $ The UNSDG and UNDP framework for LNOB show five main factors, each with several sub-factors /sub-topics, which are also used for the assessment (shown in brackets). Source: Tobing-David, 2017.*

Two programmes had explicit social equity goals and outcomes embedded in the programme logic - RAISE-FS and GRAISEA (an example of the latter is provided in Box 4.2). The others had goals related mainly to sector competitiveness and private-sector development. In all sector programmes, we found biases towards one or two LNOB factors, and the programme design and output choices were also in line with these factors. The most common bias was the focus on *gender and youth*. This focus on youth and gender by practitioners and funders was influenced by the target areas, programme design and a focus on the most excluded groups in the target populations. This can be seen as part of the first LNOB factor of discrimination based on socially ascribed identity. Within this factor, a wide range of socially ascribed or assumed identities were provided, including ethnicity, class, belief system to mention a few apart from gender and age. Socio-economic status is the second factor that comes back frequently in programmes, mostly limited to the monetary dimension of poverty.

4.3.4 The experiences of inclusion by sector programme leaders

To respond to the fourth sub-question, the interviews and a workshop with programme leads provided insights on *what helps and inhibits sector transformation professionals to promote inclusiveness*.

Inclusion was explained in similar ways, with some differences in the way it was expressed. 'To work with everyone' was heard a lot during several interviews discussions. During the interviews and the workshop the following quotes by programme leads stood out: 'It is about who participates, like women, youth and discriminated groups' and (about targeting people) 'a quota of only 50% for women is not inclusion'. During the workshop, the leads of horticulture, seed, aquaculture and fisheries and dairy sector programmes agreed that the current focus is on reaching target groups, sometimes ensuring equal benefits, and not enough about empowering marginalized groups. Reference was made to the 'Reach – Benefit – Empower' framework (Malapit et al., 2020). The leads shared their experiences of inclusion related issues and how these were addressed.

We have drawn lessons from this conversation and show them in summary in table 4.3.

Interviews with sector leads helped to understand some blocking and helping factors for improving inclusion strategies in programmes. Box 4.1 shows these factors in summary.

Box 4.1: What is helping and blocking inclusion in sector programmes

- **Pushback from partners in the consortium.** Partners often want to focus on profitability, sector competitiveness and private-sector growth, and the inclusion of marginalized and disadvantaged groups is often de-prioritized at the design and implementation stages. This counts not only for large companies, also for NGO and public sector partners.
- There seems to be a **general mindset of business development** in sector transformation programmes. Feelings of being overwhelmed by the challenge, some awkwardness, and swimming against the stream, were associated with the topic of inclusion.
+ **An inclusive programme** increases its legitimacy; this is a compelling argument to use with partners.
± **Pressure from donors** was indicated both as a helping and a limiting factor. Efforts in one of the programmes to create an opportunity fund for women and youth, for example, was blocked by the donor. Donor guidelines on targeting, outreach, goals and mainstreaming themes can also be strong triggers for developing an inclusion strategy.
- **Promises made in proposals** are often not met in terms of target groups reached, depth of engagement, scale and sustainability. Yet, there was agreement that if inclusion is not part of the strategy, it is automatically not practiced because the strategy itself sets practice. It is very difficult to bring in at a later stage.
- Strategizing, monitoring, evaluation and learning **(SME&L) is often at the level of a sector** as a whole. Exclusion is not really visible in monitoring and evaluation at that level and therefore feedback loops are missing. Sector leads also expressed that SME&L practices often do not capture unintended effects. Negative impacts on disadvantaged groups are not in the picture, and therefore there is no basis for adaptation. The question was raised whether SME&L works to cover up inclusion failures.
+ **When outcomes related to inclusion** are part and parcel of the programme logic (its goals, the Theory of Change, the title, such as the GRAISEA example) it can provide a mandate and back up the fact that partners need to allocate budget for inclusion and empowerment strategies.

+ helping factors, ± either, - blocking factors

Table 4.3: Summary: shared experiences of the leads of various WCDI sector programmes addressing inclusion in sector transformation programmes

Experiences shared	How inclusion was/is addressed	Lessons
Aquaculture and fisheries 'Up until the late '90s pond fisheries in African countries was almost always small-scale, which meant everyone could get involved. But since early 2000s a shift to larger commercial scale production arose, which shifted ownership to men. Programmes that were gender-blind would inherently benefit the men more.' *Source: Peter van der Heijden, managing several fishery/ aquaculture programmes*	Programmes that differentiate between small-scale (1 pond) and larger-scale (3+ pond) fisheries, and design interventions to address each, help to target women pond-owners' needs while still helping to grow the sector overall through the support of the commercial entities. This may not fundamentally change normative gender roles, but at least it ensures that women benefit.	**Identify & differentiate** Identify different people's specific challenges, and differentiate interventions based on their needs.
Rice The GRAISEA Vietnam illustrates that the rice company faced supply chain challenges (non-compliance to sustainable rice standards) in which the exclusion of disadvantaged groups was a key cause. (case box 4.2 provides more detail) *Source: Oxfam, 2017*	Focus on synergy was realized by deliberately targeting women with services and training and by enabling families to change the unequal division of labour and decision-making. This enhanced farming families' compliance to the sustainable rice standard (see Box 4.2).	**The carrot** Aim to identify synergies that makes working with vulnerable groups a good investment.
Sectors: dairy and horticulture Whether in the dairy, horticulture, or other sectors, medium to large-scale businesses are reluctant to invest in their suppliers or employers – generally due to bad prior experience, not feeling responsible for their welfare, or lack of investment funds. *Sources: Annabelle Daburon and Edwin van der Maden, managing multiple programmes respectively in the dairy and horticulture sectors.*	There are many examples of backward linkages whereby small and medium enterprises further up the value chain have invested lower down through training, organizing, or at least dialogue, to come to a common understanding of quality and quantity minimum standards and the needs of the producers. This requires time and effort but has shown evidence of paying off in the medium term. The programme's responsibility is to facilitate the dialogue and highlight prior success stories that illustrate that collaboration can strengthen a sector.	
Sector: seed While there are medium to long-term benefits for stakeholders to invest in disadvantaged groups, many private-sector actors are primarily focused on short-term results and so reluctant to make this investment. *Sources: Gareth Borman and Mohammed Hassena, who are co-leaders of various seed programmes in Ethiopia; complemented by document analysis (interview in case box 4.3 provides more detail)*	Donors like the Netherlands Ministry of Foreign Affairs set minimum standards for percentages to be reached by gender and age. Programmes should first communicate to all stakeholders what these standards are as an objective to being involved in the programme. Second, and more importantly, develop an inclusion strategy that is both quantitative and qualitative in nature at the start of the programme, and agreed with the donor.	**The stick** Make clear from the start to all partners that the programme has an explicit inclusive strategy that it will stick by.
Sector: seed It is challenging to achieve gender inclusion targets based on an initial strategy because we simply couldn't find enough female applicants in the first year. *Sources: Gareth Borman and Mohammed Hassena, who are co-leaders of various seed programmes in Ethiopia; complemented by document analysis (interview in case box 4.3 provides more detail)*	When a programme has fixed objectives in terms of gender (and youth) it monitors this progress and allows for flexible interventions, outreach strategies, and financing, and looks at how quality criteria can be adjusted to enable greater female inclusion. This more adaptive approach can allow for programmes to better understand the specific challenges disadvantaged people face, and allow them to adjust to address these.	**Learn and adapt** Keep the programmatic and financial flexibility to learn and adapt as the programme progresses.

The programme leads expressed the following needs:

- **Having the right partners.** Suggestions to help with this included having 'unconventional' partners in the consortium with a strong voice to counter profit-oriented priorities; having partners with expertise; and having partners with a strong drive on inclusion.
- **Having effective strategies** and support during the design stage to integrate good inclusion strategies into proposals. Examples of good practice, videos and well-explained cases would all help.
- Generally there is need for **a more intrinsic motivation** for the inclusion agenda within the consortia working on sector transformation.
- Ways to deal with **moral dilemmas** within the limitations of programmes: which target groups to choose?
- Ways and **feedback loops** to articulate the intended and unintended outcomes related to inclusion would help people to learn from mistakes and adapt programme strategies.

Box 4.2: Promoting a sustainable and inclusive rice value chain through multi-stakeholder initiatives that benefit women and men smallholder producers in Vietnam

As part of the GRAISEA programme, Oxfam in Vietnam worked with stakeholders in the rice sector. Gentraco, a leading rice company in the Mekong Delta, was keen to see its Sustainable Rice Platform (SRP)-certified rice exports increase because of increasing international demand. Companies like Gentraco struggle with unstable and unqualified supply of rice in a context of fragmented value chains with little collaboration and high levels of mistrust, salt intrusion and water shortages. Producers struggle with a weak collective voice, limited negotiation skills and options, unfair pricing and distribution of benefits. Women producers face low decision influence, a disproportionate labour burden – including in rice production – while training and services are biased towards men.

The SRP standard is appealing since it can provide higher margins for both the company and the producers as well as for other actors in the supply chain. The programme brought together producers, the rice company, the provincial government, and scientists towards more equally shared benefits and recognition of women's roles.

Based on their gender identity, women were excluded from training and contract negotiation. Yet, with their high, but unrecognized, labour contribution in rice production, they held the key to compliance to the SRP standard. Women first refused to stop the practice of spraying chemicals in rice, since the alternatives all required more labour and effort, while they did not control the benefits of higher prices due to strict gender norms. It took a multi-stakeholder effort to address these exclusionary practices towards inclusive business. The company and government departments started targeting women with services, scientists added social dimensions next to technical dimensions, and families changed their gendered division of tasks and decision-making within their households.

In conclusion, the rice company and the other stakeholders saw a clear business case for addressing social exclusion in synergy with business viability goals. A helping factor was that inclusiveness and gender equality in the rice sector were part of the objectives and the strategy from the start.

Source: Oxfam, 2017

Box 4.3: Adaptive programming in the Ethiopian Netherlands Seed Partnership (ENSP)

Launched in 2021, the ENSP builds on a previous long-term programme (ISSD Ethiopia 2012-2020) to enable the private sector to deliver high-quality seed of improved varieties - which is much needed for food security, nutrition and climate resilience – to farming men and women. The ENSP intends to increase the crop productivity and diversity of 150,000 households by 50%, create 2,000 jobs, and increase the area under sustainable agricultural practices. The ENSP is more emphatically focused on strengthening a competitive marketplace than its predecessor, selecting capable private-sector entities against business viability criteria to work with, and not engaging so closely with government-owned seed enterprises and unions. Given this strategy, it doesn't work directly with smallholders and recognizes that this means poorer people involved in the seed sector will only indirectly benefit from the programme. The intention is to transform the sector as a whole by shifting the balance of power through a greater market share towards the private sector, diversifying the output (more investment in new varieties of more crops, targeting more market segments), and so contribute more meaningfully to food security, nutrition, and income for those involved.

There is nevertheless an explicit focus on women with equal gender parity agreed for the targeted farmers, entrepreneurs, students and graduates (jobseekers). The rationale is that, by understanding and responding to the needs and preferences of the majority young and female population, this can help achieve raising the output of the sector as a whole and so contribute more meaningfully to food security, nutrition, and income. Despite 70% of the Ethiopian agricultural labour force being female and so the incentive to work with women obvious in theory, in practice the challenges are great; business partners chaff against the minimum 50% women requirement. Of the 17 scholarships allocated only one has gone to a woman so far. And of the objective to work with three women-owned businesses, only one has met the quality check.

Just over a year in, the ENSP is looking to adapt its outreach. For example, while scholarships were originally advertised to students enrolling in seed science and technology only, they are now broadened out to other fields like economics, business, marketing, communication or sociology, with an aim to attract more young women. They are also advertising internship opportunities through a more diverse range of media and through women-oriented networks. Due to only one women-owned enterprise meeting the selection criteria for support in domestic seed business, the programme is currently setting up an incubator for emerging female entrepreneurs in seed business and related service provision. This will mean accepting more nascent enterprises that were excluded by previous criteria. The intention is to be more equitable in their strategy to engage with the different groups of men, women, and youth. This involves identifying their respective needs and preferences, and any barriers to their participation in and benefit from activities. Put simply, it is learning by doing, and adapting during the programme cycle.

What are the lessons learned from this? First, while in terms of numbers there is a long-term rationale to emphasizing greater gender inclusion, the short-term needs of the sector make it a challenge given the systemic barriers that women face. Both sticks and carrots are needed to shift stakeholders towards a more inclusive approach. Second, the programme itself must be adaptable over time to adjust to learnings as they come. Having an adaptive management system, including the MEL and financing aspects, is an integral part of the programme, and has been agreed with the donor. This allows for the overall programme to learn from the challenges as they go along, to tweak and make adjustments, and to see what works when putting an inclusive strategy into practice. These lessons learned are summarized in table 4.3.

Sources: Interview with ENSP programme managers; WUR, 2023b, WUR, 2023c

4.4 Reflections

In this section, we elaborate on the reflections about how inclusion is approached at the strategic level in food and sector frameworks, and how it is put into practice in sector programmes. We compiled these reflections during several brainstorming sessions.

We used the LNOB principle to guide the reflections. The reflections are structured according to five topics:

1. Insights on inclusion from a sector perspective
2. Insights on inclusion from the perspective of programmes, including capacities and conditions
3. Principles emerging from the reflection
4. Emerging guidance notes
5. Reflections on the role of sector and food system frameworks.

4.4.1 The sector

Reflection 1: Inclusion is not inherently good

In the interviews, the workshop and programme documents, inclusion was mainly referred to as an outcome. In sectors however, total exclusion is in fact rare, as shown in the literature review (section 5.3.1). What needs to be questioned is the *terms* based on which people are included. This helps to spot exploitative inclusion and focus on improving the *terms of participation* of specific individuals and groups that are likely to be left behind.

Reflection 2: Advancing inclusiveness in sectors is as dynamic as the sector itself

Donors and systems strategizing, monitoring, evaluation, and learning (SME&L; see also Chapter 3) often push targeting and outreach strategies and can contribute to rigid approaches to advancing inclusiveness. This shows in the biases of focusing on single or few dimensions such as gender, age or monetary poverty. The reality is more complicated. Moreover, many sectors in the Global South largely characterize functioning in an informal manner, which is characterized by dynamism and flexibility. This means that people who are disadvantaged can face rapidly changing circumstances and can easily be left further behind, and new disadvantages can emerge quickly. Capacities and systems are needed that can recognize and respond to this.

Reflection 3: Can sectors be vehicles for advancing social inclusiveness?

Sectors offer many entry points and opportunities to advance social inclusion. Sectors provide large platforms to bring stakeholders together towards roadmaps for change, in which social equity goals can be integrated. How to maintain inclusion strategies when commercial viability improves - and power disparities cause already disadvantaged groups to lose their part of the sector– remains a question. It is important to clarify the reasons for pursuing social inclusiveness and show the synergy with the goals that sector stakeholders bring to the table. Perceived tensions can very easily drive powerful sector stakeholders to dismiss or deprioritize inclusiveness altogether.

4.4.2 Programmes, capacities and conditions

Reflection 4: Constraints for achieving inclusion goals: time, budget and context

Translating principles and frameworks for inclusion into practice introduces constraints which can be summarized as time, budget, and context. The more constrained in time, the more challenging it can be to ensure meaningful inclusion. Attaining social justice goals through social inclusion is likely to go beyond programme timeframes. This needs to be acknowledged by donors and implementing organizations in order to manage their expectations. The same is true for budget. The context of a fragile or failed state or region of a country remote from public services and markets is equally limiting. It is therefore important to assess programmes within the wider policy environment (longer term policy cycles, 10-15 years) through which they are legitimized.

Reflection 5: Inclusion can be approached with different assumptions, mindsets and starting points

Generally, there are two major differences: trade-off thinking and synergies-thinking. Trade-off thinking starts with perceived tensions, constraints and the impossibility of including everyone. Synergy thinking starts with mutually reinforcing benefits between business-oriented outcomes and social equity-oriented outcomes. These different starting points are likely to have a great influence on the way programmes are designed and implemented.

Reflection 6: Inclusion can be seen as a trade-off

Within a food systems or sector-specific programme, inclusion can be seen as a balancing act between a number of dimensions, which are themselves influenced by three constraints: time, budget, and context (mentioned in Reflection 4). These four dimensions are illustrated by an inclusion wheel (Figure 4.2) and described in box 4.4. In the inclusion wheel, we have added three rings to help programme teams and partners to think through the following for each dimension: who is directly targeted (who the programme or partners will engage with directly); who is indirectly targeted (who the programme will not work with directly but is expected to benefit from the interventions); and who is not expected to be reached. This makes up a total of 12 wedges (three for each of the four dimensions) to be filled in.

These four aspects of inclusion are interrelated. In trade-off thinking, they are pulling in different directions and in tension with one another. People living in remote areas are going to cost more budget to support than those closer to markets. Small-scale informal enterprises are more challenged to become credit-worthy than registered businesses with a longer track record. And so on and so forth.

Both the order in which these inclusion questions are asked - and how the three constraints of time, budget, and context are addressed - strongly determine how inclusion is treated. For example, asking first how to make a sector more sustainable in a low income country with weak infrastructure could lead to a programme placing more emphasis on scaling up existing businesses in (peri-) urban areas while training (women) farmers to produce more. This may improve yields and processing capacity, and so help transform the sector, but not address the structural disadvantages of low-mobility farmers being price-takers (e.g. exploitative inclusion). On the other hand, a large-scale budget programme aiming to reach 100,000+ poor farmers in remote areas alongside other stakeholders through multiple interventions in parallel over just four years can be well-intentioned but lose sight of a sustainable exit strategy in an effort to drive change at scale. Again, multiple scenarios can be played out in which the perceived tension between these interventions in practice can unbalance the well-meant principles of inclusion. Indeed, the development sector is littered with them. How can this be managed?

Box 4.4: Dimensions of inclusion as trade-off

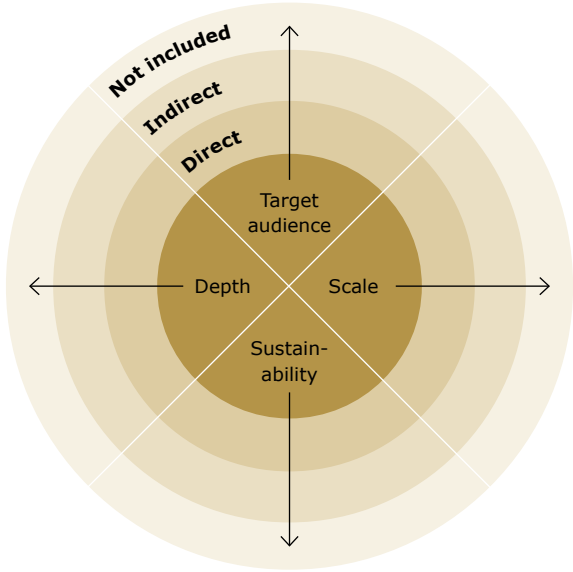
Target audience
How explicitly are disadvantaged people targeted by the programme? How aware is the programme team of these disadvantages and transparent about targeting them? The types of disadvantages people face are in relation to the chosen sector, but also in terms of geography and operating environment. Practitioners need to adapt the factors of LNOB to the specific programme context.

Depth
What is the ambition of engagement in the programme to addressing the barriers people face? For example, a training can be a one-off or repeated, generic or tailor-made, or linked to other interventions that can be short-term or run for the entire duration of the programme. This will translate into whether people are simply reached by the programme or deeper, more systemic change is achieved.

Scale
How many disadvantaged people does the programme intend to reach, both directly and indirectly? And in what way, e.g. from pilot to scaling up, cascading or replication? Starting small and capturing real change could be more beneficial but ultimately reach less people unless combined with an advocacy strategy.

Sustainability
All programmes have, or are supposed to have, an exit strategy; but in what way are they tailored to benefiting disadvantaged people? Tailoring can be at individual, household, community or community level; address micro- or small-scale business viability; improve the operating environment; or aim to change the sector and/or wider food system.

Figure 4.2: Inclusion wheel providing a starting point for inclusion strategies and outreach plans in programmes



Reflection 7: Inclusion as synergy

Advancing inclusiveness can also be seen as reinforcing business development in sectors, as seen in the example of sustainable rice practices in Vietnam (see the case study in Box 4.2 above). When using the inclusion wheel with a synergistic approach, the four dimensions are not seen as tensions pulling in different directions, but as four complementary components of an effective inclusion strategy.

4.4.3 Emerging principles

Reflecting on the conversations held, the interviews done, and the review of literature and sector/food system frameworks, the following principles emerge:

Principle 1: Inclusion strategies and sector transformation have positively-reinforcing relationships.

Mindsets matter when working on sector transformation: starting from the possibility of synergies between inclusion and business viability can lead to better outcomes than trade-offs .

Principle 2: Inclusion is both a process and an outcome

Seeing inclusion as a process helps to make it more tangible and provides a better basis to integrate it in workplans and budgets. Articulating concrete changes in practices and policies can help to phrase inclusion as an outcome.

Principle 3: Inclusion means dealing with dimensions of deprivation, disadvantage and discrimination

Exclusion happens based on multiple grounds, as seen in the Leaving No One Behind framework. People at the intersection of multiple factors of disadvantage and deprivation, such as discrimination due to socially ascribed identity, vulnerability to shocks, socio-economic status etc., are likely to be furthest behind.

Principle 4: Nurture intentions and be transparent about limitations

In line with the pledge to leave no one behind, intentions to include individuals and groups need to be nurtured. At the same time, donor priorities, organisational mandates, programme dynamics (time and budget), and capabilities need to be acknowledged by being transparent about the limitations of inclusion strategies.

Principle 5: Embrace the dynamic nature of sectors in the endeavour to leave no one behind

The dynamics in sectors – including those depending largely on the informal economy - can change rapidly, and in non-linear ways. Exclusionary practices can also change rapidly. Spotting these changes and responding to these is part of an effective inclusion strategy.

Principle 6: Address power disparities that limit individuals or groups

Leaving no one behind means challenging the status quo by addressing power disparities that limit individuals or groups from participating as respected social, political and economic actors. Power disparities in the informal dimensions of food system drivers, actors, and subsystems deserve extra attention. It takes courage, the right expertise, and a diversity of complementing roles in partnerships and consortia.

4.4.4 Reflections on the role of sector and food system frameworks

Food system frameworks are used by policymakers, programme designers and practitioners to guide the development of funding mechanisms and policies, theories of change and programme intervention logic, and also guide implementation and strategizing, monitoring, evaluation and learning (SME&L). A diversity of sector and food system frameworks have been developed in the past decade. For this chapter, we have reviewed six frameworks with the aim to explore the approach by which each incorporate aspects of inclusion. We conclude that there are large differences in entry points, and limitations, that these models provide on the inclusion agenda.

The frameworks reviewed may be based on different theories and viewpoints and are expected to inspire different types of policies and theories of change. The choice of the framework influences how inclusion is treated at design and implementation stages. The more entry points for inclusion the framework provides, the more likely it is to be included in a tangible and meaningful manner. We argue that in sector and food system frameworks, inclusion entry points should be reflected at the level of outcomes, drivers, and processes.

As a practical example, this means separating the *socio-economic outcomes into social equity outcomes and economic outcomes*. We recommend that this is supported visually. For example, rather than a symbol for money representing socio-economic outcomes, the social equity outcomes should have appropriate symbols next to the economic dimension.

4.5 Concluding reflections

Inclusion can be approached from the angle of trade-offs or synergies. We started this chapter with the assumption that advancing social inclusiveness and business development in sectors are mutually beneficial. All the stakeholders in sectors – whether powerful and visible, or disadvantaged, invisible and unrewarded – have contributions to make for the sector to thrive in the long run. When looking at the short term and a limited part of the sector, trade-offs between advancing social inclusiveness and business viability are part of the reality.

What matters from the onset is a mindset of synergies that shifts the focus to possibilities and adaptation, whereas a mindset of trade-offs shifts the focus to managing tensions and problems. A perfect inclusion strategy from the start is impossible - it needs to be tested, implemented, reviewed and reflected upon – and the team and budget need to be likewise flexible. When reflections on leaving no one behind lead to adaptation of the strategy, a point can be reached where programmes can build on the win-win between social inclusiveness and business development in sectors.

Increasing positive impacts on marginalized groups within sector transformation therefore requires fundamental changes at the level of individuals, the way programmes are designed and implemented, the power dynamics in programme partnerships and the way policies are designed. Inclusion strategies do not start with the targeting and outreach plan. They start with a different way of developing goals for interventions in sectors in which social justice is integrated and prioritized. Instrumental or selfish reasons for advancing social inclusiveness in a way that it strengthens business development can be promoted as a first step for consortium partners to start recognizing the synergies.

Practical inclusion strategies are not only about making pragmatic choices on who to target directly and indirectly given the context, budget, and time. The depth of engagement, the scale of inclusive outreach, and the sustainability of the impact for disadvantaged groups also need to be defined. These choices will need to be made transparent in line with the pledge of leaving no one behind. Inclusion becomes a catch-all term when it is referred to only as an intangible outcome. Inclusion is therefore better treated as an adaptive process for which workplans and budgets can be allocated. Using the logic of the inclusion wheel, in table 4.4 we provide some initial tips and guidance notes for developing an inclusion strategy in programme design and implementation.

Many factors can motivate, help or block decisions on inclusion strategies. Sector and food system frameworks could provide more entry points to support the agenda of social inclusivity in policy and programme design. There is often a gap between what is promised in the proposal – however modest or ambitious this may be - and the reality in programmes.

Using the angle of the SDGs and the LNOB framework helps to recognize that exclusion happens based on multiple grounds. It is important to remember that total exclusion in sectors is rare, hence shifting the focus from *inclusion is good* to focusing on *improving the terms of how people are included*. The roles of donors and power dynamics among programme stakeholders in promoting, inhibiting or blocking the inclusion agenda cannot be ignored in this.

In line with these conclusions, we recommend that follow-up research and action captures practical examples of synergies between social inclusiveness and business outcomes in sector transformation. Apart from capturing results, the pathways towards these synergies are key, and should be a main focus of further study. To further understand how inclusion and exclusion works within the dynamic nature of sectors, it is recommended to analyse the role of informal actors and mechanisms and how these can be better captured in sector and food system frameworks as well as in programmes.

Acknowledgement:
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Disclosure statement:
The authors are responsible for interpreting and presenting findings that emerged from the interviews. Interviewees cannot be held responsible for statements presented in this chapter.

Table 4.4: Guiding questions, general guidance and tips for a more inclusive approach in the design and inception, implementation and end-term of sector programmes through its four dimensions of inclusion

Design & inception

Target audience	Depth	Sustainability	Scale
Guiding questions: *Using the five areas of the LNOB framework, map out the following: Who is involved along the value chain? What kinds of challenges do they face to becoming more proactively engaged?*	***Guiding question:*** *Given the constraints that different groups face along the value chain, how much will the programme need to work with them to contribute to sector transformation? The RBE framework* will help in developing this degree of engagement.*	***Guiding question:*** *Following engagement with these disadvantaged groups, how does your exit strategy ensure that they continue to benefit from the sector transformation after the programme ends?*	***Guiding questions:*** *How many people, businesses, producer organizations, etc. does the programme intend to reach, and in what way, e.g. through expansion, adoption, replication?*

A programme inclusion strategy should be developed through 2-3 repeated cycles in the design and inception stages.
The following steps are flexible and should be adapted to what's feasible in your given context:

- With a small group from the programme, go through the four inclusion dimensions, starting from the target audience to scale as listed above. As a first sweep of mapping vulnerable groups using LNOB, don't think about who's direct, indirect or not included.
- In a wider workshop setting invite partners, representatives of disadvantaged people and/or civil society groups. Validate your initial findings and agree on who could be reached directly, who would benefit indirectly, and who would likely not be reached within the timeline of the programme. The assumptions on who will be reached indirectly will need to be saved and tested in the programme implementation phase.
- Finalize your inclusion strategy in the inception phase, including the budget for evaluating this during the programme cycle. Present this to the programme team and partners, to the donor, and where possible, to the disadvantaged people themselves, to be transparent about how the programme will work.

Tips:

- Programmes typically last 4-5 years, but sector transformation can take much longer. The same goes for ensuring that all those that are involved really benefit from the change. Develop a vision for the inclusive change and agree on what's feasible in the context of the programme given budget and time.
- Programmes work with economic actors involved in sector supply chains – but who defines which actors are involved? Much labour, like household unpaid care work done by women, remains invisible and unrewarded. Recognizing their economic agency makes them more likely to be included in interventions.
- Find allies from outside the programme from civil society or other places that can critically evaluate your inclusion strategy in the design stage and retain a budget for them to evaluate impact during programme implementation.
- It's more important to have an inclusion strategy that stakeholders agree is 'good enough' rather than perfect, but that will be evaluated as the programme is implemented. This will allow the partners and stakeholders to focus more on where synergies can be found.
- Engage partners in integrating social equity in the programme goals and logic; co-create the logic so that partners co-own it.
- Treat inclusion as a process to achieve these social equity goals and ensure that resources and expertise are allocated (just like for other processes).

* *The Reach Benefit Empower (RBE) framework helps practitioners better understand and distinguish between lighter touch and deeper, more long-term engagement to support marginalized groups. A fourth element, 'transform', is sometimes added to make RBET, though the principle remains the same as with RBE (CGIAR Gender Impact Platform, 2023).*

Table 4.4: Guiding questions, general guidance and tips for a more inclusive approach in the design and inception, implementation and end-term of sector programmes through its four dimensions of inclusion

	Target audience	Depth	Sustainability	Scale
Implementation	***Guiding question:*** *Are those set out to be reached directly and indirectly actually being reached?*	***Guiding question:*** *What is the impact of the intervention? Are disadvantaged people being reached or benefiting meaningfully?*	***Guiding question:*** *Does it look like the interventions are supporting substantive or permanent change for the better?*	***Guiding questions:*** *Are any of the new practices being adopted, replicated, expanded or scaled up somehow by disadvantaged people? And if not, why not?*
	• Inclusion strategies are not static and need to be evaluated and adapted as the programme is implemented. • This is easier for those vulnerable people directly targeted and more challenging for this indirectly targeted. • The point of an inclusion strategy is not for the programme to reach everyone in the sector but to set the sector on a path to inclusive sector transformation; • Therefore need to look at sector dynamics with an inclusion lens to be able to spot inequalities and respond to these. • Reflections need to be built into each of the programme phases in order to adapt the inclusion strategy.			
	Tips: • Deliberately treating inclusion as a process means that resources need to be allocated (expertise, budget) to inclusion strategies and incorporated into strategizing, monitoring, evaluation and learning (SME&L), just like for other processes. • In a large-scale programme ensure that an evaluation of the inclusion strategy is included in the mid-term evaluation, including how it can be adapted for the remaining time. • To prevent unintended negative impacts on disadvantaged groups to remain hidden, inclusion strategies should be continuously reviewed, and feedback loops are needed to be able to adapt when there is a risk of negative impacts on disadvantaged groups. Inclusion requires an adaptive approach to SME&L that identifies types of inclusion and exclusionary practices (following Kabeer (2009) from the literature review): – Does it happen in a conscious or unconscious manner? – Is it intended or unintended? – Is it formal or informal?			
End-term	***Guiding question:*** *Have those vulnerable groups seen meaningful change in their lives – both directly, indirectly and possibly those not intended to be reached?*	***Guiding questions:*** *How meaningful has the change in the lives and livelihoods been? Do they have more knowledge, income, confidence, improved nutrition, or all of the above?*	***Guiding question:*** *How likely does it look like that these changes in their lives will continue beyond the programme? This will relate to depth of change?*	***Guiding questions:*** *How many disadvantaged people has this reached and in what ways? What does this say about the potential of the sector to be more inclusive in the future?*
	Tips: • An end-term evaluation should look at what the inclusion strategy set out to achieve, based on the identified vulnerable groups that were directly and indirectly targeted, and assess whether those that were directly targeted have seen substantive (depth) and likely permanent (sustainable) change for the better in their lives, including: • Did the assumptions for the indirect reach of vulnerable groups actually hold up (including any adjustments made during the programme implementation)? • Can the sector as a whole now be said to be more inclusive? If so, how?			

5. How to steer transformation of agro-food sectors towards planetary health

Frank van Weert, Thirze Hermans and Esther Koopmanschap

The current chapter is intended to challenge the common thinking on sectoral approaches regarding the environment. We will argue that this nexus is not purposely managed, and, unfortunately, often not recognized. The most crucial stakeholder - our planet earth - is literally absent in negotiations on how food systems should transform or how sectors should develop.

Photo: Thirze Hermans

5.1 Introduction

Value chains are an application of systems thinking used to understand the linear process of production, processing, trade and consumption of agri-food commodities. Gradually the limitations of the approach led to the development of the sector transformation framework, which allows addressing aspects not captured before such as governance. The sector transformation approach is used in various agro-food sectors like horticulture, livestock, dairy, fisheries, aquaculture and seed (see also Chapter 1).

The current chapter is intended to challenge the common thinking on sectoral approaches regarding its nexus with the environment. We will argue that this nexus is not purposely managed, and, unfortunately, often not recognized. Agro-food sectors derive a broad range of essential natural resources, e.g., water or minerals, from the environment affecting ecosystem services that include pollination, water purification processes and soil formation e.g., soil fertility and soil humidity. Ambitions and activities of agro-food sectors can have significant effects on the environment through for example greenhouse gas (GHG) emissions, by large-scale land use changes of naturally vegetated areas into cultivated lands and by pollution to such an extent that it exceeds biodiversity's tolerance.

The food systems framework (HLPE, 2017; van Berkum et al., 2018) is increasingly used as an analytical tool for systems thinking to enhance our understanding of the connections and feedback loops between -amongst others- food production, processing, distribution, food consumption, with food system outcomes (Borman et al., 2022a) and elements like climate change, biodiversity, governance, education, and inclusion. We consider a structural shortcoming of the sector framework, that the most crucial stakeholder - our planet Earth - is literally absent in negotiations on how food systems should transform or how sectors should develop.

Box 5.1: IPPC report on the current state of climate change showing the need for including environment-positive outcomes

The most recent report (March 2023) of the Intergovernmental panel on Climate Change (IPCC) underlines that there is very little chance that global warming can be kept under 1.5oC. This shows that there is an urgent need for environmental action, despite the decades of talking about the impact of climate change. UN Chief Antonio Guterres referred to this latest IPCC report on Climate Change as a 'survival guide for humanity'. Again, it has been highlighted that environmental considerations are crucial for supporting people livelihoods!

Source: IPCC, 2023

5.2 Background

5.2.1 Historic overview of environmental policies and frameworks

We start this section with a brief overview on how environmental policies and frameworks have developed and have been implemented to manage the agricultural sector-environment nexus since the mid-twentieth century. We zoom in on the political agri-food context of the Netherlands and Europe, as it has influenced international cooperation/development strategies that were instrumental to the practice of sector programmes (see also Chapter 1). We refer, in this chapter, mostly to *the environment* rather than to *planetary health.*

In the past century, the environment has been approached as the source of natural resources that need to be managed to make human development possible. Since the 1950s, the agricultural sector in Europe (and particularly the first six EU member states, including the Netherlands) featured a revolution with the objective to intensify food production to prevent any future occurrences of famine. EU market supports in the three decades after the second world war were designed to increase productivity, which worked extremely well resulting in so-called *milk and wine lakes and beef and butter mountains.* Since the 1960s/70s, the so-called green revolution aimed to bring the *agricultural revolution* to what we today refer to as the Global South. It consisted of a large-scale adoption and rollout of mechanization, irrigation, and the use of improved varieties, fertilizers, and pesticides, which allowed for intensification and expansion of agricultural production particularly targeting food crops in (sub-)tropical conditions.

Fast developments in systems thinking and ecological research in the second half of the 20th century, combined with increased technological ability in

monitoring and identifying how ecosystems were affected, increased understanding of how human activities and ecosystems relate. In 1968, Paul Ehrlich published the book *The population bomb* which alarmed, or at least made people aware of possible unintended consequences of human development on the environment, including the activities and interventions to boost food production that were (financially) supported by the Common Agricultural Policy in Europe (Ehrlich, 1968). The iconic 1972 *Blue Marble* photograph taken from Apollo 17 sparked the understanding of the need for sustainable development and to care for our planet. The Club of Rome caught the attention of a wide audience on environmental sustainability with the 1972 report *The Limits to Growth* (Meadows et al., 1972). It was at that time that complex computer simulations started to suggest that economic growth could not continue indefinitely because of the depletion of natural resources.

Public dissatisfaction grew in the 1980s with the knowledge that people outside areas of Europe's affluency continued to be food-insecure. Additionally, it became more evident that the relentless demand for and unsustainable use of the earth's resources were accelerating species' extinction rates, polluting water resources and the environment in general, and devastating ecosystems. With the reforms of EU's Common Agriculture Policy from 1992 and the appearing of the Brundtland Report *Our Common Future*, a growing concern was institutionalized that 'it is impossible to separate economic development issues from environment issues' (WCED, 1987).

Against the growing realisation that environmental degradation undermines economic development, and that poverty is strongly related to global environmental problems, the United Nations Conference on Environment and Development was convened in 1992. Its goal was to promote economic development, reduce poverty, and protect ecosystems. As part of this conference, the Convention on Biological Diversity (CBD) was born in 1992 and entered into force at the end of 1993.

It was at this time that the thinking about nature from a protected area mindset to 'preserve the great values of nature from human transformation' (Phillips, 2003) started to shift towards the protection of connections between these *islands of nature and biosphere reserves*. These connections, or ecological corridors (especially important in the Netherlands), connect habitats and foster the movement of species. They became the cornerstone of the conservation policy of the EU, which furthermore resulted in the Natura 2000 network.

In the mid-2000s the notion that the protection of species and habitats strongly depends on the protection of the surrounding landscape was introduced; it has become generally accepted since then (e.g. Paloma et al., 2014). Likewise, the notion of protection was introduced in the water sector, which resulted in approaches such as integrated water resources management (IWRM), watershed management and river basin management. The belief in and development of such spatial frameworks allowed for the integration and evaluation of different planning aims, or in other words, it laid the foundation of the landscape approach. This development coincided with the gradual acceptance of the need of stakeholder participation in environmental decision-making (e.g. Pretty, 2006, 2007; Reed 2008; Dudley 2008; Brugnach et al., 2008) and building social capital (e.g. Stringer et al., 2006; Paloma et al., 2014). Participation and its role in decision-making around natural resources gained attention, and was even already legally binding in policies such as the EU Water Framework Directive. In some initiatives or programmes (though only a few) this was furthered by integrating societal learning and ecosystem or landscape governance (Van Oosten, 2021).

The mid-2000s was also the time when the Intergovernmental Panel on Climate Change (IPCC) sounded alarm bells on global warming. IPPC indicated that agriculture, forestry, and other land use activities accounted during 2007-2016 for 13% of carbon dioxide, 44% of methane, and 81% of nitrous oxide emissions from human activities globally. They represented 23% of the total net anthropogenic emissions of GHGs (IPCC, 2019). At the same time, it was increasingly realized that agriculture is one of the economic sectors most vulnerable to climate change impact due to its strong dependence on natural resources and the functioning of the ecosystem (e.g. FAO 2019; Jones et al., 2021; Sulser et al., 2021). Various agreements such as the Paris Agreement included measures to reduce GHG emissions, including in the agricultural sector, and ways for adapting the sector to the impacts of climate change. International and/or development cooperation programmes started to simultaneously wear the tags of *food security* and *climate-smart agriculture*. The notion 'What we eat affects the climate and climate affects what we eat' (Fanzo et al., 2017) increasingly dominated the discourse.

In 2015, the UN member states accepted the UN-2030 agenda with global objectives in 17 goals expected to guide the actions of the international community until 2030, including ending hunger (SDG2) and poverty (SDG1). Many of the specific targets address the food system-environment nexus, such as SDG6 (clean water and sanitation), SDG11 (sustainable cities and communities), SDG12 (responsible consumption and production), SDG13 (climate action), SDG14 (life below water), and SDG15 (life on land).

The planetary boundaries framework is a more recent attempt to warn about the adverse effects of human

development on the environment (Rockström et al., 2009). The framework is based on scientific evidence that human actions since the industrial revolution, especially those of industrialized societies, have become the main driver of global environmental change. The framework refers to 'transgressing one or more planetary boundaries may be deleterious or even catastrophic due to the risk of crossing thresholds that will trigger non-linear, abrupt environmental change within continental-scale to planetary-scale systems' (Rockström et al., 2009). The past 50 years have shown us a sharp decline of ecosystem functions and services on the planet, and of biodiversity in general (IPBES, 2019). Another observed decline refers to the ability to regulate climate on the long term (Rockström et al., 2020). Any parameter affecting planetary health, whether carbon dioxide, nitrous oxides, methane, deforestation, overfishing, land degradation, loss of species, all show the same *hockey stick*-shaped (Mann et al., 2008) increase since pre-industrial times (IPCC, 2018). With human well-being strongly depending on planetary health, this is an alarming trend.

The importance of healthy well-functioning ecosystems for human well-being (i.e., healthy people in a healthy environment) had already been acknowledged by the *Millennium Development Goals (MDGs),* the predecessors of the SDGs, published in 2000 (United Nations, 2000) and further underlined by the Millennium Ecosystem Assessment (MEA, 2005).The MEA assessed the state of the world's ecosystems and the services they provide to human societies. It was a four-year study carried out by over 1,300 experts from 95 countries, commissioned by the United Nations and supported by several international organizations and foundations. The MEA report aimed to provide decision-makers with a comprehensive scientific assessment of the consequences of ecosystem change *for human well-being* and to inform policy choices regarding the conservation and sustainable use of ecosystems. The assessment focused on the relationships between ecosystem services and human well-being, and identified the key drivers of ecosystem change, including land use change, climate change, pollution, and overexploitation of resources. The MEA report had a significant impact on global environmental policy and served as a key reference for subsequent global assessments, such as the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) assessments. It also contributed to the development of the United Nations Sustainable Development Goals (SDGs) and the Aichi Biodiversity Targets.

The Global Assessment Report of 2019 (IPBES, 2019) highlighted in particular (again) the critical need to integrate biodiversity considerations in global decision-making on any sector or challenge, whether water or agriculture, infrastructure or business; and thus political trends started moving again. Trends towards mainstreaming biodiversity into food system and sector transformation were further sharpened after the recent Covid-19 wake-up call.

To control zoonoses, diseases that are transmitted from animals to humans, like Covid-19, the broader involvement of people and institutions, including not only health specialists, but also ecologists, nutritionists, sociologists and economists, etc. is now being pushed forward by international organisations like the Food and Agriculture Organisation (FAO), the World Organisation for Animal Health (WOAH) and the World Health Organisation (WHO). They are promoting a One Health approach (WHO et al., 2019; Rabinowitz and Conti, 2013), an approach that calls for *interdisciplinary study and action* (Fresco et al., 2016). The One Health Commission defines One Health as 'the collaborative effort of multiple health science professions, together with their related disciplines and institutions – working locally, nationally, and globally – to attain optimal health for people, domestic animals, wildlife, plants, and our environment'. The notion of considering *health as a whole* is further embedded in environmental discourses and increasingly referred to as *planetary health*. In summary, the concept of planetary health builds upon the One Health approach by emphasizing the interconnectedness of health and the need for a broader perspective that considers the impact of human activity on the planet. It highlights the urgent need for action to address global health challenges and promote sustainable practices that support the health of both humans and the *environment*. Resilient systems are needed to decrease the direct and indirect health repercussions of shocks on the food system (Bron et al., 2023). Besides, better comprehension of the significance of food systems within the framework of Global One Health may further support the identification of additional pathways, via the food system, 'for sustainable, culturally appropriate, and economically viable interventions' according to Bron et al. (2023). This includes how sector transformation will further be facilitated in the coming years.

5.2.2 Defining environment in a context of food systems and agro-food sectors

There are diverse ways to frame the Sector Transformation-Environment nexus depending on what we mean by *the environment. Environment* has many different meanings as it literally means *surrounding*. In this setting, environment mainly refers to non-human features, characteristics, and processes. This covers, for example, climate, soil, and living organisms. These systems/entities do not exist in isolation and are highly interrelated. In this sense environment is a space in which these interactions and interconnections take place. This is reflected in the food system framework by the connected entities of climate, minerals, water, biodiversity, fossil fuels, land and soils as environmental drivers.

What we mean by the environment also depends on which scale we use and to try to understand the nexus. In Rockström's planetary boundaries framework, and in the related 'doughnut economics' concept of Raworth (2017), the environment consists of the following dimensions: climate change, novel entities (i.e., new human-made substances or materials that did not exist in the natural environment or were not present in significant amounts before), stratospheric ozone depletion, atmospheric aerosol loading, ocean acidification, biochemical flows, freshwater use, land system change and biosphere integrity. The sector transformation – environment nexus could be approached from different scales (for instance, from the scale of an individual farmer, to the scale of a cooperative which is resourcing a commodity chain, to an entire landscape). At all these scales, sector activities interact with the non-human processes (natural processes) which are part of the environment.

Within the wider definition of the environment, climate, biodiversity, ecosystems services, landscape approaches, and planetary health aspects are all different sort of lenses to look at parts of the environment and operationalize this concept. These lenses are relevant to understand what parts of the environment are affected by sectors; for instance, chickpea, dairy or cocoa sectors may impact certain ecosystems and/or affect entire landscapes.

Currently, climate change is the major environment subject to address within sector transformation. However, as our analysis will show, biodiversity needs to increasingly be on the agenda. From the environmental perspective, the United Nations Framework Convention on Climate Change highlights a triple crisis: climate change, biodiversity loss, and pollution. Agro-food sectors play a role in each of these three crises as drivers and impacts (UNFCCC, 2022).

In the current chapter, we address the environment as a concept that includes the entities of climate, minerals, water, biodiversity, fossil fuels, land and soils as the environmental drivers and as environmental outcomes of the food system framework of Van Berkum et al. (2018).

5.3 Methodology: analytical framework

In this section, we construct an analytical framework to assess the sector transformation-environment nexus. The framework is guided by three questions: *Who has the responsibility to safeguard environmental values and the nexus management? What ambition levels are managed in the nexus? And considering the nexus, where to intervene in sector transformation processes?* The framework, and its guiding questions, will be applied to analyse the sector transformation-environment nexus in three sector programmes.

5.3.1 Who has the responsibility to safeguard the environment?

One important question to ask is whose responsibility it is to manage the sector-transformation-environment nexus.

In economics, goods (and services) can be categorized in many ways. One of the most common distinctions is based on two characteristics: *excludability* and *rivalrousness* (Hanley et al., 2006). Excludability refers to the potential of excluding others from access and use, while rivalrousness refers to the extent to which use by one person reduces the quantity available to others. In other words, rivalrous goods are those that are in limited supply and must be competed for among potential users. Examples of rivalrous goods include food, housing, and energy sources, while *non-rivalrous* goods include things like public parks and radio broadcasts. Understanding the rivalrousness of different goods is important for policymakers and economists as they seek to allocate resources and address issues of scarcity and inequality. Using this categorization on the entities like climate, minerals, water, biodiversity, fossil fuels, land, and soils allows us to assess responsibilities in the sector transformation-environment nexus.

The usage of natural resources like the use of water, nutrients, fish, and pastures is often rivalrous but not necessarily excludable; as such these natural resources are called common goods. Their use by one often leads to less availability for others; it is practically impossible to exclude others from using those same resources unless one makes the resource a privately owned property and monitors closely whether it is not illegally used by others. Public goods and services such as a healthy climate and or well-functioning ecosystems rich in biodiversity are non-rivalrous and non-excludable resources. An individual that uses the benefits of a good climate does not normally jeopardize the ability of other to enjoy the same and it is impossible to exclude other from benefitting from it. Figure 5.1 provides an illustration of this classic categorization.

Common good resources have a tendency towards overexploitation (this is called the free rider problem) as individual users have no incentive to invest in maintaining the resource (Hardin, 1968). This is because individual users do not have an incentive to invest in maintaining the resource, this is called the free rider problem. In the absence of incentives for individual users and market parties in producing and managing common and public goods, it is often the responsibility of government to step in.

Figure 5.1: The excludability and rivalrousness of goods and services

	Rival	Nonrival
Excludable	**Private goods** Food, medicine, books	**Club goods** Toll roads, internet, movie theatres
Nonexcludable	**Common goods** Natural resources, judicial system	**Public goods** Environment, culture, technology, public health

Source: Chin, 2021

5.3.2 What is the ambition in managing the sector-environment nexus?

Over the past decades, human-nature relationships have changed, resulting in a different role and purpose of the environment in human systems (Attfield, 2021). This means the ways nature has been valued have changed over time. Understanding this human-environmental relationship is important for interpreting the sector transformation-environment nexus. As a framework sets out the environmental elements we can consider, there are still multiple interpretations of the relation between the environmental drivers and outcomes within the food system as a human-driven system.

To this end, we want to recognize this development in human-nature relationships by providing and recognizing four categories in the relation of the human system to the natural system (Figure 5.2). The distinct types of human-environmental relationships can be applied as an *ambition ladder* for environmental management within the agro-food sector transformation-environment nexus. Equally, we can use this *ambition ladder* to understand the current ambition and environmental approach of each of the case studies and explore the consequences of their moving to a *regenerative* ambition.

Figure 5.2: Range of human-nature relationships

Exploitation	Do less harm	Do no harm	Regenerative
Growth	Growth	Growth	No growth De-growth
Neo-classic economics	Environmental economics	Ecological economics	Purpose economics
Ego-centric	Eco-centric	Eco-centric	Seva-centric
Linear extraction and disposal		Circular	Nature-positive
Green revolution	Sustainable intensfi-cation of agriculture	Circular agriculture	Agro-ecology

Inspired by and adapted from Attfield (2021) and Klomp (2023)

Exploitation

From the onset Western thinking (Greek, Romans, mediaeval times), about the natural environment, including its biotic and abiotic elements, was theocratic (God provided nature for humans) or anthropocentric, meaning human superiority over nature and natural resources. The natural environment, including all its living beings, needed to be taken care of but was in the service of humans who were seen as the dominant species. Until about the mid-twentieth century there was no consciousness about the harm being done to nature by the human species by the Industrial Revolution and economic activity thereafter. This partially resulted from the limitedly accumulated impact humanity had in those times on the environment as population density was still low and economic activities not yet using strongly disturbing technologies and practices. With the focus on economic welfare and the continuing growth of economy and technologies, the foundations for the neo-classical economic models were laid out. Environment (as a model of ecology) was often seen as a branch of economics, in which the management of natural resources included, e.g., flows of energy, and the use of materials. Natural resources management mostly meant to maximize the potential of natural resources.

Do less harm

In the anthropocentric era, over time with increasing population pressure and intensity of resources use there was the realisation that environmental resources were not infinite. This means less harm needed to be done to safeguard the availability of natural resources. An example of this field of thought was the emergence of environmental economics.

Do no harm

Doing less harm was found not to be sufficient as ecosystems and the environment were still degrading to the extent that they could also not be used for economic activities anymore. While our relationship with nature could still be denoted as being ego-centric, increasingly the idea of ecological economics developed. The economy and environment was no longer thought of as two separate dimensions. Instead, the economic system is embedded within a social system, which is in turn embedded within an ecological system. Growth is still the key ambition of the economy; however, growth is assumed to be de-coupled from resources use and environmental degradation. The idea of eco-centric thinking appears.

A major concept reflecting this approach is the idea of ecosystem services and sustaining these services for the food system or even quantifying them to include them in economic models. Although still a utilitarian view towards nature, it recognizes the importance of healthy ecosystems to support biodiversity and the intrinsic values of ecosystems and biodiversity. It includes a significant role for technological development and innovation, which can solve negative impacts of economic progress on the environment.

Regenerative

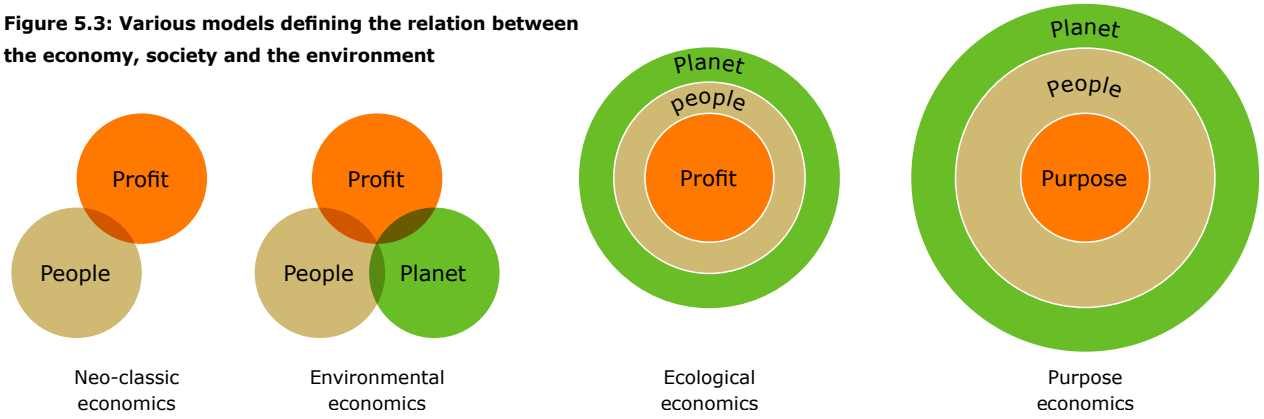
In recent innovative thinking about economics, profitability is not the sole goal but includes much wider societal values like environmental *and* social well-being. Klomp and Oosterwaal (2021), refer to this as *the purpose economy*, in which they challenge the neo-classical economic notion of growth and where human-nature relationship thinking can be defined as *seva-centric*; that is, people become selfless stewards of societies and the environment (Klomp, 2023). Seva is a Sanskrit word meaning *selfless service or work performed without any thought of reward or repayment*.

The intrinsic value of nature and environment are recognized, the need is expressed to not only stop degradation of natural systems but to turn this relationship to regeneration. Terms like nature-positive therefore mean to go beyond minimizing harm, to restore biodiversity and natural systems, and thus bending the curve to go to thriving recovery and sustainable consumption and production (WUR, 2023). Figure 5.3 illustrates the evolving discourse in human-environmental relationships over time in which planetary boundaries and planetary health becomes increasingly prominent.

5.3.3 Considering the nexus, where should we intervene in sector transformation processes?

In this last part of the analytical framework, we explore how and where to intervene in sector transformation processes and harness the collaborative efforts of government and other sector actors for a thriving recovery and thus biodiversity-positive sector-environment nexus interventions. More conventional thinking on how to manage this nexus often relied on technologies operating on the production and value chain development parts of sector activities. Based on the current thoughts on the human-nature relationships it is understood that a more holistic array of interventions is needed across all the various sector activities to ensure that sector transformation leads to nature-inclusive and biodiversity-positive outcomes like climate resilience and circularity.

Figure 5.3: Various models defining the relation between the economy, society and the environment



Inspired and adapted from Klomp (2023)

5.3.4 Analytical framework for assessing cases and sector transformation practice

To understand the sector transformation within the context of the environment agenda, we interviewed colleagues and practitioners and reviewed various sector programmes. We asked our sector colleagues if the environment was considered in their programmes and what approach was applied. Given that many sector programmes refer to the 'integrated sector and food systems framework' (Borman et al., 2022a; see Figure 1.1) we zoomed in on how colleagues and their programmes consider environmental drivers and outcomes in advancing and/or operationalisation of sector transformation. We assessed what environmental drivers and what environmental outcomes were considered. The assessment results attempted, additionally, to address the environmental ambition set and to explore whose responsibility it was/is within the programmes or sector transformation strategies to achieve such environmental outcomes. During the interviews we also explored what interventions within the sector activities were conducted to achieve such environmental outcomes.

We assessed three sector programmes, being the seed programmes in Ethiopia, the horticultural development programme in Jordan, and programmes targeting fisheries and aquaculture in Indonesia. We used the following the questions in the assessment:

- What are the key environmental drivers at play?
- Have environmental outcomes been defined? If yes, what outcomes?
- What is the ambition level of the environmental outcomes (exploitative, do less harm, do no harm or regenerative)?
- What sector activities contribute to achieving such environmental outcomes?
- Who is responsible for achieving such outcomes?

5.4 Analysis of the sector-environment nexus in sector transformation programmes

This section describes the results of the analysis of the sector-environment nexus in sector transformation programmes. The analysis was done by using the framework introduced in section 1.3. Each project/programme is referred to as a case. In this section, the three cases are only shortly introduced. The case descriptions are followed by *insights* answering the questions introduced in section 1.3.

5.4.1 Seed programmes in Ethiopia

Case description

The Integrated Seed Sector Development in Ethiopia (ISSD) Ethiopia programme ran its second phase between 2016 till the end of 2020. ISSD Ethiopia generated enough support to pursue a sector-wide and inclusive strategy at national level (WUR, 2023b). By 2021, the programme evolved into the Ethiopia-Netherlands Seed Partnership (ENSP) which is currently operating (WUR, 2023c).

Insights

Insight 1: Access to quality seed is the primary concern

The main goal in the seed programmes in Ethiopia is to improve farmers' access to quality seed with the purpose of increasing crop productivity and thereby food security. This highlights that there was no intended environmental outcome, rather a need to ensure that environmental outcomes are not negative (as working with boundaries set by the donor).

Insight 2: The intervention strategy targets food security and does not directly target environmental outcomes

Applying an environmental lens, ISSD Ethiopia does not have an explicit strategy on environmental outcomes. In the interview, our colleagues indicated one environmental outcome indicator used in their result framework, i.e., the number of hectares of farmland used in an eco-friendlier way (MoFA, 2020). The ISSD Ethiopia programme was funded by the Embassy of the Kingdom of the Netherlands in Addis Ababa with resources targeted at food security and nutrition. At the time, environmental outcomes were not central to the intervention logic.

Insight 3: The focus is on specific crops and diversification

At the donor's request, ISSD Ethiopia did start reporting on the farmland used in an eco-friendlier way. In the annual report, a contribution to farmland being used in an eco-friendlier way was assumed based on the data on area under pulses and drought tolerant crops, and rates of crop and varietal diversification (in the portfolios of seed producers). Such environmental approaches would have been identified as falling into the do less harm domain, based on the principle of optimising input without losing output.

Insight 4: The approach to climate- and nutrient-sensitive agriculture illustrates a balance

ISSD Ethiopia promoted, as part of the narrative towards farmers and seed producers, the benefits of biodiversity, climate resilience, and nutrition under the name of climate- and nutrient-sensitive agriculture. A particular challenge was to make the environment explicit on the producers' side. Applying the integrated sector and food system framework, this illustrates activities related to production, value chain development, service provision, and investment. The additional balance to be sought is therefore do less harm, seeking to optimize inputs without losing output.

Insight 5: The sector-food system framework does not consider all trade-offs nor balance outcomes

The food system framework falls short of giving weight to different outcomes: food security, nutrition, and environment. Whether the environment is taken on board, and the extent to which that covers all its dimensions, is up to strategy or intervention logic. Partners make strategic choices about what to include and exclude in their programmes and a food system framework does steer that approach. It was mentioned that multiple trade-offs play a key role, for example main concerns are crop productivity and labour demand. On a larger scale, donors and governments often fail to enforce environmental law and boundaries because they do not want to risk negative consequences for livelihoods in the short and medium term. In this setting, the interviewees mentioned that companies are sometimes quicker and more progressive in adapting environmental standards, like reducing their pesticide use and other detrimental effects on the environment.

Insight 6: There is a strong interest in seed biodiversity, but this is challenging

Currently, donors supporting the seed programmes request partners to work on sustainable, climate-smart, and agro-ecological production, but there is still ongoing work on understanding what this entails. One major agenda for the seed sector is conserving, managing, and using genetic diversity, but that does not necessarily result in seed of more crops and more varieties. In the discussion it was emphasized that it is difficult to accommodate biodiversity in the current configuration of the food system which places food security and economic growth before environment.

Insight 7: The future of the environment depends on ambitions

On the future of the environment: 'This will all depend on ambitions, i.e., whether efforts are redirected towards optimizing impacts on environmental outcomes. The sector approach is helpful, as an application of systems thinking, in strategizing how to achieve desired environmental outcomes. The integrated food system and sector framework may be the entry point for environment approaches to translate principles into practices and place these in the context of sector activities and sector drivers. A good test will be in the context of pests and pesticide reduction. Pests and diseases are spreading, and East Africa, including Ethiopia, has seen the devastating effects of desert locust and fall army worm. But government limits to pesticide use are becoming more stringent. Will these last or bend under the pressures to protect livelihoods?' (quote: Gareth Borman).

5.4.2 Horticultural development in Jordan

Case description

The key environmental driver under which Jordan's food production is taking place is water scarcity. Climate change will only worsen an already challenging water situation. The Dutch government has been supporting Jordan's agri-food sector in the transition towards a sustainable, competitive, inclusive, and market-oriented sector. A sustainable agriculture sector in Jordan means efficient use of resources, including water, developing technologies for re-use of wastewater, and investing in new more environmentally-friendly cultivation methods. The horticulture sector has been prioritized for interventions because of its potential to contribute to economic growth, food security and employment generation for Jordanian host communities and Syrian refugees (MoFA, 2018).

Insights

Insight 1: The focus is on ambitions on water productivity in the horticulture sector

The Hydroponic Agriculture and Employment Development Project (HAED-Jo) aims to advance efficient farming in Jordan, to create employment opportunities for Jordanians and Syrian refugees in agricultural production and associated postharvest chains, and to reduce water use in the production process (EcoConsult, 2020). The environmental goals have been mostly to increase the water productivity of the horticultural sector. Demonstrating and testing of horticultural technologies, including hydroponics in various farming systems, and working with less water-intensive and more salt-tolerant horticultural varieties, are supposed to reduce water dependency and make horticultural food production more climate-resilient.

Additional improvement to the value chain process around horticultural commodities, particularly in waste and loss reduction, again increases the water productivity of Jordan's food security. Under this project the Jordan Knowledge and Innovation Centre (KIC) was also established. This is a research, testing and training centre for sustainable and inclusive horticultural development based on the engagement of the Jordan, regional and Dutch horticulture private sector plus the Jordanian agricultural research organizations and universities.

Insight 2: The ambitions target changes in behaviours among both producers and consumers

To support the outputs of the project, HAED-Jo developed a strategic communication and outreach plan that focuses on promoting hydroponic systems, stimulating behavioural change and increasing awareness through targeted messages. This includes encouraging growers to adopt appropriate technologies suitable for the Jordanian context;

attracting consumers' interest in buying hydroponic produce; involving community groups in creating livelihood opportunities along the improved agricultural value chain; and building partnerships with different educational and non-governmental institutions to expand outreach and ensure that knowledge and information that result from the project activities is accessible beyond the duration of the project.

Insight 3: The sector approach aims at climate-smart production and post-harvest ambitions

The Jordan HortiFuture project includes clear interventions aimed at managing the sector transformation-environment nexus better, particularly on agricultural water use (WUR, 2023f). The interventions include introducing and building capacities on using climate-smart horticultural farming techniques, including the use of low water usage crops. Building capacities in the sector on post-harvest management is assumed to reduce food loss and hence water loss. The National Agricultural Research Centre (NARC) and other agricultural organizations are involved to help provide farmers in this and other sectors with climate-related information for planning of agricultural activities, improving early warning systems on topics such as frost and precipitation, and supporting improved monitoring and communication of emerging diseases done by agricultural institutions.

Insight 4: The Dutch diamond approach supports policy dialogue, scaling, and institutionalization

The Dutch government often applies the Dutch Diamond approach in their international cooperation programming. This means that interventions are designed, implemented, and monitored often in consortia consisting of governmental, private-sector, civil society, and research organizations. Having both the government as well as sector organizations on board in these sort of horticultural development programs implicitly puts the responsibility of managing the sector transformation-environment nexus in the hands of both. It counts on the political support and governance arrangements of the government and combines this with the agility of the sector to test and scale innovations towards environmental sustainability.

Insight 5: Programme roles facilitate transitions toward achieving environmental ambitions

The programmes often tried to introduce innovative technologies and practices in the production and value chain activities. Organizing the sector stakeholders in these programmes, facilitating coordination and requesting sector investments into these transitions towards environmental sustainability and climate resilience area all examples of where to intervene in sector activities to achieve environmental goals.

Insight 6: The incentive to manage the sector transformation-environment nexus is mostly sector-centric and driven by corporate risk

While clear environmental outcomes were defined for the horticultural programmes, it was found that these were sidestreamed during implementation. Inquiries with the Jordan sector actors involved in these horticultural development programmes revealed that a key incentive is to attempt to reduce operational risks resulting from water scarcity issues (Van Weert et al., 2022). In that sense the incentive to manage the sector transformation-environment nexus is mostly sector-centric and corporate risk-driven. Also, contracted development NGOs and consultants facilitating the implementation seemed not much intrinsically driven by the environmental sustainability agenda; instead, they accepted it mostly as an external donor condition.

Insight 7: The prospects for horticultural development in Jordan in the sector-environment nexus

Clearly the Jordan horticultural sector is still mostly working from a do less harm thought. Advanced horticultural development based on high-tech hydroponics can bring the sector into the do no harm phase. However, the current enabling environment, including the investment environment, is not likely to favour quick development of such advanced sorts of horticulture in Jordan.

5.4.3 Fisheries and aquaculture for food security in Indonesia

Case description

The key environmental driver in the fisheries and aquaculture project in Indonesia (FAFI) is the declining productivity of capture fisheries. Due to the declining productivity of capture fisheries, it was strongly believed that increased availability of fish and fish products could not be achieved through increased fishing efforts. The project addressed the sector transformation-environment nexus particularly, therefore, by reducing post-harvest losses in the capture fisheries value chain and by increasing freshwater aquaculture production through improved technologies and inputs. Activities focused on capacity development of fishers, auctioneers, and traders; on good handling practices on vessels and during landing, transport, and marketing; and on helping consumers to understand the health benefits of eating fish and fish products (WUR, 2019).

Insights

Insight 1: Food security and blue growth resulted in environmental do no harm ambitions

In summary, the project's activities, as well as governmental measures and interventions, jointly contributed to food security and blue growth, which was (like green growth) explained as environmental sustainability, economic growth and social equity. Green growth is a term to describe a path of economic growth that utilizes natural resources in a sustainable manner.

It implies fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which the well-being of the current and future generations rely. Blue growth is part of the Europe 2020 strategy and addresses the economic potential of the oceans, seas and coasts for sustainable growth and jobs, to be developed in harmony with the marine environment and through cooperation between public and private partners, including SMEs (European Union, 2023). Even though a food systems approach was not yet mainstream in sector-based approaches and programmes, environmental outcomes were therefore considered, not merely with sustaining sector activities but with a sector aspiration to do no harm.

Insight 2: Fish farming, post-harvest and processing interventions had a strong environmental ambition

Interventions focused on achieving environmental outcomes in post-harvest handling and processing of fish produce. At the same time, the water-saving techniques used in fish farming can be highlighted as nature-positive.

Insight 3: Stakeholder cooperation created a basis for stronger environment-driven interventions

The project functioned as a broker between knowledge institutes, policymakers and practitioners and aimed at converging thinking to address impediments in the fish value chain and to strengthen collaboration between stakeholders in the fish value chain sector who were willing to jointly experiment with innovative solutions contributing to institutional change in the aquaculture and capture fisheries sector. Clear environmental goals were not set during project implementation. However, increased cooperation in the sector may positively help towards *climate-smart, environmentally friendly* or even *planetary health positive* future interventions.

5.4.4 Analytical comparison

Despite environmental drivers and outcomes being part of the food system framework, this case study analysis shows that the environment is poorly represented in sector programmes. And if it is, it is often on the production side, driven by the ambition to reduce operational or reputational risks. In the cases where environmental outcomes are considered in the design of the project (such as promotion of eco-friendly practices), this is mainly driven by a sense of sustaining ecosystem services and thus sustaining sector activities – do less *harm or do no harm*. However, sector actors do design for positive environmental outcomes when these are part of other benefits such as lowering of costs. This highlights that the motivation for environmental outcomes is mainly steered by donor-driven *environmental boundaries* and by the wish to continue sector activities. Another observation is that in the context of these case studies, the sector actors mostly treat environmental and socio-economic priorities as trade-offs instead of synergies; they see environmental outcomes as a lesser priority.

5.5 General insights

This section summarizes the general insights gained on sector transformation processes based on the cases and the review of referenced literature. It addresses what the sector could and should do to move towards climate resilience, biodiversity-positive outcomes and less pollution; in short, towards more planetary health.

General insight 1: The motivations of the public and private sector to increase accountability for managing the nexus

The sector transformation-environment nexus mainly takes place in the *common and public* good spheres of economy (see section 5.3.1, Figure 5.1); in the main, public bodies have been managing this through policies and legislation. As such, agricultural sectors have been operating in this nexus, *within environmental boundaries* and directives - which could very well be *outside planetary* boundaries – that have been set by national governments. The notion here is that private-sector actors abide by the environmental boundaries indicated to avoid negative legal and financial risks, such as loss of operating licences or being fined. In many countries in the Global South, the capacities of public bodies are often insufficiently developed to properly monitor agricultural sector compliance, and illicit agricultural operations have not been uncommon.

Increasingly, private actors in agricultural sectors have been taking a *corporate risk approach* driven by the risks on the sector's productivity, profitability, or even feasibility resulting from natural resources scarcity (or depletion) and/or environmental degradation. This has incentivized the sectors to invest in and manage the nexus as in other extractive sectors (ore mining, oil and gas), to avoid stranded asset risks (Caldecott et al., 2013). Also, negative environmental impacts may have spillover effects on other sectors and users resulting in reputational risks, legal claims, or even local revolts. Additionally, food consumers increasingly

expect sustainably and fairly produced food, resulting in reasons to invest in the environment.

Based on a changed understanding of how humankind relates to the environment - and on discussions about indigenous food rights and agricultural practices - sector actors, whether public or private, are increasingly using intrinsic motivation (stewardship) to better manage the nexus. While this group of more nature-inclusive food producers and commodity chain actors is still small on a global scale and may be less represented in the Global South, a new trend has been established. If this trend further grows and consolidates, the role of the governments in safeguarding the environment will increasingly change from setting boundaries (including compliance monitoring) towards becoming an enabler for sector-intrinsic nature-positive initiatives.

General insight 2: Advancing ambitions to manage the sector-environment nexus

Agricultural sectors operate somewhere in one of the four *domains of thinking* on how humanity relates to nature; that is, how agriculture is interconnected with the environment in a nexus; this can be in an exploitative, do less harm, do no harm, or regenerative mode. The four domains are not shaped by clear-cut and strictly separable borders but tend to be part of a continuous spectrum (Figure 5.2) and can even exist in parallel.

Exploitative sector practices

Agricultural sector actors that operate within the *exploitative* domain are aware that there are environmental drivers that affect the sector. However, in this domain, those actors have not defined environmental outcomes nor adjusted their sector operations such that these outcomes can be achieved. There may also be a lack of governmentally-set environmental boundaries, thus facilitating the sector to operate freely in this domain. At the same time lack of awareness on these boundaries may dominate exploitative sector activities; similarly, public actors may be unable or unwilling to enable a governance system that safeguards planetary health. When resources are depleted and/or the environment is degraded to an extent that operations are being jeopardized, activities are simply terminated and/or moved to other locations.

Do less harm sector practices

Agricultural sectors in the *do less harm* domain set environmental goals to avoid legal, reputational and/or operational risks, so that operations can be continued with acceptable profitability. The environmental drivers in the food system are monitored to continue resource access and as part of sector's economic models. This has caused the emergence of concepts like *people, planet, and profit* and *ecological footprints* of economic activities, and the principle of *the user and polluter pays*. Technological development and agricultural practices are aimed at creating more efficiency, reducing dependencies on environmental inputs, and decreasing environmental impacts (sustainable intensification of agriculture). Water-saving techniques (such as in the case of horticulture in Jordan), and a slow shift towards less input-intensive agriculture, are examples of how sectors have tried to reduce these externalities.

Do no harm sector ambitions

Agricultural sector actors in the *do no harm* domain operate in a context where the governmental has set stringent environmental goals which do not allow negative impacts on the environment, and which cannot be evaded or where the sector understands that the success of their operations depend on their decoupling from environmentally harmful drivers. This depends often on advanced technologies.

Regenerative sector ambitions

Agricultural sector actors operating in the *regenerative* domain work from an intrinsic belief that regenerating the environment has positive effects on food production, the profitability of the sector and simultaneously generates other benefits to society and to the environment on its own. Environmental goals are set and defined in such a way that by achieving them it also contributes to the food security, nutrition, and socio-economic outcomes. The environmental outcomes and the strategies to achieve them create environmental drivers that become increasingly more favourable for the operations of the sector.

General insight 3: Governmental interventions to manage the nexus

When the government is the main responsible body for the management of the nexus, it can apply a wide range of command-and-control policy instruments that set environmental boundaries or that create incentives for sectors to make their operations more sustainable. Examples include bans on the use of certain insecticides; standards in fertilizer usage; quotas on natural resources extraction like fish; spatial zoning to protect vulnerable ecosystems and habitats from over-exploitation and encroachment; and permits issued to individuals to clear natural vegetation or to build processing infrastructure. The effectiveness of such instruments is strongly dependent on the ability to monitor sector compliance and on a system of penalizing non-compliance.

Governments can also create an enabling environment for the sector transformation-environment nexus, for example, through technical, vocational, and academic education and training, and through continued capacity-building of extension services. This could include trainings on agriculture practices that improve soil quality and structure, such as zero-till arable farming,

cover cropping and mulching, manure recycling, rotational livestock grazing, nutrient and carbon fixation, and others. Caleffi et al. (2023) provide 45 actions to orient food systems towards environmental sustainability.

As part of the regulatory arrangements, better public participation in land use planning and environmental impact assessments will identify and disclose potentially negative environmental impacts, and support evidence-based decision-making that is focused on sustainability. Awareness campaigns on environmentally unsustainable sector practices and on the extent of ecological footprints of food commodities may steer consumptive behaviour, though this may be of a lesser extent in the Global South than in countries where people tend to suffer from affluence guilt.

Next, governments may influence agricultural sector behaviour with economic incentives. Taxing environmentally harmful agricultural practices provide incentives for the sector to look for more eco-friendly ways of producing and processing. Subsidizing environmentally positive practices (for instance, the restoration of degraded or unproductive crop and grazing lands, the rewilding of forests and/or the re-wetting of drained peatlands) can shift sectors into more environmentally-friendly domains. In addition, the government could try to reduce over-exploitation by charging resource users. For this, advanced monitoring and fee collection mechanisms must be organized and could be partially outsourced to the sector organizations, involving sector activities such as regulation, coordination, and stakeholder organization.

General insight 4: Private-sector interventions to manage the nexus

Sector organizations are increasingly measuring the environmental impact of their commodities and processes through ecological footprinting and lifecycle assessment (LCA). In the beer beverage industry this has led to relocation of wheat production to less water-demanding areas. Through LCAs, sector actors are replacing current practices with more eco-friendly ones, such as fossil fuel-free transportation and logistics as part of the value chain.

Sector organizations are slowly shifting towards *no harm* and more regenerative domains of managing the environment by investing in innovative technologies and practices like ICT-based precision farming, seed technology, waste recycling plants, zero-energy cooling chambers, manure digesters, and solar- and wind-powered irrigation systems or water pumps. Often such development takes place within public-private partnerships (stakeholder organizations) involving research organizations, governments, and investors. There is a key role for nature-based solutions whereby efficiency- and productivity-focused practices and technologies are being replaced by practices based on ecological processes such as integrated pest management, on-farm composting of organic waste, and wastewater recycling in manufactured wetlands (Keesstra et al., 2023).

Insight 5: on interventions when the public and private sector manage the nexus

Governments could play a role in facilitating multi-stakeholder platforms comprising governmental, private-sector, research and civil-society organizations, including those organisations that represent nature rights. For example, they could facilitate approaches where through stakeholder interactions the landscape is managed so that multiple functions and uses of the landscape, including food production, are successful in better management of the nexus.

The government can work with sector organizations in the transition towards more sustainable food systems by creating market mechanisms, for instance by using transferable quotas in fisheries, tradable groundwater depletion rights and marketable nitrogen emission permits to stimulate service providers to adopt and promote environmentally friendly services. Payments for ecosystem services (PES) are incentives offered to farmers or landowners in exchange for managing their land to provide some sort of ecological service. Eco-labelling and environmental certification may steer consumptive behaviour in an eco-friendlier direction. For such market approaches to be effective, both financial and environmental governance are clearly needed within sector organizations and governments.

5.6 Reflections

In this section, we reflect on our learnings resulting from applying our analytical framework to the cases.

Reflection 1: Environmental framing

Rather than our current framing of *the environment* in the context of the sector-food system framework, we recognize that the term *planetary health* may better reflect the intimate relationship between societal wellbeing and ecosystem health at a global scale. Thereby, we would avoid a narrow view of ecologically and geographically restricted challenges and acknowledge the interconnectedness of ecosystems and the environment with other food system elements.

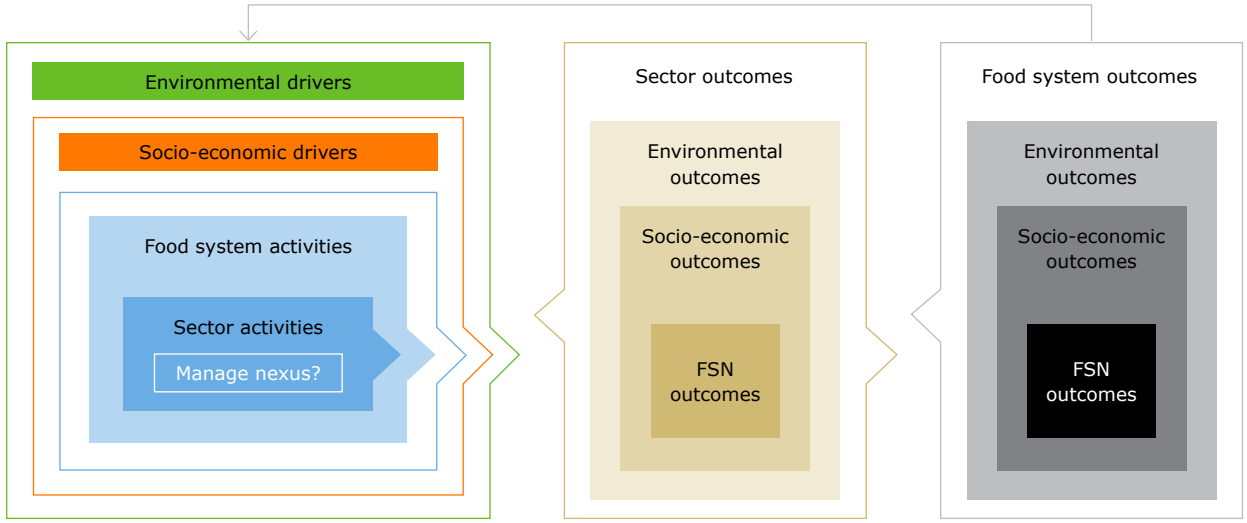
Reflection 2: Working towards environment-positive sector transformation in the food system framework

In order to make the nexus of sector transformation and the environment more explicit in the integrated and sector transformation food system framework of Borman et al. (2022), we suggest adopting the ecological economics and purpose economics concept. This includes the idea of nesting purpose within society, which is then placed within the boundaries of the environment. Hence the sector activities within food system activities are nested within and bounded by socio-economic drivers, and nested within and bounded by environmental drivers. Similarly, by nesting particular food security and nutrition outcomes into socio-economic outcomes, which are again nested in environmental outcomes (see Figure 6.4), it becomes clearer that socio-economic and environmental outcomes are necessary to reach sustainable and inclusive food security and nutrition outcomes. Nesting food and sector outcomes in environmental and socio-economic drivers makes achieving the socio-economic and environment outcomes more important or even *foundational*. This is a shift from the original integrated framework where they are presented as externalities to be managed. In this framework, a single sector transformation programme may be able to achieve sector-specific food and nutrition security outcomes, including socio-economic outcomes and environmental outcomes; but a transformation within multiple sectors is needed to reach the various sets of nested food system outcomes. The cyclical character of transformative change is not very explicit in the integrated model. Obviously, the sector outcomes and the food system outcomes determine the environmental drivers and socio-economic drivers that steer food system and sector activities.

As shown in the case study discussions, there are many types of interventions possible in the different sector activities, which can all contribute to better environmental outcomes.

To promote the uptake of environmental outcomes in the sector activities it may be useful to include a sector activity that explicitly states the responsibility for environmental outcomes. One foundational difference in the conceptualized food system transformation framework is the sector-based approach along a value chain and along sector actors. This is contrast with the mostly spatial-based approaches used in environmental management approaches (e.g., landscapes or ecosystems). It is important, therefore, to connect the spatial approach with sector thinking. The sector transformation framework as suggested by Molenaar and Kessler (2021), which incorporates this spatial thinking in the landscape, is in that respect more appropriate.

Figure 5.4: Integrated sector and food system framework with an explicit environment nexus



Reflection 3: The principles/ambitions ladder

Food systems and their associated sectors are a key driver of biodiversity loss and climate change, and reversibly are also the first and most impacted victim of the triple climate change, biodiversity loss and pollution crisis. Impacts of climate change and environmental degradation and resources depletion are unequally distributed over sectors, areas, and individuals.

Within the assessed sector cases, we first and mostly need to acknowledge that there is a low motivation and drive for the environmental agenda in sector transformation. Therefore, before discussing the environment nexus in the food system and sector framework, we need to understand why the environment has been low on the agenda driving transformation processes. Having distinguished between the different drivers of environmental agendas and human-nature relations thinking, we have drawn the conclusion that the main driver for including the environment in the assessed sector case studies is the need to sustain current sector activities, embedded in the idea of ecosystem services, natural resource management and the *do less harm* thinking. In the current economic model (neo-classical), environmental costs are mostly considered as externalities. Based on current observations, internalizing these external costs cannot be left to the market but needs strong governmental steering or clear project steering.

This is in contrast with an environmental agenda driven by a sense of stewardship and intrinsic value of nature and the environment, as currently promoted by the EU and the WUR-wide agenda. The needed mindset highlights the idea that food systems can also be part of the solution. In particular, the recent Mansholt lecture on nature-positive futures frames food systems as a catalyser for change and sets out a vision for environmental drivers and outcomes to be important food system transformation drivers (Mommer et al., 2022). This vision has set out five entry points with associated tipping interventions that should be promoted in sector agendas. These are as follows: (i) diverse fields and farms; (ii) biodiverse landscapes and seascapes; (iii) connected communities; (iv) sustainable food and diet; and (v) inclusive finance and trade. Importantly, the five interventions interact within and across entry points and have the potential to trigger positive feedback loops that cascade nature-positive changes through the food system (Mommer et al., 2022). Future efforts in food system and sector system transformation should therefore consider this vision as an entry point for their interpretation and implementation of the food system framework.

We propose therefore, as key measures:

- Going from the *do less harm* principle towards *do no harm* or *the regenerative* principle, i.e. causing nature-positive effects
- Aiming to achieve simultaneously multiple positive outcomes like climate mitigation, climate adaptation, less natural resources use whilst having positive effects on ecosystems and biodiversity.

Reflection 4: Sector organizations

From a sector stakeholder point of view, there is a minimal requirement to adhere to and be compliant with all environmental policies and legislation relevant to the geographical area. This means there is a need to understand these requirements during programme design. In addition to this minimalistic approach, there is an intrinsic sector-centric motivation for the sector to manage the environment better to assure the continuity of the sector activities. This motivation should enable sector stakeholders to move towards *do no harm* and *regenerative* environmental activities. The most optimal sector transformation would be one where the sector takes its responsibility to support the management of the environment from an eco-centric attitude, e.g., custodian or steward. Applying this thinking and motivation at the start of sector transformation activities normalizes and mainstreams environmental thinking in sector programmes and transformation strategies. Choosing the right set of partners and types of collaborations are important in this process.

In sector transformation, emphasis lies on the sector activities and boundaries. This is often in contrast to the strong spatial thinking and programme development in climate and environment. The location of activities is crucial in this thinking and programme development. Therefore, including spatial approaches in sector transformation activities are needed.

Reflection 5: Sector transformation programmes

Based on the learnings, we recommend the following.

Firstly, sector development and transformation programmes need to have clearly defined environmental outcomes. At least it needs to be made clear how the sector transformation outcomes will contribute towards achieving environmental outcomes and environmental sustainability. In addition, it needs to be made clear how achieving environmental outcomes will help to achieve the socio-economic outcomes and food security and nutrition outcomes.

Secondly, the environmental outcomes should no longer be solely defined from a utilitarian or anthropocentric point of view nor from only a sector point of view. Environmental outcomes defined from such a point of view, with only the sector performance in mind, do not address the need to shift the food system towards *do no harm* or *regenerative* domains. Ideally, environmental outcomes should include nature-intrinsic values and be based on nature rights. Individual sector transformation programmes will not be able to achieve the wider environmental outcomes. It is increasingly understood that it needs a series of interventions

to make systemic changes. Therefore, it requires a sector-wide or cross-sector approach to improve environmental performance. It is recommended that organizations in charge of initiating and financing sector transformation programmes (ministries of agriculture, environment, climate change, and rural development, and international development partners and donors) adopt the sequenced-integrated-layered (SIL) programming framework. This framework supports interventions that are sequenced; integrated with other interventions that contribute to food security and nutrition, socio-economic and environmental outcomes; and layered (built on earlier results). Including sector actors in such SIL programs can help to ensure that responsibilities for environmental outcomes are shared and that coordination between possible interventions to create maximal impact. Applying climate funding in sector transformation is a way to establish environmental outcomes. Interventions focused on climate change adaptation and mitigation in a sector context can also generate co-benefits for other environmental dimensions (e.g., natural resources use, pollution, biodiversity etc.).

Lastly, sector performance and/or transformation programmes should have targeted strategizing, monitoring, evaluation, and learning (SME&L) to assess environmental outcomes (see also Chapter 4). Recent changes in nature valuation also need to be reflected in indicators used to measure and evaluate the environment. The discussed move to *regenerative* would mean a change in indicators from, for example, the economic value of ecosystem services to the diversity of species. Taking a next step into this process could imply that instead of thinking of environmental factors as inputs and outputs, a sector should be situated within an environment and socio-economic system contained within planetary boundaries; this is representative of *regenerative* thinking.

Reflection 6: Guidance for sector change facilitators

How do we translate this for programme management and decision-making within organizations that focus on facilitating sector transformation? Sector transformation can provide practical entry points, but practitioners and stakeholders need to agree first that environment is a priority. We need to acknowledge that current donors or partners do not prioritize the environment - since nature-inclusive models are often not good business models (yet), or other aspects such as food security take priority and are not being perceived to be highly connected to environment – even though environmental outcomes and food security are intertwined. One of our interviewees mentioned that practitioners are often drivers, which donors can also follow. Therefore, we should not just point fingers about lack of environmental agendas; rather, we need to acknowledge these challenges and think about what role change agents, whether knowledge partners or non-governmental organisations, can actually play.

To this end, change agents, facilitators of change, or sector transformation colleagues need to critically consider an agenda-setting role that specifically brings the inclusion of environmental impacts in project design and environmental frameworks to the forefront. To support project managers in this, critical questions to ask during the acquisition and project design processes could be considered a beneficial tool. Programmes are often partner-driven, but such tools can help to put environmental impacts on the agenda, thereby making it a cross-cutting theme in collaboration with inclusion (for example, covering themes such as environmental justice, climate justice and/or just transitions).

Another element to consider in project acquisition is the perspective of multi-stakeholder partnerships and particularly the partners we choose to work with. Deliberate decisions can be made that represent environmental interests and voices which are often associated with questions on inclusion. For example, if main donors such as a ministry of agriculture do not set an environmental agenda in their project calls, change agents (whether organisations or individuals) could consider promoting holistic and transformation programs which include improved environmental objectives. Currently poverty reduction is a priority for the foreign trade and development cooperation policy (BHOS), but the upcoming objective is to make biodiversity a part of this agenda, and to develop a clear pathway of how to reduce poverty in a nature-positive way. These are important agendas to get involved in, which means changing our approaches to environment (including a rephrasing of planetary health including nature, biodiversity and climate).

In short, the following practical entry points for *more eco-friendly programmes or more environmentally friendly programmes* are recommended for colleagues focussing on sector transformation.

- First, realize that everything is connected. This sounds simple but is of the utmost importance. Project activities or interventions implemented by the public and/or private sector can have unexpected impacts on the economy, society, and the environment; for instance, understanding and acting upon the challenges that sector transformation colleagues are involved in, and promoting collaboration across disciplinary boundaries and across national boundaries. Therefore, it is pivotal to mainstream, or at least advocate to donors/ programmers/commissioners for, the integration of environmental outcomes in programmes.
- Sector transformation teams need to have environmental experts on board.
- Change agents need to carefully assess whether sector development programmes contribute to inclusive and sustainable food systems, and stay away from programmes or partners that harm regenerative, restorative, or biodiversity-positive approaches.
- Sector transformation teams need to increase their participation in explicitly nature- or biodiversity-positive programmes in order to contribute to the transformation of agro-food sectors with a primary planetary health focus, allowing exposure to and further scaling of their expertise.

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The authors are responsible for interpreting and presenting findings that emerged from the interviews. Interviewees cannot be held responsible for statements presented in this chapter.

6. Emerging insights and reflections on improving direction and practice

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This concluding chapter brings together the analytical and learning trajectories of the previous four chapters, to reconfigure the integrated framework for sector and food system transformation, and to provide guidelines that support its future strategies and practice.

Photo: CIAT/Neil Palmer

6.1 Introduction

The concluding chapter of this publication synthesizes the four analytical and learning trajectories presented in the previous four chapters. Each trajectory was guided by a specific perspective and generated specific insights and reflections on the practice and strategies for transforming agro-food sectors. In this chapter, we bring together these insights and reflections, based on study, analysis, learning and synthesis. We do realize that other perspectives exist and are not captured in this project. The outcomes of this project are thus circumscribed to the perspectives used.

We first present the common insights that emerged on sector transformation as a process. Subsequently, we zoom in on the implications of those insights on the design and implementation of sector transformation programmes. A set of guiding principles have emerged from the reflections on the process and programmes, which are put in the context of strategies for sector transformation and practice in sector programmes. Following that, we utilize those principles in an initial attempt to reconfigure the integrated framework for sector and food system transformation (Figure 1.1). In conclusion, we provide guidelines that support future strategies and practice in sector and food system transformation.

6.2 Insights on sector transformation

The four perspectives (governance; strategizing, monitoring, evaluation and learning (SME&L); inclusion; and planetary health) that we have used to analyse the practice of sector transformation consider agro-food sectors as systems in society and the natural environment. They analyse an agro-food sector as a practical subset or as one of the subsystems of the larger food system. The transformation of an agro-food sector as such is not perceived as a goal in itself; it is driven by goals that contribute to food security and nutrition as primary food system outcomes, complemented by socio-economic and environmental outcomes.

This has been visualized in the central horizontal axis in the integrated sector and food system framework (Figure 1.1). In Chapter 3, Kusters et al. describe how this strong focus on food security and nutrition in many of the sector programmes is simply because the donor resources are allocated to food security policies. Reemer et al. (Chapter 4) and Van Weert et al. (Chapter 5) both illustrate that the processes of sector transformation in terms of direction and outcomes prove inadequate in their impact pathway to contribute to sustainable changes, respectively in inclusion and equity, and in planetary health.

The synthesis of these reflections led us to discover an important feature of sector transformation; we learnt that the primary focus tended to be on desirable outcomes in food security and nutrition, and less so on desirable outcomes in food security and nutrition in combination with environment and inclusion. While previous sector transformation strategies and practices have primarily focused on impacting food security and nutrition, the new perspectives on sector transformation that we describe in this publication require an integrated approach to influence multiple outcomes. Strategies and practice usually respond in the transformation process to multiple drivers but up to now have only aimed to contribute in a perceived linear and one-dimensional manner, oftentimes with private sector development at the forefront to food system outcomes, i.e. food security and nutrition. We argue that, rather than this, the process of transformation of agro-food sectors should become one that contributes to a complex web of highly interrelated societal and environmental outcomes. Transformation is then the process of deliberately changing an agro-food sector towards desired societal and environmental directions.

Embracing system thinking supports the development of strategies and practices for transforming agro-food sectors, in which strategy can be an agreed course of action while practice can be the routinized way of doing things. One of the elements of system thinking is considering the bigger picture rather than zooming in on one element; it means zooming out and examining the relationships between elements and how the system behaves as a whole. Another element is being clear on system boundaries, as well as understanding relationships between actors; and understanding how changes in one part of the system can affect the functioning of other parts or even the entire system (Posthumus et al., 2021). As such an agro-food sector, such as the horticultural sector in Ghana, is considered a complex system, with many different crops, markets, and stakeholders, each with their own interests, and structured in their operations in various sector functions and activities. Changes made in one sector function can have repercussions on the functioning of other parts, or even the entire sector. For example, altering regulations related to access to finance or increasing producer access to specific technologies affects the entire sector. When these financial resources or technologies target specific types

of producers, like young or female producers, it not only impacts producers, but also other stakeholders and sector functions. Such a process requires that those involved in the transformation need to be deliberate in designing and planning, monitoring, evaluation and learning. Since the changes are interconnected, there is a need to use an adaptive approach responding to multiple drivers in order to reach the intended goals. Kusters et al. (Chapter 3) provide insights and guidance for adaptive management of such a process of sector transformation. The process of transformation involves many stakeholders and interests. Namugumya et al. (Chapter 2) indicate that transformation does not only require sector governance. They argue that for transformative processes, especially those considering systemic change, governance goals should be explicit with clear directions of the desired change; and that these need to be maintained in adaptive management processes. Another reflection by Namugumya et al. is on the critical need to invest in transformative capacities and how to embed such transformative capacity amongst sector governance practitioners. Such capacities include both technical and leadership / governance-oriented capacities.

Reemer et al. (Chapter 4), in their analysis of strategies and practices of transformation of agro-food sectors, perceived a common pattern aiming for compliance to inclusion and equity. However, in many analysed programmes, it is the food security, nutrition and business perspectives that are commanding the processes of sector transformation. To embrace the goal of *leaving nobody behind* in sector transformation, Reemer and colleagues argue that transformation strategies and practice need to become deliberate and transparent on inclusion and equity not only in terms of goals but also processes. In a comparable manner, Van Weert et al. (Chapter 5), in their analysis with an environmental perspective, argue that sector transformation needs to move from *a do less harm* or *do no harm* mindset towards one that rather *contributes to planetary health* and is *regenerative*. They argue for a more eco-centric nexus that provides direction to the transformation processes of agro-food sectors.

6.3 Insights on sector transformation programmes

Sharing and synthesizing the outcomes of the analysis using the four perspectives revealed strengths and limitations in past and ongoing sector transformation programmes. The four perspectives provided these specific insights, described in the previous four chapters. Brouwers et al. (Chapter 1) describe how this publication, as a multi-disciplinary effort, brought together colleagues from different WCDI groups to analyse the work in sector transformation. In this way, colleagues had to move from working in silos to working in networks (across groups) within both their own organization and in programmes in which they worked. We now aim to bring these together to provide a more comprehensive perspective on sector transformation programmes.

In response to perceived limitations in our work on sector transformation, we have learned to become more explicit in placing social and environmental outcomes at the core of our transformation strategies and practice. While many of the transformation pathways are still guided by roadmaps aimed at enhancing the performance of a sector (i.e., still driven by linear and economic development thinking), we need to position social and environmental outcomes to provide direction to the transformation process (De Boef and Thijssen, 2023). The case of the GRAISEA programme in Vietnam - promoting a sustainable and inclusive rice value chain through multistakeholder initiatives benefiting both women and men smallholder producers - serves as a clear example of how inclusion can also become a successful business case, ultimately achieving both economic and social outcomes (Reemer et al., Chapter 4).

Through sharing and synthesizing the reflections of the four teams, we have come to realize that our sector programmes are merely steps within a larger transformation process. When engaging with partners and stakeholders in the design and planning of a sector programme, it is important to clarify this aspect. During implementation, transparency should be maintained regarding the specific part of the transformation process to which the programmes aim to contribute. The insights gained emphasize the importance of deliberate engagement with a larger, broader and more diverse group of stakeholders. This means that in guiding transformation, the programmes should make conscious choices regarding, for example, inclusion and equity, ensuring that agro-food sectors contribute to a more just society (Reemer et al., Chapter 4). Similarly, deliberately-chosen stakeholders need to be involved. This is to ensure that sector transformation processes intentionally contribute to two outcomes: firstly, to planetary health; and secondly, to connecting sector framing to spatial framing at global and local dimensions (Van Weert et al., Chapter 5).

While recognizing the complexity of the transformation process, sector transformation programmes should evaluate their assumptions leading to specific societal and environmental outcomes. It is also crucial to consider the dynamics associated with social, economic, and environmental drivers, enabling the programmes to adapt and effectively manage the transformation process in an adaptive manner (Kusters et al., chapter 3).

Sector transformation programmes constitute a significant body of work for WCDI. During the research phase leading up to this current publication (Brouwers et al., Chapter 1), a critical reflection arose concerning the strategies and practice employed. It is noteworthy that this publication prompted WCDI advisors to gain valuable insights on and reflect upon their own strategies and practice. By embarking on a joint critical journey – multidisciplinary and multi-perspective – we have uncovered valuable information about the organizational culture and dynamics of WCDI. It is paradoxical that the preparation of this publication triggered these reflections rather than the earlier, and perhaps more isolated, projects where we emphasized system thinking and holistic approaches. Thus, this self-assessment was and is greatly needed as it propels us forward, prompting us to reflect on our collective position, critical capabilities, and our legitimacy as a knowledge player advocating holistic and systemic approaches. This is relevant not only for the WCDI groups involved in sector transformation but also for those from other groups who have joined the current knowledge project.

6.4 Emergent principles for sector transformation

When synthesizing the outcomes of the analysis by the four teams, the joint team, with colleagues who each had conducted and concluded the analysis, began by posing several key questions: *Where are we now as sector practitioners? Where are we now in our strategies for, and practice of, sector transformation? and Where do we want to go in this practice? And why?* The synthesis process led to the emergence of a few principles. They pertain to both the process of sector transformation and the sector programmes.

Principle 1: Practice system thinking and take an integrative approach

We place sectors within a larger food system which are part of societies positioned within the wider natural environment. We also zoom in and zoom out on specific sector functions such as production, value creation, regulation and stakeholder organization, and address interactions between those functions. We also study the functioning of the sector as a subset of the food system. Enabling actors to recognize their systemic role allows them to "see" the sector system and understand perspectives of other sector actors. It also highlights the importance of collaboration and cooperation among actors to cultivate a functional and high-performing sector. Moreover, we learnt that the focus on food system outcomes (food security and nutrition) needs to move to a more integrative approach contributing in the direction to multiple outcomes. As elaborated in the two previous sections of this chapter, the call for a focus on socially just food systems and planetary health in sector transformation is explicit.

Principle 2: Recognize and appreciate complexity

No longer do we approach change processes in sectors in a linear manner. We approach by using the integrated framework of sector transformation, with its sets of functions within both the production and the governance domains as well as their interactions (Borman et al., 2022a). By positioning agro-food sectors within the food system, we recognize the complexity of the system and apply system thinking to understand and engage in system change with sector partners. This helps to create a sectoral learning framework and guide transformation processes.

Principle 3: Embrace a culture of learning

When we address a specific challenge in one sector function, e.g., regulation within a sector, it impacts other functions within the sector as well. For instance, Kusters et al. (Chapter 3) showed this in their analysis of the experiences with the ISSD Uganda programme. In the seed sector in Uganda, the ISSD Uganda programme identified the lack of quality seed for specific crops as a challenge. It supported the development of local and community level seed businesses that produce and market seeds of those crops. However, they soon encountered a new challenge posed by the seed regulatory framework for the production of certified seed. In response, ISSD Uganda worked within the regulatory framework to develop a new class of seed quality that matches the business model of local and community-based seed producers. By actively learning from the challenges they faced, and using that knowledge to adjust their strategies, the ISSD Uganda programme demonstrated the value of a culture of learning in achieving meaningful sector transformation.

Principle 4: Apply adaptive management

In the ISSD Uganda example above, the third and fourth interrelated principles suggest that in sector transformation it is crucial that we learn if the change in regulation results in the required impact and what associated steps are required. As such, a culture of learning and practicing adaptive management of the transformation process are critical to achieve impact.

Principle 5: Invest in transformative capacities

We recognize the critical importance of investing in transformative capacities to drive meaningful change in agro-food sectors. Transformative capacities include those focused on strengthening the technical competences (for instance, seed breeding and innovative agro-system business models) and the functional capacities aiming to redesign processes (for instance, reflexivity, adaptiveness and response, and fostering collaboration). This principle highlights the need to foster transformative capacities among sector governance practitioners and to embed them in governance processes. By doing so, we can effectively address evolving challenges and seize opportunities for sustainable and inclusive agro-food systems. To achieve this, continuous professional development of sector practitioners is needed, as well as establishing effective knowledge management processes that facilitate collective learning and redesign of sector governance actions.

Principle 6: Create a space for governing transformation

This principle was well illustrated in the case of integrated watershed management in Latin America (Namugumya et al., Chapter 2). In the analysis of this case, effective governance was deemed as crucial. In their analytical framework, the authors applied the three lenses that are commonly used in governance literature and adapted them to the context of agro-food sectors: sector policy, sector polity and sector politics. In summary, sector policy refers to the programmes, laws or regulations that result from the varied decision-making processes that shape the sector; sector polity concerns the structures adopted in governing, how sector functions are organized and the composition of authorities that guide sector activities; and sector politics are about the interests and behaviours of the constellations of actors participating in sector development. In the Latin American case, we learned that facilitating a transformation process needs to be governed, as well as the governance of the sector itself. The need for governance of transformation is reinforced when considering the abovementioned insights based on the insights shared by Kusters et al. (Chapter 3) on the need for adaptive management of the transformation process.

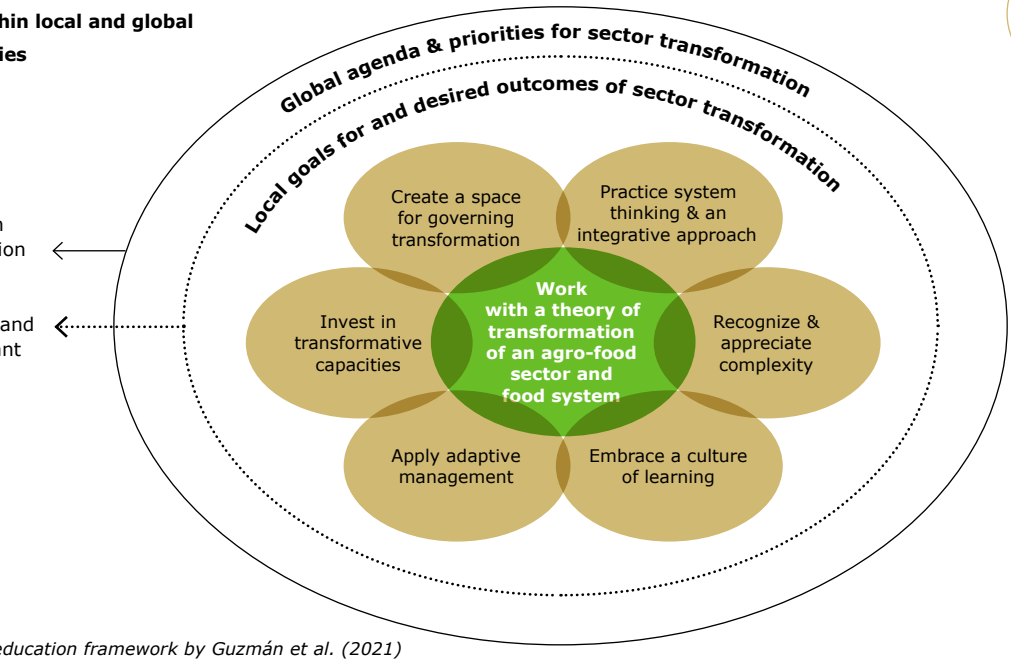
Principle 7: Work with a theory of transformation of an agro-food sector and food system

In the common practice of sector programmes, we used a Theory of Change guiding the implementation through strategizing, monitoring, evaluation and learning of those programmes. But we gained the insight that these programmes, with their theory of change, are part of a larger whole, being the transformation of a sector, which then is embedded within a larger food system.

A reflection is that theories of change need to be rooted in larger theories of transformation of an agro-food sector and food system.

The emerging seven principles constitute inputs that provide direction and development of our practice in sector transformation. Given that we worked with four defined perspectives, and we know that other perspectives also exist, we consider this only a next and partial step, also considering this a stage in the evolution of our work as highlighted by Brouwers et al. (Chapter 1). Even though the principles are presented individually, they are interdependent and interconnected. The position of the practice and directions for sector transformation, with its seven principles, is placed below in Figure 6.1 within both local and global dimensions, inspired by Guzmán et al. (2021) with their planetary health education framework and Raworth (2017) with the doughnut framework of social and planetary boundaries.

Figure 6.1: Visualization of the emerging principles providing direction and shaping new practice in sector transformation, placing it within local and global contexts, agendas and priorities



Inspired by the planetary health education framework by Guzmán et al. (2021)

Applying the principles, programmes aimed at guiding sector transformation should engage with a range of diverse stakeholders. This means that not only the stakeholders involved in the transformation process should be diverse, but also the programme team guiding this process should be diverse and multidisciplinary. It should also be clear that the transformation of a sector is not bound to a period of a programme, which is usually four to five years.

Although programmes play an important role in driving change, they are only a partial component of the larger multiyear process. Therefore, while transformation goals can be overarching, it is important for programme goals to explicitly acknowledge that they can only make a partial contribution.

6.5 Reconfiguration of the integrated framework

In our synthesis, incorporating the four perspectives and with the above elaborated principles and theory of transformation, we recognize the need to reconfigure our integrated framework for sector and food system transformation (Figure 1.1).

- Namugumya et al. (Chapter 2) recommend incorporating a 3P-scan addressing governance within sector transformation and move towards governing transformation processes.
- Kusters et al. (Chapter 3) emphasize the necessity of adaptive management in transformation processes. This involves strategizing, monitoring, evaluating and learning to guide and allow for adaptation through the process, while also realizing that transformation programmes are merely parts or stages within a larger transformation process.
- Reemer et al. (Chapter 4) call for transformation that fosters socio-economically just sectors.
- In a likewise manner, Van Weert et al. (Chapter 5) advocate for an eco-centric approach in sector transformation and adding spatial dimensions with clear implications on goals and prioritization in outcomes, definitions, and activities.

In configuring the framework guiding transformation of agro-food sectors and food systems, several considerations were taken into account:

- *Multiple sectors:* No single, but rather multiple, agro-food sectors operate within a larger context of food systems.
- *Embeddedness:* Both agro-food sectors and food systems are embedded within larger local and global contexts.
- *Sector functions:* The agro-food sector includes functions relevant to production and value creation, but also governance.
- *Transformation goals:* The directions for the transformation of food systems, including their agro-food sector components, should not only contribute to food security and nutrition, but also become more just and contribute to planetary health.
- *Non-linear model:* The framework guiding sector transformation should allow for more connectiveness and move away from linear change models.
- *Local and global domains:* The framework should appreciate the embedding of agro-food sectors and food systems within both local and global domains of social and planetary boundaries.

Building upon these considerations and the seven principles, we advanced our thinking to position transformation of agro-food sectors and thereby food systems within the doughnut model developed by Raworth (2017). Box 6.1 provides a brief introduction to the doughnut framework for sustainable development.

Box 6.1: Doughnut framework for sustainable development

The doughnut is a visual framework developed by Raworth for sustainable development, combining both concepts of planetary and social boundaries. The name derives from the shape of the diagram, that is, a disc with a hole in the middle (see Figure 6.2). The centre hole depicts the proportion of people that lack access to life's essentials (healthcare, education, equity, housing and so on) while the crust represents the ecological ceilings (planetary boundaries, through biodiversity loss, climate change, land conversion and so on) that life depends on and must not be overshot.

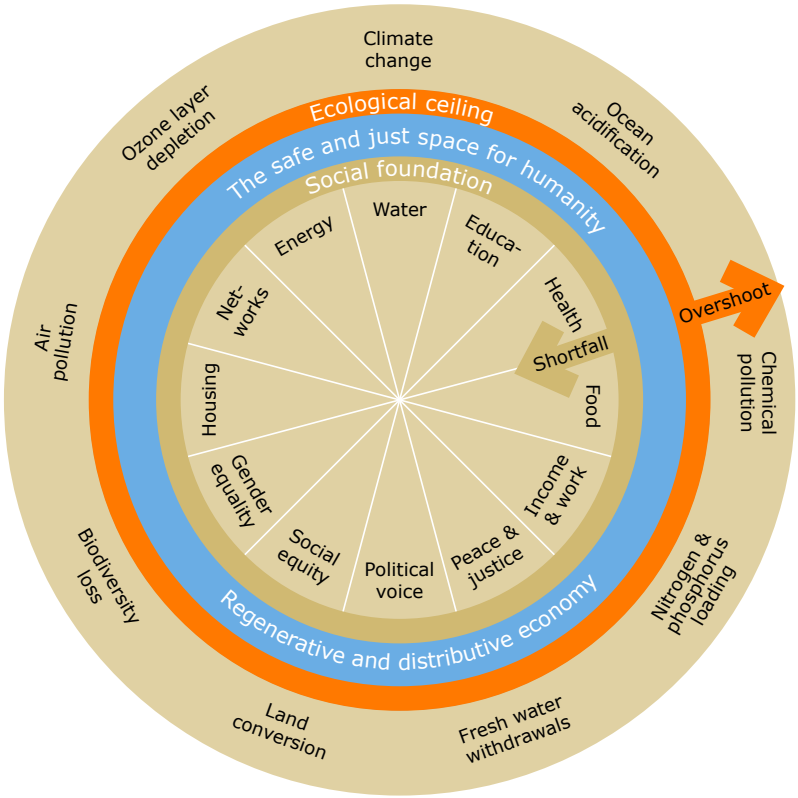
The doughnut framework was proposed to regard the performance of an economy by the extent to which the needs of people are met without overshooting Earth's ecological ceiling. In this framework, an economy is considered prosperous when all twelve social foundations are met without overshooting any of the nine ecological ceilings (see also Figure 6.2). This situation is represented by the area between the two rings, considered by its creator as a safe and just space for humanity. Raworth suggests that social boundaries should be combined with a planetary boundaries structure.

Within the framework, shortfalls and overshoots in the circles show, respectively, the social foundation and the ecological ceiling, encompassing a safe and just space for humanity. Inward-directed arrows show shortfalls in the social foundation (e.g., food, income & work, water and social equity). Outward-directed arrows show overshoots of the ecological ceiling (e.g., air pollution, biodiversity loss, climate change or freshwater withdrawals). The extent of pressure on planetary boundaries that are not currently being overshot is not shown here.

Sources: Raworth, 2012; 2017

Figure 6.3 provides our first thinking for a new framework for guiding sector transformation. It is a response to the four perspectives used in the knowledge project and needs further maturation. The aspects of shortfalls and overshoots allows for a transformation of sectors within clearly defined social and environmental boundaries. From the inclusion perspective, working within social boundaries means moving from a leaving nobody behind mindset. This is combined with the environmental perspective, for which working within social boundaries means moving from a do no harm mindset to recognize the need to move further to a social justice and regenerative mindset both in terms of social and environmental dimensions.

Figure 6.2: Doughnut framework for sustainable development



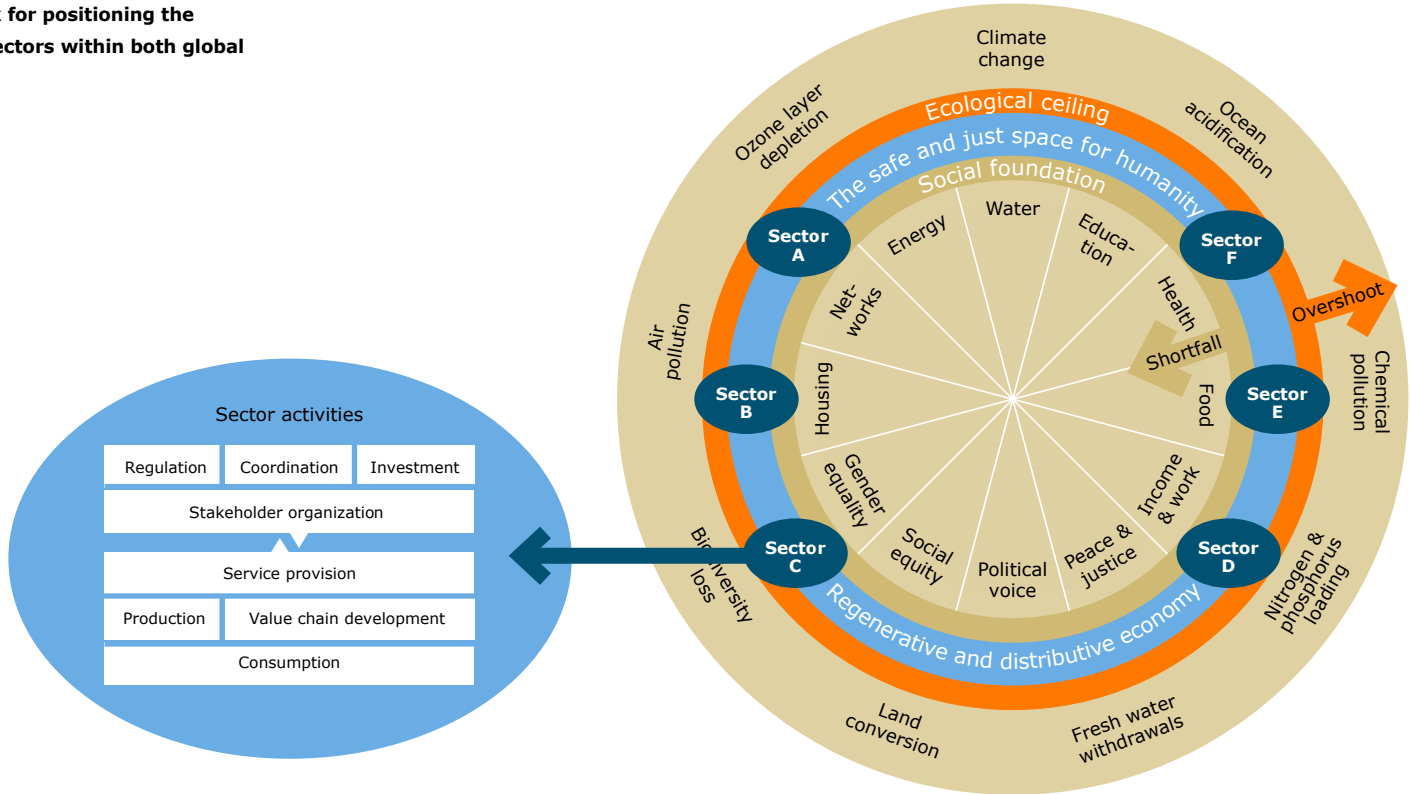
Sources: Raworth, 2012; 2017

6.6 Guidance for improving direction and practice

The synthesis, with the four perspectives analysing and learning from practices in sector transformation, has identified features that can strengthen and support meaningful sector transformation. It is our aim to apply and refine this collection of features over the coming years, together with our partners. The features are as follows:

- *Apply spatial thinking:* The reflections on practice, with an environmental but also with an inclusion perspective, highlighted the need that we need to insert spatial thinking in sector transformation strategy and practice. With the visualization of the emerging principles providing direction and shaping new practice in sector transformation (Figure 6.1), and first step of the reconfiguration of the transformation framework using the doughnut model (Figure 6.3), we inserted the dimension of local and global contexts. Spatial thinking helps sector actors to become aware that their knowledge is place-based and embedded in a particular context.
- *Be open for trade-offs and synergies*: Similar to food system analysis (Posthumus et al., 2021), we need to identify multiple trade-offs and synergies in sectors. In other words, we need to be dynamic in responding and sometimes adapting to those trade-offs and synergies. We should also be conscious about trade-offs of the choices made regarding outcomes and thus transformation processes, both locally and globally. We can also learn from other sector transformations in other sectors and elsewhere, both from how they dealt with failures and opportunities as well as how they achieved sector outcomes. These might also include non-agro-food sectors like energy, education and health care.

Figure 6.3: Graphic framework for positioning the transformation of agro-food sectors within both global and planetary boundaries



Inspired by and adapted from: Raworth (2017)

- *Plan for multiple outcomes:* Multiple and mutually-reinforcing outcomes should guide and direct transformation processes, and thus our sector programmes. We have just embarked on the practice of sector transformation (Figure 1.1 evolving to Figure 6.3), which helps to show how multiple outcomes are expected to emerge and reinforce each other, and to show which assumptions the sector partnership will have to monitor. The assumptions, especially, articulate how sector partners conceptualize how the sector will transform. If the assumptions do not hold, the partnership will have to adapt its strategy.
- *Be transparent:* While making choices and priorities on specific directions, and thus outcomes, we should become more transparent and accountable, as argued by all four sector perspectives. This feature should be coupled with the next point on dealing with power dynamics; both require a clear communication strategy with a visual theory of transformation and its vision of a transformed sector, as well as a narrative, that can be used for communication with all stakeholders.
- *Be deliberate on power dynamics:* In line with the previous features of trade-offs and transparency, we should be conscious and explicit about power dynamics in agro-food sectors and food systems and its many dimensions. Whereas we have a set of analytical power tools (including participatory tools, allowing underprivileged actors as well as environmental concerns to be represented), we do not yet see a deliberate practice of a power strategy so that these actors and environmental concerns can become central in sectoral governance (Chapters 4 and 5). Application of the 3P governance scan can help to make meaningful steps here, but this should be combined with an action perspective.
- *Help partners to agree on roles and partnerships:* Practitioners and transformation agents need to take on different roles in a concerted way to guide and support processes of transformation of agro-food sectors. In addition, it is important for them to be aware of their roles and engage in explicit partnerships that contribute to the sector transformation process. As sector partnerships include a variety of often large groups of stakeholders, like agricultural producers and private sector actors, often we see a practice of sector champions, representing key sector stakeholders, working together. At the start of a sector transformation change process these sector champions often collaborate more informally with collaborative leadership, before embarking on a more formal process.

6.7 Next steps in co-creation and use of sector transformation knowledge in action

This publication is the result of a multidisciplinary knowledge project of WCDI, a first cornerstone project, gaining knowledge insights into our practice in the use of knowledge in sector transformation. The knowledge project allowed involved WCDI advisors from different groups to share, deliberate, gain new insights, reflect and thereby in a process of co-creation advance our knowledge on agro-food sector transformation.

First, the group working on sector transformation was put in the position of working together with their own colleagues and peers to address the emerging (both internal and external) critiques to the approach, taking in many sector transformation programmes, practices and strategies. Likewise, the colleagues and peers from four other teams were placed in a position to use their critique and insights in a constructive manner; first with their own group, and then together with sector practitioners, they reflected upon strategies and practices; based on these reflections, they provided directions, emergent principles, and practical guidelines. Thereby, they were placed in a position to move beyond critique; rather, in a process of co-creation, they advanced practice and provided new directions for sector transformation.

A unique feature of the knowledge project was that it allowed engagement with a process of co-creation that had four perspectives in parallel but also allowed synthesis at various moments. In this manner, the knowledge project advanced not only the practice and knowledge in action of WCDI and its partners in sector programmes, but also WCDI and its partners' practice

and knowledge in action in governance, SME&L, inclusion and environment. WCDI was at the time of this knowledge project undergoing reconsideration of its overall strategy. This project therefore allowed us to propose the incorporation of the social justice and planetary health directions. Likewise, advancing the governance of transformation processes, and governance of those being managed, in an adaptive manner has provided new directions for WCDI's role as knowledge partner in sector transformation programmes.

We realize that the knowledge project resulting in this publication has taken only four perspectives; we should remain aware of other existing perspectives critical to advancing and providing direction to our work. The team working within WCDI on sector transformation, in its continued work and partnerships with organizations in the Global South, will share gained insights and reflections. As knowledge partner it will be able to put these insights into practice in their work assessing sectors, developing road maps, and developing strategies for the transformation of agro-food sectors within the larger frameworks of socially just food systems contributing to planetary health. Together with their partners they will bring this practice and new directions in our work in sector transformation.

The multidisciplinary team working together in the knowledge project has developed an agenda with the seven principles and doughnut-inspired framework for transformation to socially just agro-food sectors contributing to planetary health; but this needs further thought and discussions, and research into the processes of co-creation within the transformation programmes. Together with our partners in the Global South, this agenda will guide and inspire our future knowledge in action. The emerging framework will generate new knowledge questions on the processes of knowledge co-creation and knowledge use in WCDI's programmes and partnerships. The knowledge project of which this publication is the result shows the critical value of WCDI as a knowledge in action partner engaging in research activities as a mechanism for knowledge co-creation. Both externally and internally, it brings together multiple different perspectives within the unique setting of WCDI, and thereby generates knowledge relevant to its overall goal of transformation of inclusive food systems contributing to planetary health.

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