Greening the MSD approach in agricultural programmes

WORKING DRAFT

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Conception

This guidance note was conceived and commissioned by members of the DCED's Working Group on Market System Development in response to needs expressed by donor agency staff and their programme implementers.

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The BEAM Exchange - in partnership with the DCED - is a platform for knowledge exchange and learning about the role of markets in poverty reduction.

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Introduction

0.1   What this guide is

This guide aims to help donors and practitioners design and implement impactful agricultural programmes that use the Market Systems Development (MSD) approach, and want to be intentional about achieving environmental goals. It guides readers through a structured process for the critical thinking needed to properly consider environmental factors in such programmes.

Environmental sustainability objectives may encompass climate adaptation, mitigation, resilience, as well as considerations around soil management, biodiversity conservation or pollution reduction. We use the term 'greening' as shorthand to refer to the mainstreaming of these goals.

> **Box 1: Scope of this guidance document**
>
> Throughout the guide, **agriculture** refers to activities geared towards growing, harvesting, processing and marketing products intended for food or other uses (such as energy or construction). It encompasses farming, fisheries and agropastoral activities, as well as foraging and connected activities such as apiculture.
>
> **Environmental sustainability** refers to the responsible management of natural resources and the respect for ecosystem dynamics necessary to allow current and future generations to thrive by addressing the triple planetary threat that humanity faces: climate, pollution and biodiversity.
>
> **Greening** refers to the actions that MSD programmes can follow to introduce environmentally sustainable practices in their portfolios. These range from discreet activities to programme design decisions that mainstream green considerations.

'Greening' is a relatively new ambition for practitioners of the MSD approach, but one that is fast gaining traction. Consequently, this document draws on a small but growing body of lessons and research on this topic and will be updated regularly as more evidence becomes available.

As a first attempt to document and codify efforts to ensure greener results when using the MSD approach in a fast-changing world, this is not a definitive document. It will be revised with the benefit of lessons, and complemented in future by examples, from the broad MSD community. These resources will be available via the Greening MSD page on the BEAM Exchange website.

0.2   Who this guide is for

> This guide is relevant for any level of ambition to 'green' an MSD programme: from mere curiosity to pilot greener business models in an intervention sector through to having a comprehensive strategy that puts a programme's environmental and economic **objectives** on an equal footing.

This guide is therefore for all MSD implementers, consultants and donors that are asking themselves the following kind of questions:

- **How do I manage the unnecessary friction between reaching poverty reduction impact targets and promoting environmental sustainability?**
  Traditionally, MSD programmes frame their poverty reduction objectives in ways that make them appear at odds with environmental sustainability by for example over-emphasising yield increases at the expense of ecosystem health. This positioning situates humans outside of the natural ecosystems in which we exist – rather than promoting win-win solutions that can bring long-term prosperity for both humans and nature. The guide will support you to factor in green objectives throughout the MSD lifecycle and will explain why success in a green agriculture MSD programme may look different to how we understand it in conventional agriculture. This is covered in Chapter 4.

- **How can I go about encouraging market players to embrace environmentally sustainable practices?**
  In this guide you will find ideas to ensure that you engage with the right type of partners depending on your objective prioritisation, and that you negotiate appropriate support packages. More details are provided in Chapter 4.

- **How do I recruit and train my team to ensure they embrace greening considerations?**
  Greening a programme at any stage of the lifecycle will require a combination of technical and management skills. The drive to mainstream green considerations is relatively recent: this guide provides some pointers regarding the skills that implementers may want to bring on board, particularly in Chapter 6.

- **What types of indicators do I need to measure and track?**
  MSD practitioners are familiar with the difficulties linked to attributing change to programme interventions, and to the challenges linked to building and nurturing a culture of learning and adaptation to support adaptive management. Environmental sustainability indicators can add a layer of complexity: the monitoring, evaluation, and learning (MEL) section will help you right-size your MEL efforts. Chapter 5 will help you structure discussions around indicator prioritisation and the allocation of sufficient resources towards capturing progress.

0.3   How to use this guide

The guide is structured to complement the widely-used M4P Operational Guide.

It is organised around the six familiar chapters that represent the lifecycle of any programme using the MSD approach (Figure 1).

This means you can jump to the most relevant chapter depending on where your programme stands, and the types of questions you seek to answer:
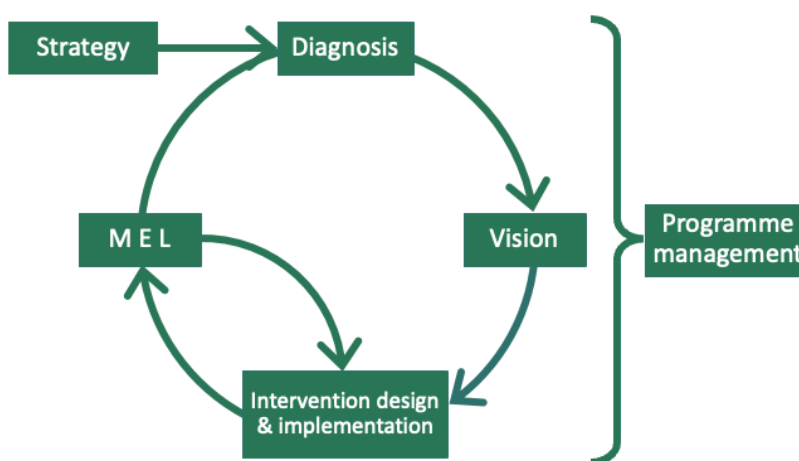
Figure 1: The MSD programme lifecycle

Table 1: Guiding questions	
Chapter	Questions for greening MSD phases/components
1. **Strategy**	What type of greener agricultural systems change do you want to achieve?
2. **Diagnosis**	Have you analysed the agricultural system in a way that allows you to understand environmental dynamics?
3. **Vision**	Are you considering economic, social AND environmental sustainability?
4. **Design and implementation**	Are you being tactical or distortionary in pursuit of green objectives? Are the interventions contributing to your greening objectives systemic?
5. **MEL**	Are you basing decisions on evidence, and are you fostering a culture of knowledge, learning and adaptive management that considers the environmental dynamics?
6. **Management**	Can your team and/or your consortium partners deliver on greener programme objectives?

Each chapter outlines the main types of audiences who may find the content relevant, and a **checklist** teams can use to ensure they are considering the most relevant steps:

● Start by deciding where your programme lies on the 'Greening Spectrum' (Fig. 2) to determine the degree to which you need to incorporate the guidance under each section.

● If you're prepositioning, bidding or were just awarded a green MSD programme, read it as a team to ensure you have an overview of the main steps involved in programme design.

● If you're already implementing a programme and you decide (or are asked) to mainstream greener considerations, you may go directly to sections four, five or six.

Naturally programme goals evolve, and objective priorities are not always clear-cut. So the Greening MSD Spectrum (Figure 2) is designed to help you identify where your programme sits in the wide possible spectrum of ambitions for achieving environmentally sustainable results in practice.

Once you've read the relevant chapters, use the checklist to ensure you incorporate key steps.

The guide also includes a glossary of the main terms you may encounter in the framework of environmentally sustainable programming.

What not to expect from this guide

The guide focuses on greening the MSD approach in agricultural markets (encompassing agri-food systems and value-chains). The material may be relevant to other sectors, but this is not the priority here.

This document assumes basic familiarity with the MSD approach and terminology used in the Operational Guide. More information is available on the BEAM Exchange website. Given that the MSD approach is designed to deliver on poverty reduction objectives, the guide will not be useful for programmes that are only concerned with environmental sustainability or with nutrition objectives.

Gender and social inclusion (GESI) considerations should be incorporated at all stages of programming, but considering the wealth of GESI guidance and resources available elsewhere, this document does not provide extensive guidance on this topic

0.4   Why this guide is needed

Globally, agriculture is one of the sectors that contributes to and is most affected by the triple planetary crises of climate, biodiversity and pollution. The agriculture sector in low and middle-income countries contributes far less per capita than wealthy countries to GHG emissions. However, smallholder farmers and other small-scale producers sometimes follow practices that degrade their natural environment and increase their exposure to climate risks such as natural disasters, changing weather patterns and rising temperatures. These practices lead to lower yields and disrupted livestock productivity, which particularly affect women and marginalised groups[1]. Their yields are already typically 20-30 per cent lower than those of men due to unpaid care responsibilities, poor access to climate-smart inputs, services and information; and lower rates of land ownership, literacy and agency.[2]

Agriculture is still one of the main economic and employment drivers in many of the developing and emerging markets where MSD programmes operate – so a frequent sector of focus. Much agricultural development programming historically tended to treat pro-poor economic growth (e.g. higher incomes for poor farmers) as a justification for over-exploitation of natural resources. In 2015 the M4P Operational Guide (page 7) highlighted the difficulties of reconciling poverty reduction and

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[1] IFAD (2022) *Gender and climate change*, ASAP Technical Series
   https://beamexchange.org/resources/1894/

[2] Value for Women (2018) *Gender Inclusion for Climate-Smart Agribusinesses*
   https://beamexchange.org/resources/1895/

environmental objectives by advising that "Programmes should have a single, clearly defined poverty objective. Multiple poverty objectives (e.g. increased income and reduced environmental degradation) dilute focus and create practical consequences that tend to make programmes less effective".

However, the inevitability of trade-offs between economic gains and environmental sustainability is now challenged by a growing body of evidence, at least in developed economies. Many donors and practitioners are increasingly interested in harnessing the power of agricultural markets (and adjacent services such as finance or insurance) to deliver not only on food security and social prosperity, but also on environmental goals. This guidance is thus a response to the demand to capitalize on the opportunity presented by agricultural markets as drivers of a Just Transition.

0.5   The 'Greening MSD' spectrum

Agricultural programmes that use the MSD approach are as varied as the donors who fund them and the contexts in which they are implemented. The degree to which they incorporate environmental sustainability objectives varies across a wide spectrum. The Greening MSD spectrum presented in Figure 2 may help you determine where you stand depending on the types of objectives you have agreed with your donor. This in turn will help you decide which elements of this guide make sense for your programme. The clearer you are about your objectives, the more effective you will be in greening your programme – and the better able you will be to reconcile different types of objectives without losing poverty reduction as your North Star.
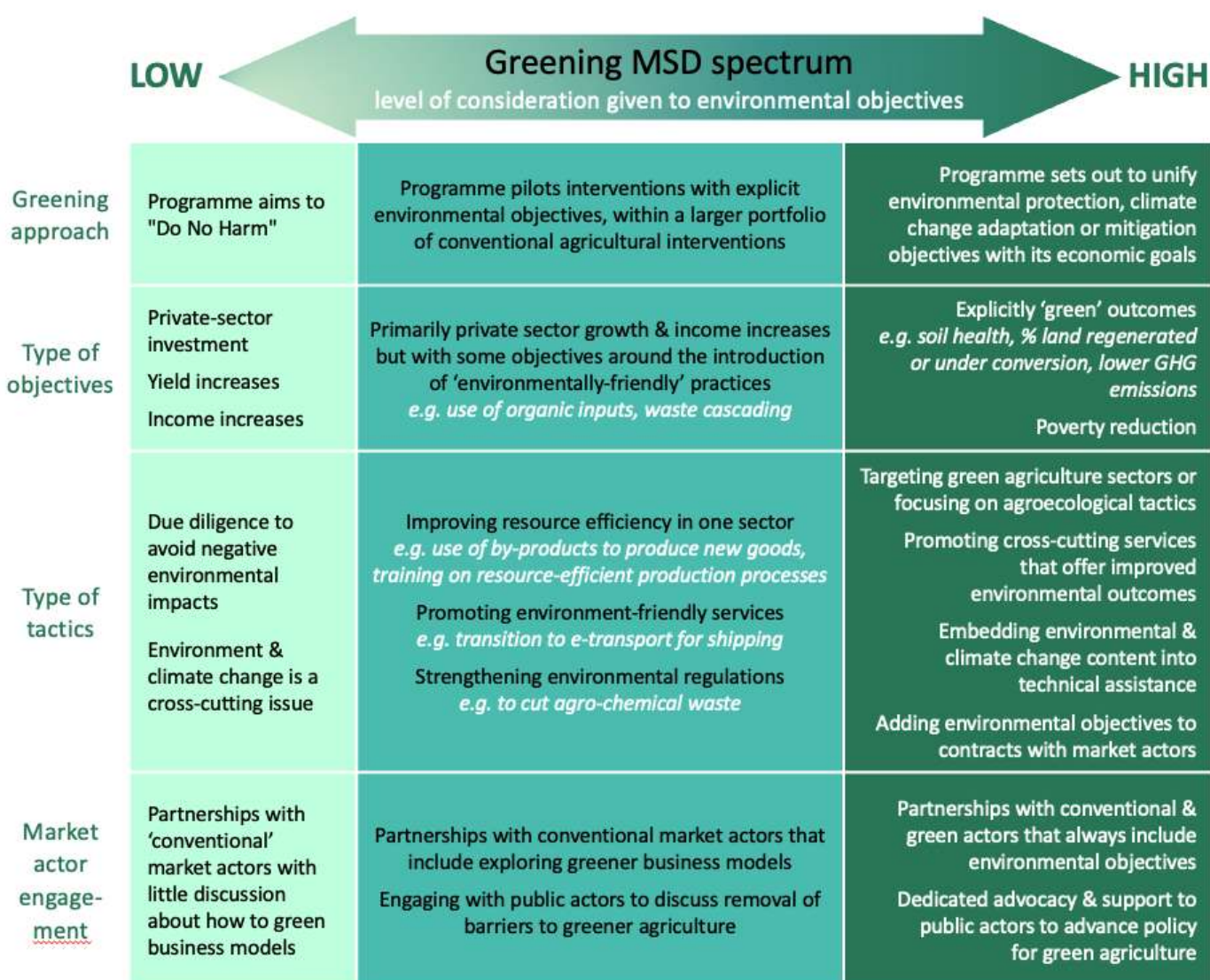

Figure 2: The Greening MSD Spectrum

1.   Strategy

What type of green agricultural systems change do you want to promote?

Lifecycle stage:	Programme conceptualisation (donors) and / or Inception phase (donors and implementers)

Section overview and objectives

There are many reasons why you may want to strengthen the green focus of your agricultural programme from the outset. You may want to future-proof the agricultural sector of the region where you're working and realise the best way to do so is to promote sustainable or climate-smart practices. Or it may come as a requirement from donors or headquarters, or as a request from national counterparts.

Whatever the reason, be aware there may be trade-offs: programmes that emphasise environmental outcomes may have to rethink their impact targets, and vice-versa. This chapter will help you determine how the different types of objectives can be assessed in the framework of developing a strategy for your MSD programme. These decisions will inform documents such as terms of reference to identify an implementing partner, programme design documents, or the inception report of your MSD programme.

1.1   Programme procurement

Who does:	Donors

One of the most challenging situations for programme implementers and donor agencies alike is when a programme is asked to revise its objectives after the programme is underway – as it may require a restructuring of the team and a revision of partnerships. This reduces efficiency and may affect the programme's reputation. This has happened to some MSD programmes that started out by having a purely economic growth focus but were asked to mainstream environmental considerations to reflect updated guidance from headquarters midway through implementation.

To avoid this situation, it is important that donors[3] are clear from the procurement stage about the hierarchy of objectives that they want a programme to contribute towards. To ensure that the right elements are considered, procurement staff from donors should ask themselves the following types of questions:

- Are there (or is it expected there will soon be) any environment or climate change agendas or guidelines issued by the donor country that should be incorporated into the programme design? How do these fit with other strategies?

- Are the impact objectives feasible in terms of addressing both environmental and economic goals within the foreseen programme timeframe? (use the Greening MSD spectrum to help)

- Is the tender document clear in terms of the types of green objectives that the MSD programme should achieve?[4]

- Do you have sufficient budget to conduct an environmental assessment of the sectors that you've selected, or is such a budget included as part of the inception phase?

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[3] Every donor has different processes and criteria. Readers should determine the degree to which the general concepts outlined in the chapter are relevant and applicable to their internal procedures.

[4] A simple way of ensuring this could be to include a clear definition of how the donor understands certain commonly used yet ambiguous terms related to greening agriculture.

> **Box 2: A hypothetical (but realistic) scenario**
>
> A donor sought to better understand dynamics that could affect green agriculture in a priority country. Before tendering the programme, they commissioned a research outfit to conduct an analysis of the viability of introducing new business models and supporting markets that benefit the poor and increase climate resilience by:
>
> - Identifying greening business models and partners that are relevant to the target markets.
> - Assessing the robustness of service providers for investment identification, design and feasibility, and in brokering partnerships to increase the flow of bankable proposals in the area of climate-smart, pro-poor agriculture.
> - Exploring the willingness of businesses to build investment plans on the back of analysis, which benefit the poor as consumers, suppliers, clients, or employees, and increase their resilience to climate change.
>
> This research was instrumental in ensuring the programme was tendered on the basis of a contextual understanding of green agricultural markets.
>
> *Example adapted from John Rachkara*

1.2   Setting up the strategic framework

Who does: Donors, implementers, or together

The MSD strategic framework[5] is the most basic blueprint for a programme's theory of change. Depending on the degree to which green objectives are mainstreamed in your programme (see the Greening MSD spectrum) it may take elements from Figure 3.

Define and prioritise high-level objectives

Good MSD practice suggests that to account for the very rapid changes that characterise developing and emerging markets, donors provide a North Star (high-level objectives) and that they oversee how implementers use the inception phase to map out how change will happen. To define the high-level objective, you need to have a good understanding of:

- how agricultural markets work in the country or region where the programme will take place
- what type of actor performs what type of role linked to sustainability
- the appetite that financing sources and the government have to support greener agricultural activities, and
- how people living in poverty are currently affected by climate change or environmental degradation

Figure 3: Greening MSD Strategic

(Figure content: Resilient poverty reduction ← Target groups benefit from optimized agricultural performance ← Agricultural market systems work in ways that support the regeneration of natural capital ← Programme implements regenerative interventions)

This clear picture will ensure that you establish a realistic, contextualised set of objectives within the timeframe of your programme. You could use a table like the illustrative one below to guide you in mapping stakeholder types and information sources linked to agriculture and its role in the triple planetary crises of climate, pollution and biodiversity.
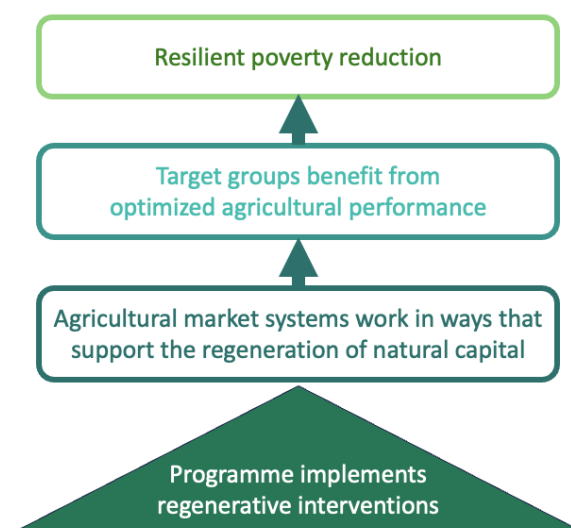
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[5] As described in Chapter 1 of the Operational Guide to M4P

Table 2: Public policy objectives and stakeholders' incentives to engage		
Public policy goal	Types of programme objectives	Types of system actors (potential partners) and their incentives for changing behaviour
Adaptation to the climate crisis	- adoption of heat, flood and drought resilient crops - better water management	**Agricultural communities** facing climate effects on crop yields, losses to pests and disease and water supply **Agri-businesses** facing disruption to supply chains for agricultural produce in the medium and long term **Public agencies** seeking to implement agricultural development strategies and national adaptation plans
Mitigation of GHG emissions	- cuts in post-harvest losses and food waste - cuts in methane from livestock - increases in tree cover	**National governments** aiming to fulfil international and bilateral agreements to limit GHG emissions **Corporations and agri-businesses** asked to comply with mandates and ESG guidelines to reduce GHGs **Agri-businesses** looking to make efficiency gains **Consumers** with preferences linked to sustainably produced and sourced products
Reduction in air and water **pollution**	- reductions in pesticide use and waste burning - cuts to fertiliser run-off and agrochemical leaching	**Agricultural communities** facing negative health outcomes from air and water pollution **Fishing communities** experiencing reduced catches **Urban communities** coping with water pollution from agro-processing discharges **Public agencies** seeking to implement air and water quality management plans
Soil health and conservation	- better husbandry of soil health - reductions in soil erosion - better waste management	**Agricultural communities** facing the impact of soil erosion and infertility on crop yields **Agropastoral communities** suffering from impacts of erosion on livestock food systems **Communities** suffering from improper waste disposal practices (e.g. landfill) **Public agencies** seeking to implement soil conservation or nutrient management plans
Biodiversity and **ecosystem services** protection	- diversification of food crop species & varieties - natural pest management - wildlife protection - amplification of indigenous knowledge	**Agricultural communities** facing reduced yields due to loss of pollinators and natural pest controls **Agricultural communities** experiencing food insecurity due to over-reliance on genetically uniform varieties **Communities** losing access to traditional food sources and knowledge **Agricultural research institutes** aiming to support adoption of diversified and resilient crops

To give an example: consider a four-year programme that targets subsistence livestock herders living in poverty in a drought-affected region with weak public sector presence. In this context…

- **an unrealistic greening objective:** proven improvements in ecosystem health or increased hectarage under regeneration - alongside poverty reduction impacts
- **a realistic greening objective:** emergence or strengthening of a market system of climate-resilient input and service providers – alongside indicators of agropastoral livelihood diversification

In a different context, a programme working in a region with committed public sector officials and favourable weather conditions could reasonably expect to broker sustainable procurement agreements between schools and growers that result in environmental, economic and social benefits.

Regardless, you will need to think of how you expect scale to happen.
Jump to Section 4.3 Aiming for scale in greener agriculture for more details on this.

Define and segment the target group

It is likely that your target beneficiaries are farmers, fishers or agropastoral communities as producers, traders or processors. The more specific you are about your target group, the better you can define interventions that will remove the barriers they may encounter on their journey to greener agriculture. There are several ways you may refine your understanding, but the table below includes some of the elements that may help you segment your target population in a practical way.

> **Pro tip**: the more GESI disaggregation you include at this stage the more you will be able to target the most vulnerable while also considering how they currently interact with their environment, and how they're likely affected by the climate crisis or by soil or biodiversity degradation. Remember: if you are working at country level (as opposed to in a sub-region) you may need to do this for different agroecological zones to ensure you have a contextualised understanding of your target group(s)' needs.

Table 3: Illustration of criteria for target group segmentation			
Type & number of farmers active in the region	Example GESI considerations	Examples of plot size and use	Example farming practices & relation with environment
Subsistence (100,000 farmers)	50% female heads of HH, young men working part time as hired labour on commercial farms	1 acre, 75% staples and 25% vegetables. Year-round cultivation, all for self-consumption	limited use of pesticides on vegetable plot. no rotation practices due to plot sizes
Surplus (150,000 farmers)	positive link between market access and schooling of girls	5 acres with 1 acre managed by women for self-consumption and the rest mono-cropping	sporadic, unsupervised use of agrochemicals, mainly for fertilisation & pest management
Commercial (5,000 farmers)	certain ethnic groups mostly involved in certain stages of growing season	20 - 100 acres with an average of 5 annual crops per farmer	all land under conventional agriculture, surrounded by farmers who use agrochemicals.

While being specific about your target group will help you be impactful, it is also important to ensure that the target group or groups include enough people - otherwise the results you achieve may stay at niche level.

Identify agricultural sectors that reach targets and achieve objectives

Once you have defined the target group, you need to prioritise which agricultural sectors[6] are most relevant to your target group in line with your overall objectives. Jump to Section 3.2 to learn more about the advantages of selecting sectors that will allow you to implement a portfolio of interventions.

When considering your options, you should be mindful of the whole value chain: even if you determine that your target group is small-scale producers, do not limit your sector selection to production dynamics. Try to understand the impacts that the processing stages of the value chain have on both production and the environment as shown in Table 4 below, in combination with **Error! Reference source not found.**.

Table 4: Types of agricultural sectors (non-exhaustive list)		
	Primary production	**Processing**
Crop farming	• Arable farming: growing crops e.g. wheat, corn, rice & soy • Horticulture: cultivating fruits, vegetables, ornamental plants	• Food processing • Beverage production
Forestry	• Timber production: harvesting trees for lumber, paper, and other wood products. • Forest management: sustainable management of forests for conservation and commercial purposes. • Medicinal and aromatic plants harvesting	• Wood making • Herb drying
Livestock / dairy farming	• Cattle ranching: raising cattle for meat and dairy production. • Poultry or small ruminant farming: raising chickens, fowl or goats for meat and eggs. • Swine farming: raising pigs for pork production • Milk production: collecting and processing milk for dairy products like cheese, butter, and yogurt.	• Meat processing • Dairy processing
Fishing / aquaculture	• Fish farming: cultivating fish species such as salmon, trout, and tilapia in controlled environments e.g. ponds, tanks or cages • Open sea fishing: a.k.a offshore fishing, it can be conducted by anglers or commercial fishing operations.	• Fish processing (freezing, drying)
Cross-cutting sectors:	• Input supply (seeds, agrochemicals, machinery), services (digitalisation, mechanisation, packaging), extension, agricultural finance, agrotourism, waste management...	

Ultimately, you will need to decide if the programme works in one, or both, of these areas:

● ***Promote niche, green sectors***
– for example piloting agroecological approaches to cocoa farming or supporting the introduction of renewable energy solutions. This choice will support your environmental objectives, which may come at the expense of large numbers of farmers reached.

● ***Enable conventional sectors to be greener***
– you may decide to support conventional sectors to introduce sustainable practices such as integrated pest management, soil health management or water-efficient irrigation.

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[6] For the purpose of this guide, a sector may be understood as related to a specific commodity (e.g. tomatoes), a group (e.g. fruits and vegetables) or a cross-cutting function (e.g. agricultural finance). Ultimately a sector is bound by defined characteristics that allow us to apprehend it.

Some of the key considerations to bring into sector selection and prioritisation to ensure you mainstream green aspects are included in the table below, which is adapted from the ILO's tool: Sector Selection and Rapid Market Assessment for Addressing Environmental Sustainability in Value Chain Development.

It is best to fill it in as a team, keeping in mind your target group characteristics as shown in Table 3. While it is important to have an overview of general sector performance and dynamics, think about nuancing your assessment depending on how smallholders (as opposed to industrial farmers) interact with their environment in your context. Also, consider working both in 'vertical' sectors (such as fresh tomatoes) and in cross-cutting sectors (such as input, finance, or business service provision) – you just need to keep a clear vision of how they will support the green transition in agriculture.

Table 5: Sector selection criteria Sector (e.g. maize)	Answer	Alignment with objectives
Environmental sustainability [7]		
• What is the sector's contribution to GHG?	?	H / M / L?
• What is the sector's contribution to biodiversity loss, deforestation and/or soil degradation?	?	H / M / L?
• Which natural ecosystems are impacted by the sector (fish stocks, rainforest, etc.)?	?	H / M / L?
• What is the sector's resource intensity use (energy, water, land, etc.) per productive output?	?	H / M / L?
• How much and what types of waste are generated because of production?	?	H / M / L?
• How do production zones affect environmentally or culturally sensitive areas nearby?	?	H / M / L?
Environment-social sustainability nexus		
• What are the most significant climate change-related risks and vulnerabilities affecting the target group and how are vulnerable populations affected by these climate risks?	?	H / M / L?
• How have past extreme weather events impacted the area where target populations work?	?	H / M / L?
• Have community members been involved in the identification of climate risks and adaptation strategies? If so, what are their priorities?	?	H / M / L?
• Are there funding sources available to implement environmental protection or climate change measures?	?	H / M / L?
• Are there nature-based solutions, such as reforestation or wetland restoration, that could be used to support environmental objectives?	?	H / M / L?
Sector growth		
• What types of negative environmental impacts may result from sector growth?	?	H / M / L?
• Are there potential economic activities within the sector that would contribute to inclusive growth? (for example in the circular economy).	?	H / M / L?

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[7] Since many of these metrics will be very hard to quantify due to the lack of reliable data, you may decide to replace quantitative data with comparative qualitative assessments

Table 5: Sector selection criteria	Answer	Alignment with objectives
Sector (e.g. maize)		
• What is the existing / potential market demand for green products or services in the sector? Where is that demand located?	?	H / M / L?
Availability of market players		
• Which organisations (private/public) have a good track record of innovating and investing in this sector? Which have focused on environmental aspects of the sector?	?	H / M / L?
• What significant investments (green or otherwise) have recently been made or are planned for the near future?	?	H / M / L?
• Are there any public/private providers that are already providing green finance, training and/ or counselling services?	?	H / M / L?
Enabling environment		
• What are the relevant government policies and programmes (including environmental) which influence this sector, and how effective are they? (consider national, regional and local levels).	?	H / M / L?
• Is the sector prioritised by the country's Nationally Determined Contribution (NDC) commitments, National Development Plan, or equivalent? Are there specific references to making the sector more sustainable? (e.g. developing sub-sectors such as organic agriculture or eco-buildings)	?	H / M / L?

1.3   Defining the overarching objectives of the programme

Who does: Implementers and donors

By this stage, you have agreed on a strategic framework and defined target group(s) – both of which have guided initial sector selection and prioritisation. You next need to define the parameters that are going to hold the programme accountable. You should decide on the trade-offs you are willing to make between environmental and poverty reduction objectives and reflect those in your **theory of change** (TOC) and **LogFrame**. You will also need to staff the team in line with the programme's technical and managerial requirements.

Define high level indicators and targets (LogFrame design)

You will first need to agree on a TOC that aligns with the strategic framework. Ideally, you should involve stakeholders (such as Ministry counterparts or community representatives) in the process – not necessarily in drawing up the TOC but providing inputs that ensure that the steps and assumptions reflect their needs and vision. Once you reach a consensus, you will likely translate it into a LogFrame that will include Key Performance Indicators (KPIs) and targets. For guidance on defining these KPIs and targets, please refer to Chapter 5: Monitoring, evaluation and learning.

Build a versatile team

There are ample amounts of guidance around how to staff an MSD programme appropriately – as detailed in the BEAM Exchange's MSD Competency Framework. However, it is likely that your green agriculture MSD programme requires additional technical skills. Refer to Chapter 6: Management for more details.

1.4   Strategy chapter - checklist

- Are you clear about the trade-offs between economic and environmental objectives as you set your high-level programme objectives?

- Have you segmented your target groups based on evidence of how they interact with the environment (affect it / are affected by it?)

- Have you identified how the sectors you select affect the environment or are affected by it?

- Have you established a vision for change that strikes a balance between poverty and environmental objectives?

- Have you selected high-level indicators that will provide you with meaningful information on the uptake of greener ways of operating?

- Does the team have the right skillset and attitude to implement the programme, particularly with regards to green technical skills?

2. Diagnosis

Have you analysed the agricultural system in a way that allows you to understand climate and environmental dynamics?

Lifecycle stage: Analysis – diagnostics (inception phase, then as needed)

Section overview and objectives

This section provides guidance on how to identify, prioritise and assess the root causes that hinder the performance of green agricultural sectors. By the end of this process, you should be able to draft a market systems analysis.

2.1   Green-dive into the sectors you prioritised in the strategy section

Who does: Implementers

In the time lag between the launch of a procurement process and programme kick-off, the inception phase is a crucial period to update and refresh your knowledge. This is particularly concerning any new information related to the green dynamics surrounding the sectors that were originally selected.

This may also be a good moment to invest in deeper-dives to scan the prioritised sectors for additional potential issues, by using tools such as Environmental Impact Assessments (EIAs) or the Climate, Environment and Disaster Risk Reduction Integration Guidance (CEDRIG)

Governments may have updated their Nationally Determined Contributions, or a new donor-funded programme may have started that subsidises green investments in the agricultural sector. MSD programmes are inherently iterative and opportunistic: be prepared to adapt as opportunities arise.

> **Pro tip**: If you need to make substantial changes (by for example substituting sectors or redefining the geographic focus) communicate these needs to your donor to ensure the programme's objectives and goals remain aligned with their expectations.

2.2   Map the market system – focusing on green functions and rules

Conducting a market system analysis will help you understand how the sectors in which your target groups are engaged are not working to their benefit **or** to the benefit of environmental outcomes. This understanding is pivotal in shaping your programme's intervention strategies and objectives.

To conduct your analysis, you must start by ensuring that you have a solid understanding of the agricultural value chain. Depending on your team composition, you may have this knowledge in-house or you may need to supplement it with outsourced expertise. This mapping will help you determine the boundaries of subsequent analyses. Value chain maps are useful ways of mapping the different stages that an agricultural product goes through. You may find Table 6 useful to keep environmental considerations in mind for every step of the value chain.

Once the mapping is done, you can employ both traditional and innovative approaches to visualise the market and show how functions and rules affect your target group. A commonly used tool to do this in MSD programmes is the doughnut, which is amply explored in the M4P Operational Guide. The example in Figure 4 shows a generic doughnut that represents the system actors, functions and rules influencing the business relationship between small-scale maize farmers and aggregators.

Table 6: Examples of interactions between value chains (VC) and the environment[8]			
	Negative impact of the VC on climate and environment	VC affected by climate crisis / environmental degradation	VC contributing to greening objectives
Example	Production / processing practices causing soil erosion or pollution GHG emissions Natural capital depletion Harmful waste generation	**Directly:** reduced productivity, increased production costs **Indirectly:** volatile resource prices	CO2 sequestration Natural regeneration Sustainable agricultural practices
Tools & concepts	Lifecycle assessments, ecological and carbon footprints	Climate risks and vulnerability assessments	Carbon credit markets

Pro tip: This exercise requires access to sufficient knowledge regarding rules and regulations (both formal and informal) that relate to environmental matters. These are sometimes neglected in system analyses that focus on understanding functions, perhaps because programmes fear they have little room to influence rules and regulations. Don't make that mistake!
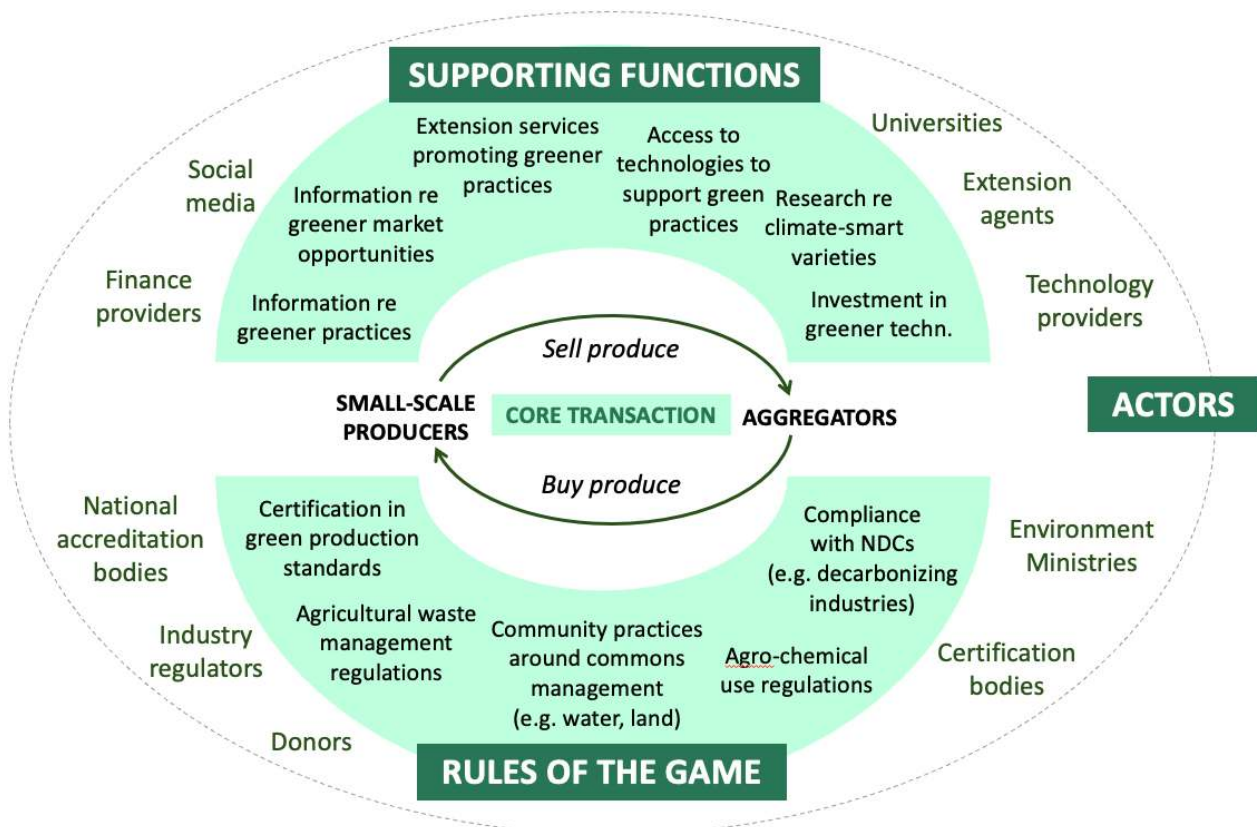

Figure 4: Illustrative Greening MSD doughnut for maize producers & aggregators

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[8] Adapted from Springer-Heinze (2018) *ValueLinks 2.0* [Box 2.4.2], GIZ, beamexchange.org/tools/126/

Depending on the greening objectives of your programme, you must be able to identify rules, regulations, and actors at different levels:

Table 7: Rules, regulations and norms affecting environmental performance (examples)	
National level	Nationally Determined Contributions (NDCs)
	Agricultural development strategies in relation to sustainable growth
	Tax or subsidy schemes that may affect the value chain
	Obligations related to international treaties or networks
	REDD+ frameworks
	Maritime protection measures
Subnational level	Green procurement guides at municipalities
	Energy or transportation planning competencies
	Waste management regulations
Informal rules	Community practices around use of the commons
	Traditional knowledge and practices linked to disaster risk reduction

While MSD doughnuts are useful tools that may help you visualise the markets in which you work, one of their limitations is that they externalise the environment and may be interpreted as a static view of complex, dynamic systems. You may choose to supplement the doughnut with other tools, such as the planetary boundaries doughnut shown in Figures 5 and 6, or value network analyses.

The planetary boundaries doughnut represents the ecological limits and social welfare foundations within which agriculture must operate to be truly sustainable. Keeping in mind the example of small-scale maize producers used in Figure, the planetary boundaries doughnut shows an alternative way of visualising the impact of a particular market system The outer circle highlights where systems are overshooting our ecological ceiling. The inner circle where they fall short of ensuring an equitable and fair space for humans to thrive. [9]
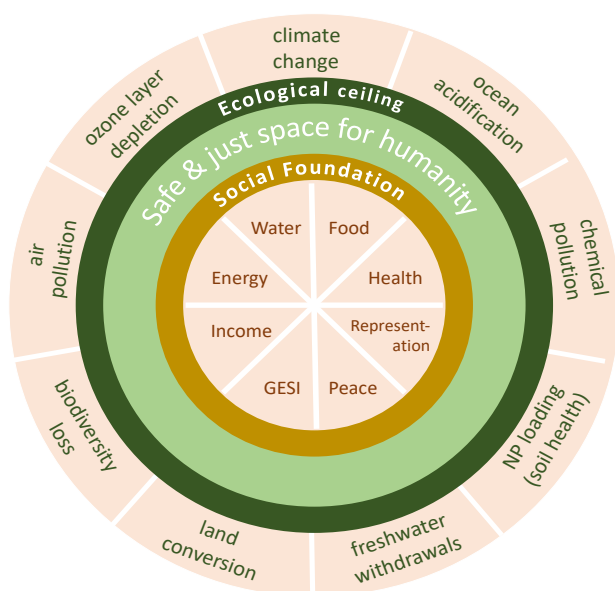

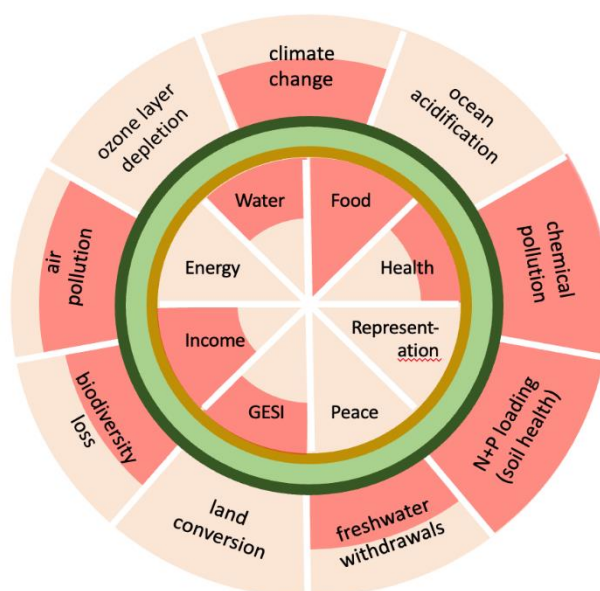Figure 5: The planetary boundaries doughnut (Raworth, 2017)

Figure 4: Planetary boundaries doughnut applied to consider impact of maize.

[9] Adapted from Raworth, K (2017) *Doughnut Economics: seven ways to think like a 21st century economist*, Penguin Random House

Assessing boundary overshoots or shortfalls in specific sectors requires data that may not be readily available (such as sector-disaggregated figures for GHG contributions at national level)[10]. But even without accurate data, constructing rough doughnut diagrams can be a useful team exercise for considering each sector's performance in social and environmental dimension. This can help teams structure their sector selection discussions.

Another tool that may help you visualise market dynamics are Social or Value Network Analyses. These analyses map the nature and strength of relationships between different types of players across market systems. An example is shown in Figure 6.

Network analyses can show the dynamism inherent to market systems, and changes in the strength of relationships may be tracked over time. Quantifying value flows can allow you to home in on weak points in order to promote stronger relationships that support programme objectives. Also to identify and check how well 'pro-green' actors are integrated in the system, and how their integration could be improved.
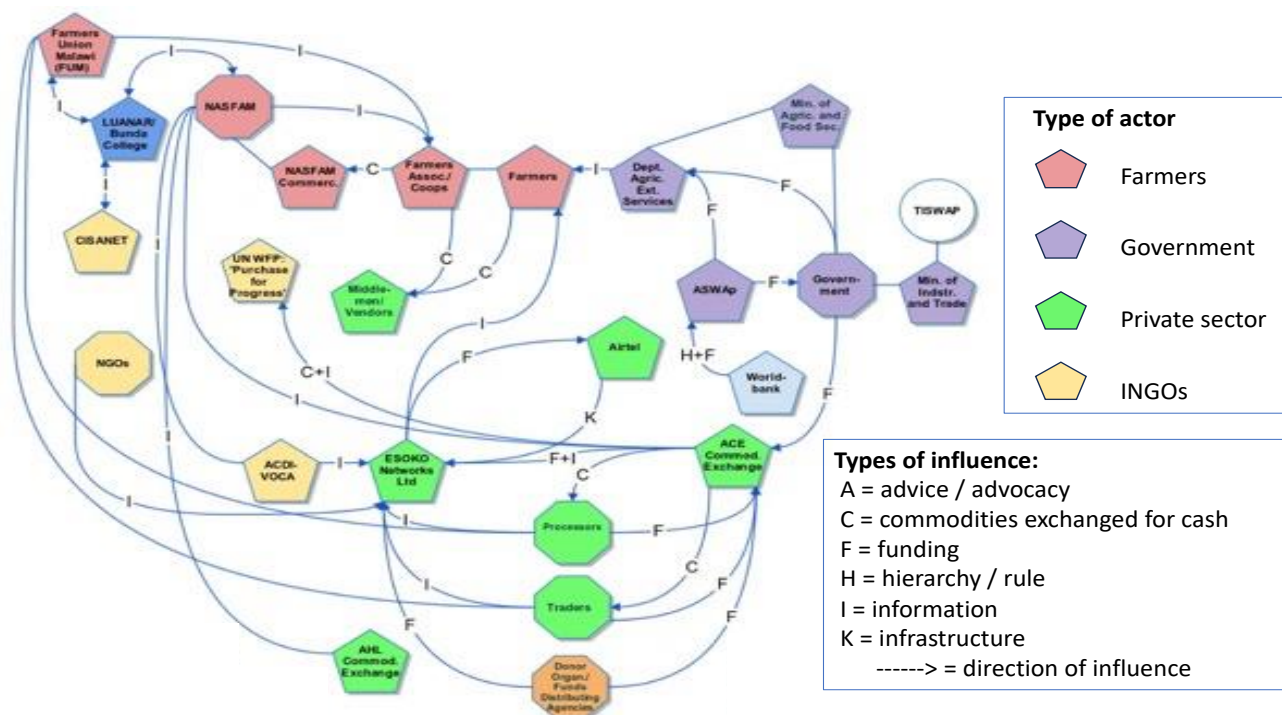
Figure 6: Value Network Analysis example[11]

Determining what drives actors' attitudes and behaviours around 'greening'

As is always the case in MSD programmes, success will be driven by your team's understanding of market players' current and future incentives to change their behaviour in support of programme objectives. The M4P Operational Guide's Will/Skill matrix is a useful way of understanding different players' motivations and capacity in relation to the core transaction you are exploring.

> **Pro tip**: The greening of agricultural sectors usually requires public sector engagement. In many countries, conventional agriculture benefits from fossil fuel or agrochemical subsidies, while public extension services providers may lack access to knowledge and information to support a green transition. Weak enforcement of regulations is another challenge e.g. where porous borders enable smuggling of banned agrochemicals

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[10] You may also find useful information in the "Country Trends" database – which provides an (admittedly slightly outdated) overview of several countries' performance for the ecological and social boundaries.

[11] Source: Dentoni & Krussmann (2015) *Value Network Analysis of Malawian Legume Systems*, FAO

You must ensure that when mapping actors and their motivations to contribute to programme objectives, you have sufficient information to determine how to assess their different levels of current and potential buy-in for greening agriculture. Some of the example incentives and disincentives you could consider are included below:

Table 8: Actor incentives and disincentives for green transition (examples)		
	Incentives	Disincentives
Farmers and other producers	• Reduce the threats caused by resource scarcity and price volatility (e.g. fossil fuels for agricultural machinery operations) • Appetite to modernise through the adoption of technologies (e.g. smart irrigation systems) • Opportunity to access new premium markets (e.g. organic) • Opportunity to diversify income sources (e.g. through multiple avenues for value generation through farm diversification activities)	• Precarious livelihood leading to risk-aversion • No proven viability / clear consumer demand of new production methods • Limited access to support services (input suppliers, extension service, finance institutions…)
Public sector agencies	• **National level:** compliance with NDC commitments, market requirements (e.g. EU Green Deal and carbon border adjustment mechanism), pressure to reduce health hazards • **Subnational level:** need to reduce waste management costs, access to municipal sources of finance, lowering procurement costs for municipal public services	• Short-term political cycles that prevent politicians to support a long-term strategy • Lack of popularity of green transition measures amongst producer constituents • Vested interests of politicians exposed to corporate lobbying
Buyers (including end-consumers and intermediaries)	• Awareness of health hazards associated with agrochemical use • Awareness of agriculture contribution to environment and climate change leading to demand shifts	• Inability to pay a premium for sustainably produced goods (given subsidies on conventional agriculture) • Confusion around number of standards in use

2.3   Getting to the root causes

Why is the system not working for your target group for the environment?

Who does: Implementers

Equipped with a good overview of market dynamics and market player incentives, you are now ready to dig deeper into the root causes of poor or environmentally unsustainable system performance.

Interconnected market systems

The generic MSD doughnut (Figure) provides an overview of how your target group interacts with a key player, and lists functions and rules that affect that core transaction with a focus on green considerations. Your team will need to go through each of the function and rules that underpin that core transaction and assess the degree to which they're critical for the core transaction to function better, and the degree to which addressing them falls within the programme's scope and timeframe. You will then have a prioritised list of functions and rules that deserve a deep-dive.

While avoiding paralysis by analysis, you do want to ensure sufficient time is spent analysing the root causes of market system dysfunctions. Figure 9 illustrates the exploration of two of the prioritised functions seen in Figure 4 as examples (i.e. information about green market opportunities for small-scale producers, and agrochemical use regulations)

These two secondary doughnuts do not feature the original target group (i.e. small-scale maize producers) in the core transaction. Instead they focus on the market actors responsible for the prioritised supporting functions or rules. Developing and analysing these secondary doughnuts (including their rules and functions) helps to reveal the underlying factors that are affecting the main system's performance.
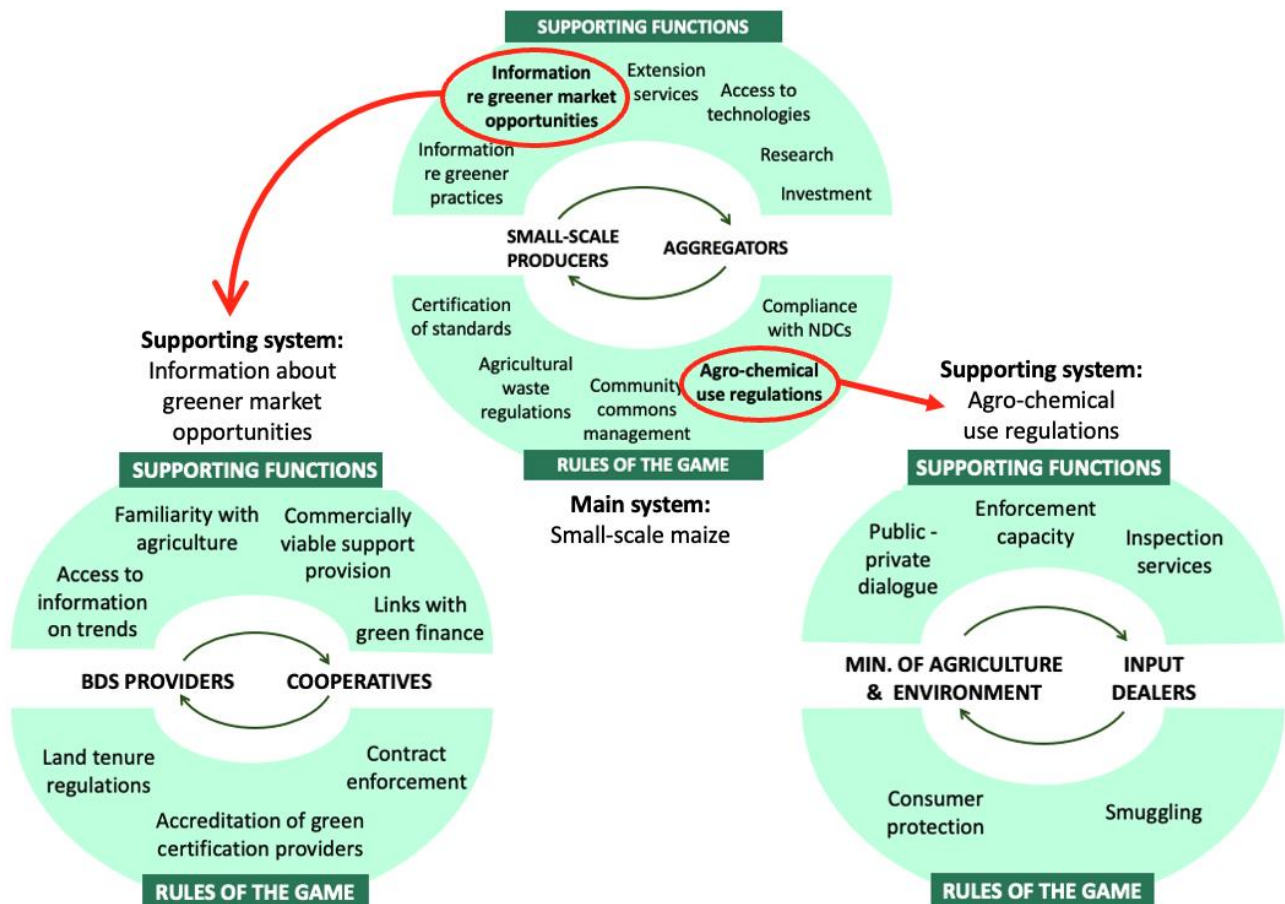
Figure 9: Main and supporting market systems - getting to the root cause

Even if you don't use the doughnut, you will still need to identify the root causes of underperformance to ensure that you move beyond the symptoms of a market dysfunction and tackle the underlying causes. You can use several tools for this (e.g. the the Toyota "Five Whys", root cause analysis, problem trees, causal loop diagrams etc.) – just keep in mind your target group and the degree to which you expected to achieve greener outcomes.

Be explicit about what is unknown

Unless you have access to an in-house multidisciplinary team of experts with in-depth, contextualised knowledge of the key functions, rules and actors associated with greening agriculture in all the sectors you select, a degree of ignorance and uncertainty are inevitable. If you have time, use the secondary system analysis to identify knowledge gaps and ensure your team collects data to fill in the voids. If you don't, outsource this process – and do make sure you're not skipping this step, as the market system analysis set the direction for the remainder of your programme.

2.4   Diagnosis chapter - checklist

- Have you updated your knowledge related to the sectors originally identified, particularly with relation to green aspects?

- Have you mapped the market system with a focus on green functions and rules? And key actors?

- Have you spent sufficient time analysing rules at different levels?

- Have you identified the types of incentives that may motivate key actors to change the way they work?

- Have you identified the root causes of market underperformance, with a focus on how this underperformance affects the environment?

3. Vision

Are you considering economic, social AND environmental sustainability?

Lifecycle stage: Hypothesis formulation & intervention design (implementation)

Section overview and objectives

This section will guide you as you design your interventions. By following these steps, you will better articulate your vision for environmental components of sustainability in the intervention concept notes or nested theories of change that you develop as part of your activities.

3.1 Bridge the gap between now and the future

Who does: Implementers

The market analysis process described in Chapter 2 will have yielded a series of prioritised functions and rules. You will also have mapped the will and skill of the main actors responsible for key functions in your markets. You now need to translate that analysis into ideas for action.

The 'who does / who pays, who will do / who will pay' matrix may be useful in determining the vision for your intervention. You should fill it in as a team and try to draw in the viewpoints and expertise of market players – this will ensure that there is consensus and buy-in from the outset – mainly considering you may be tackling issues that are quite new in the countries where you work. Building on the interconnected doughnut example around green market opportunity information presented in Figure 9, the table below shows how the matrix can be used to support the development of a vision:

Table 9: Who does and will do? Who pays and will pay?				
Functions / rules	Who does	Who pays	Who will do	Who will pay
Links between business services and green finance providers	Donors	Donors	Business service providers	Finance provider association and producer associations
Accreditation of green certification providers [12]	No one	No one	National accreditation agency	Certification bodies who want to be accredited

3.2 Narrow down the focus of your interventions

in line with where you stand on the Greening MSD spectrum

Who does: Implementers

What does this vision mean in the context of the support that your programme may provide to different types of market actors? You should aim to build a portfolio approach that allows the programme to achieve its overall objectives, while ensuring it right-sizes its support to avoid market distortion.

> **Box 3: What is a portfolio approach?**
>
> As MSD programmes are experimental and adaptive, it is important that they set up mechanisms to rigorously explore a variety of tactics aimed at addressing the systemic constraints they identify. This usually requires building a portfolio of interventions involving several types of partners with different risk profiles – as opposed to working with just one partner or undertake just one activity. The goal is to achieve a balance between achieving the targets agreed with the donor and supporting innovation and informed risk-taking.

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[12] For example ISO 14001 or ESG standards on environmental management systems.

You may need to revise the assumptions you've made related to market actors' incentives and discuss with your team what type of cooperation you would like to negotiate, and what is the most tactical way of spending programme funds. The Greening Spectrum may help you in this process.

> **Pro tip**: This may be a good moment to clarify the budget you will allocate to different sectors and the range of support your programme is willing to provide in line with financial management requirements.

3.3 Develop nested theories of change showing links to greening objectives

Who does: Implementers

It may be useful for your team to develop a visual aid showing the logical causal pathway between your activities in one sector, and the links to the overall programme theory of change. These nested TOCs will help ensure you maintain the flexibility needed in MSD programmes (e.g. by adding or phasing out interventions as needed) while maintaining your focus on the objectives set for each programme component.

You should aim to end up with a portfolio of interventions to help you manage risks and achieve your goals (see textbox on "What is a portfolio approach" above). By using your robust monitoring system, you will likely identify opportunities to rectify decisions that may have been taken early on or with insufficient information which may have resulted in unintended negative environmental consequences. You may find yourself in a situation where your programme has a combination of the types of interventions presented in Table 10 below. Having this awareness will help you pivot as needed.

Table 10: From destructive to regenerative practices[13]			
Destructive	Sustainability-aware	Net no harm	Restorative
Practices that damage the environment (incl. inadvertently)	Practices that limit environmental damage – but do not avoid it	Practices that neither harm nor restore the environment.	Practices that restore natural capital so that the environment thrives
Example: Intervention initiated to reap quick wins before conducting an EIA. It ended up promoting stronger links between smallholders and buyers that prompted a switch to cultivating a high water-use crop.	Example: Informed by a CEDRIG exercise, intervention supported input dealers to promote higher quality inputs combined with training on proper application amongst customers.	Example: Intervention targets two sectors: a niche, green one where it is supporting market players to cascade agricultural waste into the textile industry, while simultaneously supporting rice farmers that use conventional practices.	Example: Intervention in the coffee agroforestry sector follows agro-ecological principles The approach is supporting the natural regeneration of coffee plantations. [14]

3.4 Vision chapter - checklist

- Do you have a clear idea of how you expect to achieve your greening objectives?

- What resources do you need to make available to achieve your greening objectives?

- Do you have internal consensus within the team about how each sector will contribute the overall programme objectives?

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[13] Adapted from the Rowe & Rogers (2022) Footprint Evaluation Initiative

[14] Based on a Practical Action case-study from Peru: https://beamexchange.org/resources/1892/

4. Intervention design and programme implementation

Are you being tactical or distortionary in pursuit of greener objectives?

Section overview and objectives

Equipped with a vision for change, you now need to design interventions that will help you bring about your desired change. This section will give you some tips about how you can do that. The section will focus on partner engagement and management tactics, as well as on some elements that will support you in managing interventions.

4.1 Partner engagement: greening the conversation

Who does: Implementers

MSD programmes cannot succeed unless the right set of partners is on board. Your team needs to know not only how to identify, but also how to inspire and negotiate win-win partnerships with the types of partners that will allow you to reach your environmental, inclusion and poverty reduction objectives. It is safe to assume that in some cases, you will be working in a context where green agriculture activities are either niche or non-existent. This not only means that your target groups will lack know-how, it also means there will be critical aspects of a supportive ecosystem that are missing: public support, advisory services, input, technology and finance providers that can support small-scale farmers in the transition. So where do you start?

Identifying the right partners

While you will have a good overview of market players thanks to the market analysis, you will need to ensure your team spends considerable amounts of time (measured in months, not weeks) building networks and relationships with both green and conventional[15] market players – and this cannot be done from a desk. There are countless ways in which you can identify these types of partners, but some of the most common include:

- Recommendations from your colleagues, the Ministry under which your programme is housed, business associations or from your donor. Don't forget the public sector – you may find that specialised environmental agencies or certain municipalities are unexpected door openers.
- Online databases. For example, some grant programmes publish the lists of shortlisted companies or include contact details for advisory firms or association information. Some regional initiatives will list national members, or there may be a public list of accredited input providers.
- Sector experts you may have consulted during the market analysis phase. They could introduce you to their connections or signpost you to potential partners that are in their radar.
- University departments. For example, the Agricultural University may have a small department for Applied Environmental Sciences where staff may be able to guide you in identifying further experts.
- Equipment providers. Machinery and technology providers may be willing to introduce you to some of their clients.
- Open calls launched by the programme. This is not likely to yield the most leads since your desired partners may be unfamiliar with donor-funded programmes, but it remains a valid option.

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[15] For example, you may establish links with green input suppliers who specialise in the distribution of organic fertiliser or compost, and support them to expand their client-base. Or you may support conventional input dealers to introduce more sustainable products and practices that require less agrochemical use through soil testing services, integrated soil or pest management systems, or stocking climate-smart varieties.

Engaging with market players with the goal of identifying potential partners for the programme is a delicate process as you must balance your need to obtain information with the need to manage interlocutor expectations while avoiding an extractive dynamic. Share relevant information regarding opportunities for greening agriculture in the sector where the market player works. Don't miss this opportunity to inspire market players and showcase the potential you see in the sector – backed by quantifiable evidence when possible.

> **Pro tip**: Don't limit your partnership options. As long as partners have ideas that may support the green change you want to see and they show a potential to reach scale, and as long as they meet your procurement requirements[16], you should be open to establishing as many partnerships as your budget will allow in order to test the viability of multiple business models (think about the portfolio approach). As a green agriculture programme, you will be likely working with innovative partners that are taking risks and adapting their solutions to your context or developing completely new solutions.

Further guidance on this process is found in USAID's guide: Private Sector Engagement To Advance Climate Adaptation And Resilience (section III.3).

Co-developing green solutions and negotiating support

While you should already have a rough idea of the type of support you may provide, you now need to negotiate the nature of that support with the partners that you decide to work with and who are willing to work with you.

MSD programmes co-develop individual agreements with each partner. This often involves a lengthy negotiation process, during which you might use a combination of different tactics shown in Figure 10.

One argument for private sector partners to adopt an innovative practice may be that positive environmental outcomes will future-proof[17] their business. Ensure that discussions lead to contracts with clear and manageable milestones linked to payments. Your partner needs to understand that financial support is subject to the achievement of results and should ideally see the partnership as an opportunity to implement an innovation for which it could not get funding elsewhere, and that it considers as being too risky to implement just with its own resources.
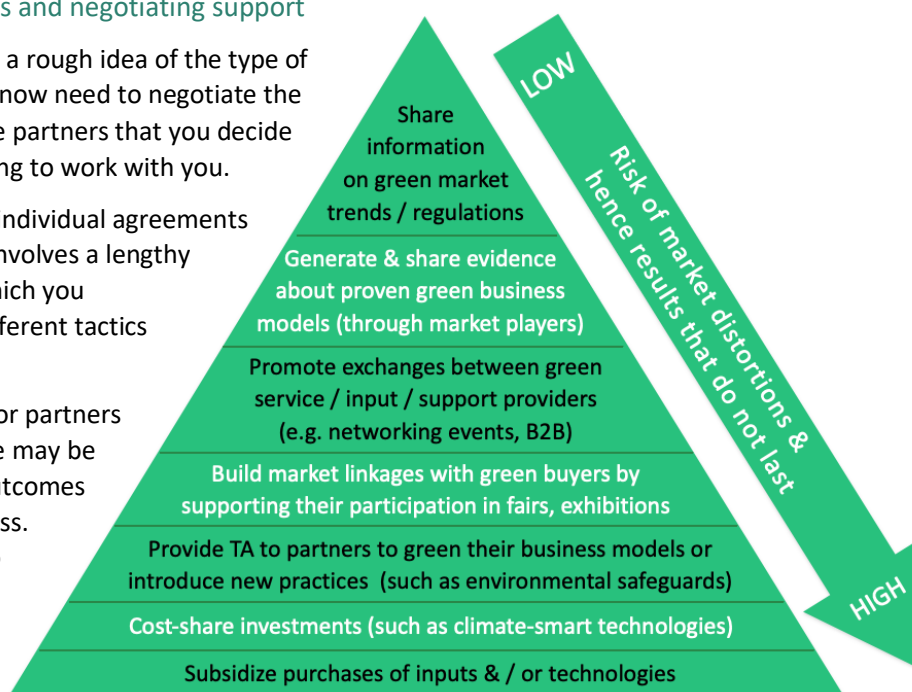
Figure 10: A hierarchy of support modalities.
Adapted from Amir Allana

Content of figure:
LOW — HIGH: Risk of market distortions & hence results that do not last

- Share information on green market trends / regulations
- Generate & share evidence about proven green business models (through market players)
- Promote exchanges between green service / input / support providers (e.g. networking events, B2B)
- Build market linkages with green buyers by supporting their participation in fairs, exhibitions
- Provide TA to partners to green their business models or introduce new practices (such as environmental safeguards)
- Cost-share investments (such as climate-smart technologies)
- Subsidize purchases of inputs & / or technologies

> **Pro tip**: When you engage in discussions with the public sector that may result in a memorandum of understanding, you may find yourself in a situation where your counterparts are hearing about certain green agricultural practices from you for the first

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[16] These typically include financial due diligence, partner risk assessments and reputational checks. An added requirement may be linked to the transparency of the selection process. For example: some donors do not allow implementers to sole source partners, which while being an understandable requirement in terms of procurement transparency, does limit a programme's ability to be agile in partnering with the right players.

[17] Or enabling them to access new markets, counteracting already existing environmental stresses/risks, reducing costs (e.g. through more effective use of inputs).

time. You may be an unintended champion of green agriculture in the country where the programme is working, and you should be mindful that some discussions may shape decision-makers' understanding of key issues.

Below is an example of how you may frame your support to a typical type of agriculture MSD partner - input suppliers - depending on your programme objectives:

| Table 11: Varying partnership objectives across the Greening MSD spectrum		
	A. Conventional input supplier	B. Green input supplier (e.g. organic fertiliser retailer)
Conventional agriculture	Support input dealers to sell agrochemicals from list of EU approved agrochemicals and advise farmers in their correct application	-
Regenerative agriculture	Support input dealers to provide soil testing services to farmers to ensure fertilisers are applied better, promoting integrated soil management practices or stocking new climate resilient seed varieties	Support green input suppliers to scale their products and services and reach more customers by establishing partnerships with other market players (e.g. large organic farmers, associations)

When you engage with any type of partner you should have a good understanding of what you mean by **business model innovation**. Essentially, we are looking at ways for our partners to introduce new approaches that will allow them to generate new types of value to their customers or users. The figure below presents some examples of innovations that you could discuss with different types of partners in the framework of greening agriculture:

Table 12: What do we mean by green business model innovation?	
Innovations around production	**Value cascades and cross-value chain links**
• Support changes related to agricultural input and technique selection (e.g. introduction of climate resilient varieties, rotation systems, no-tilling, mulching) • Explore innovations around product design with equipment providers (e.g. higher degrees of modularisation to allow for easier repair and maintenance) • Introduce production process efficiencies to minimise agricultural waste and natural resource use	• Support stronger linkages across industries and countries (e.g. regional markets for equipment spare parts with warranties) • Promote cross-value chain collaboration (e.g. agricultural waste feeding into textile industry with clear tracking of material flow)
New business models	**Links with the public sector**
• Help equipment providers switch from perceiving buyers as consumers to seeing them as users (e.g. ownership remains with equipment provider and is returned at end of use stage) • Promote the introduction of performance-based models (e.g. tractor leasing) • Support the introduction of products as service models (e.g. selling subscriptions to GIS data services rather than GIS equipment)	• Support market players to lobby to shift the tax burden away from labour / income and towards non-renewable resources • Promote green procurement practices among subnational entities (e.g. procure food for schools from 0 km farms) • Support governments to lobby internationally for better access to finance for green agricultural development (taking into account excluded voices)

Box 4 Triple-layered business model canvas [18]

A useful tool when discussing support with either public or private-sector actors. Building on the economic business model canvas it adds a social and an environmental layer. The facilitates structured conversations to make the case for a better mainstreaming of environmental considerations throughout their operations.
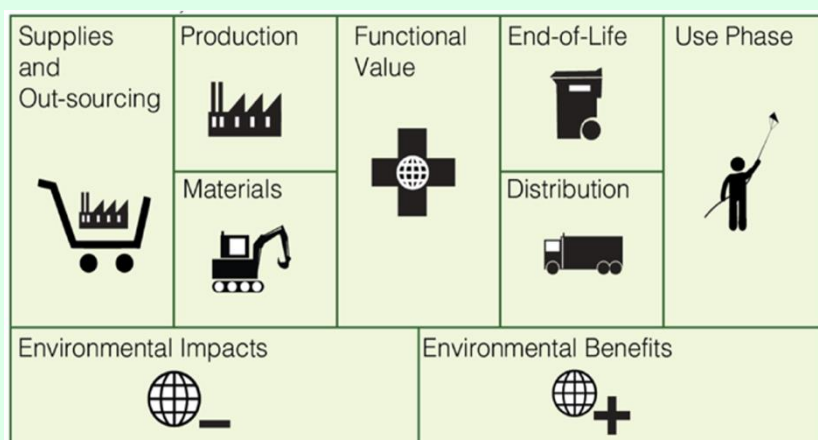
Supplies and outsourcing
- What are the key components of your product or service?
- Where do they come from (most significant suppliers or service providers)?
- How environmentally aware are suppliers and providers?

Production
- What activities are critical to ensure the functional value of your product or service?
- Which production activities present the worst cost-efficiency / environmental harm ratio?

Materials
- What materials are critical for the functional value of your product?
- What materials are necessary for your distribution?
- Where do they come from?

Functional value of the product or service
- What is the environmental value that your product or service delivers?
- Which environmental needs does it address?

End of life
- What happens when your product reaches its end of use cycle?
- What networks can you build to ensure that it loses as little value as possible?

Distribution
- How does your product or service reach its users?
- Are distribution channels inclusive?
- How could you improve access to users while reducing the product's environmental footprint?

Use Phase
- How is your product or service being used?
- What are environmental implications of its use?
- For whom is the product or service creating value (most important customers)?

Environmental impacts
- Where in your supply chain can you reduce environmental impacts without harming your business?
- What raw resources are most environmentally damaging?
- What processing activities generate the most negative environmental impacts?

Environmental benefits
- For what environmental improvements are your customers willing to pay?
- What opportunities does your product present to contribute to natural capital regeneration?

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[18] Source: Joyce & Paquin (2016) *The triple layered business model canvas*: *a tool to design more sustainable business models.* Journal of Cleaner Production 135:1474

4.2   Managing a portfolio of interventions adaptively

Who does: Implementers

By now you have a good idea of what you want to achieve in each sector, the types of partners you want to work with to pilot that vision, and the type of support you will provide. You now need to develop results chains (or any other tool that serves a similar function) to chart the logical steps that will contribute to programme results around your envisioned systemic change. Results chains are key to ensure that you are managing a portfolio of interventions and partnerships adaptively – they allow you to experiment with rigour. They should be developed alongside a management tool (for example an intervention guide) which helps you track progress through intervention-specific indicators and results projections.

> **Pro tip**: These tools are only as good as the way in which you use them, so remember to schedule regular reviews and document any changes you make in response to market dynamics – and invite environmental experts to these reviews if you feel you could benefit from their guidance and support. For more guidance consult the DCED Standard for Results Measurement.

4.3   Aiming for scale in greener agriculture

Who does: Implementers

Alongside ensuring results, impact at scale is a crucial aspiration of the MSD approach. Programmes should be aiming to generate lasting benefits for large populations that extend beyond the direct users or beneficiaries of your partners' products or services. However, you may need to rethink what successful scale looks like in the framework of greening agriculture programmes.

Greening systems requires an understanding of the way in which a sector interacts with the natural environment in which it is embedded. The traditional metrics of success (e.g. % increase in yield or farmer incomes) may limit our ability to see the bigger picture, and where production systems fit within the broader ecosystem. Success may need to be defined in terms of optimisation, rather than maximisation: for example, you could ask yourself how much yield / ha would allow your target group to thrive within the social and ecological boundaries depicted in **Error! Reference source not found.**– as opposed to strive to achieve ever-increasing productivity. This is a radical shift. But programmes that are at the right-hand end of the Greening MSD spectrum are likely to measure success along these lines.

Accordingly, rather than focusing on introducing efficiencies for a few crops and strengthening links with top of the supply chain buyers, you may choose to support farmers to diversify their sources of income and increase their resilience. This may sometimes mean that you support localised solutions that promote closer-loop economies (e.g. solutions whereby farmers supply a local textile factory with agricultural waste or explore local supply chains). These are not always scalable in the commonly accepted MSD understanding of the concept, as they may be difficult to replicate in other types of conditions. Regardless, programmes may still learn and promote similar solutions in other regions or with other types of partners.

Ultimately, this means that you may switch from a logic where you understand success as meaning you've contributed to economies of scale (measured in increased efficiency in the production of one product), to where you understand success as meaning you've contributed to economies of scope (measured in the promotion of multiple avenues for value generation). This may lead you to the promotion of practices that will take longer to root and where the risk of lack of uptake is lower, such as agroforestry or intercropping with an emphasis on soil management.

Regardless of how you end up defining your vision for scale, you should ensure that it is clearly articulated for each intervention. A useful tool to achieve this is the **Adopt, Adapt, Expand, Respond (AAER) framework**, shown here in modified form to incorporate the advice above.
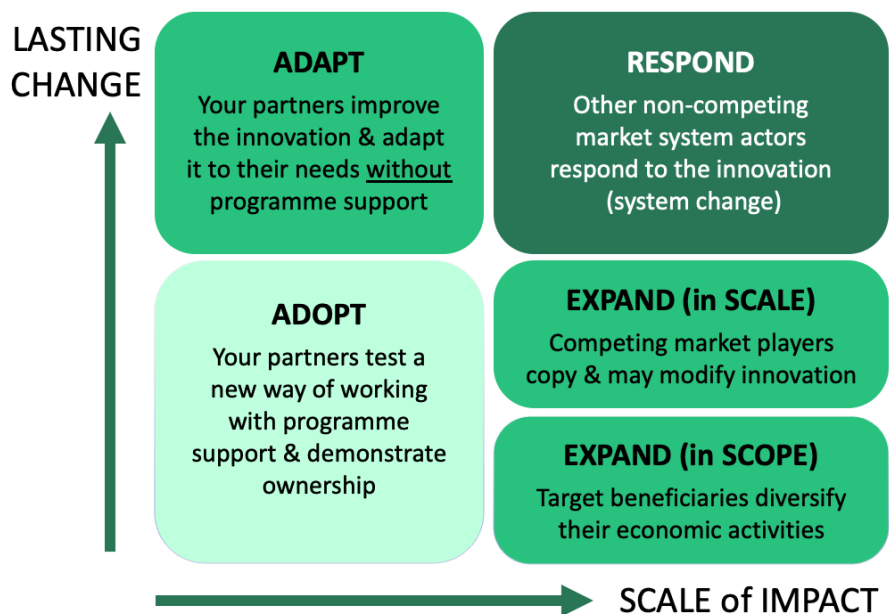
Figure 10: A version of the AAER framework modified for Greening MSD

The example below shows an example of this AAER variation used in practice
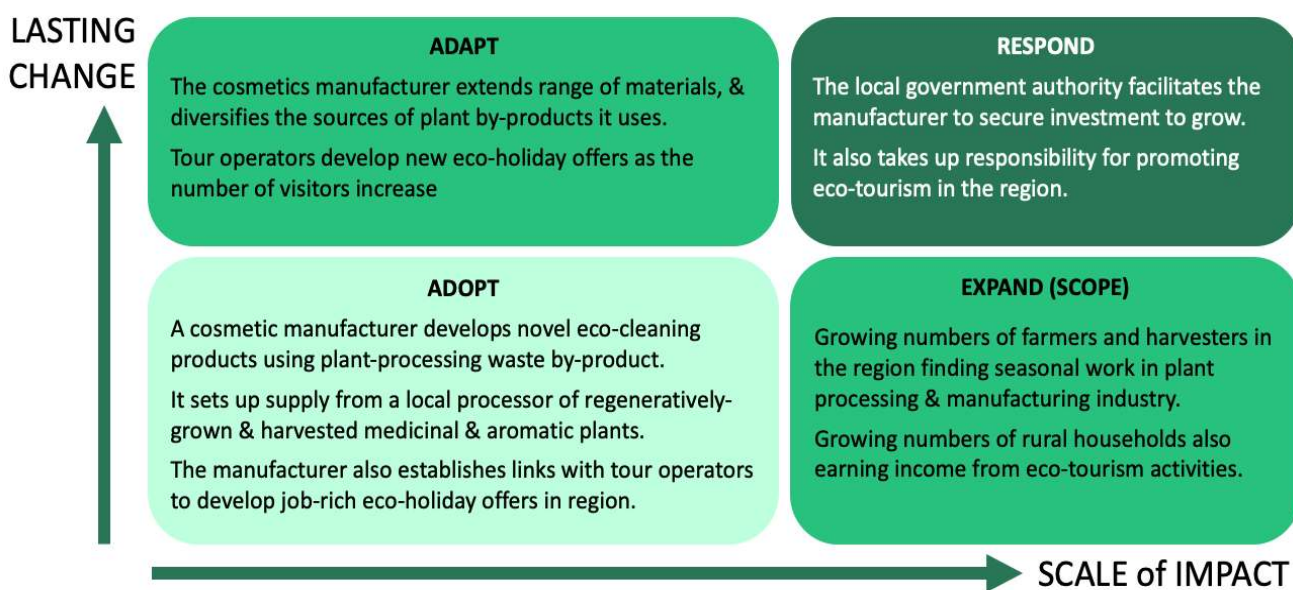
Figure 11: Example of modified AAER framework

4.4   Intervention design stage - checklist

- Are you clear about your programme's value proposition to different types of market players?

- Do you have clear criteria in place to identify and engage with private sector partners?

- Is your team clear about the types of support that the programme can offer and are they trained in negotiation?

- Do you have results chains and intervention guides for each intervention, and is there a calendar for regular reviews of intervention guides?

- Have you articulated your vision for scale for each intervention?

5.   Monitoring, Evaluation and Learning

Are you basing decisions on evidence, and are you fostering a culture of knowledge?

Lifecycle stage: Implementation, learning

Section overview and objectives

The MSD approach allows practitioners to experiment and be flexible – both essential for tackling the pressing and complex challenges of our time. While systemic change is notoriously hard to bring about and even harder to attribute, we must be accountable to our donors. MEL is an integral driver of MSD programme success. This section will help you identify the types of indicators you could consider tracking for the uptake of green agriculture innovations, and how to use them in the framework of a culture of learning and knowledge that drives your programme's positioning within the market. Typical outputs at this stage will include intervention guides, knowledge products and reports to your donor.

5.1   Monitoring to inform management decisions

Who does: Implementers

MEL needs to be integrated into all team members' roles. It is not a function that can be outsourced to the MEL team – as otherwise the technical team may lose sight of essential information that can help them steer interventions. Team members must understand MEL as an important element of their work and be prepared to continuously capture and document relevant information from partners, beneficiaries, and broader market trends. This is particularly essential when programmes are trying to disrupt conventional agriculture market systems, as adapting fast and leveraging the right information can support broader rates of uptake.

5.2   Fill in and use intervention guides

Who does: Implementers, evaluators

To inform data capture, your team will likely use intervention guides or a similar tools that relate qualitative and quantitative indicators to different levels of your results chain. The use of these tools for adaptive management in agricultural programmes is well documented. When using them in the context of the Greening Spectrum, you may need to ensure you allocate sufficient time to capture change in technical indicators (see section below) or that you involve specialists from environmental areas during the review process.

> **Pro tip**: Besides the obligation of having to measure high-level impact indicators that will have been agreed with your donor, you should identify relevant green indicators that will allow you to track progress for each intervention. You will also determine when you expect progress to happen alongside those indicators by drawing up projections. Do this as a team and ensure you use the intervention guides – by reviewing them at regular intervals (if needed, invite environmental experts to these reviews) and updating them with information you get through continuous monitoring efforts.

Setting and measuring environmental sustainability indicators

There is no one-size fits all when it comes to identifying indicators that may be relevant to your programme or context. Below is a long list of potential indicators that you may find useful as you discuss relevant ones for your programme – but you will always need to determine which indicators are relevant to your specific programme and context, and factor in the possibilities you have to measure them in a meaningful way.

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Systemic change indicators

- Number of market actors that sell in markets that pay a premium for environmental sustainability since beginning of your intervention
- Per cent variation in turnover associated with income streams generated from environmental activities attributable to programme support
- Number of institutions with improved capacity to assess or address environmental degradation / climate change
- Number and type of innovative mechanisms introduced (e.g. PES, reorientation of subsidies)
- Per cent of women who report increased agency over natural resources
- Proportion of households adopting improved agricultural practices
- Proportion of respondents who observe an increase in soil fertility
- Proportion of households who observe that soil erosion has reduced

Outcome and impact indicators

- Per cent of producers feeling more confident in the capacity of their farming system to cope with climate change and natural disasters since programme start
- Rate of environmental and climate data generation and sharing
- Number of market actors who report additional income sources
- # ha of land under restoration/ # of hectares protected
- Proportion of respondents that observe that tree cover is maintained or increasing in their community
- Per cent target area with sustainable crop, livestock or NRM practices
- Per cent respondents who observe health of coastal and marine resources in their community is improving
- Per cent respondents who observe an increase in water quality/availability
- Proportion of households that have effective options for waste treatment and/or disposal
- Changes in GHG
- Changes in soil health
- Changes in biodiversity index
- Per cent of households who report feeling able to withstand natural shocks and bounce back within six months

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Right-size your measurement system

Depending on how familiar you are with MEL, the above list may seem daunting. If that is the case, do not worry. The types of indicators you choose should be fitted to your programme's resources and capacity to track them, to what your donor expects from you, and to where you stand on the Greening Spectrum. Choose the indicators that will allow you to hold your partners and yourself accountable as you embark on your greening agriculture journey, and budget for the possibility of outsourcing baseline and regular data collection by technical specialists.

<div style="border:1px solid green; padding:10px; text-align:center;">

Pro tip: For most programmes, tracking GHG emissions may not only be unfeasible, given human and financial resources, it may also be of very limited use in decision-making. A much more reasonable indicator to include may be the type of new business models that your partners adopt, as this may help you understand how the work you're doing is promoting systems change.

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5.3   Support the generation of actionable green knowledge

Who does: Implementers

We MSD practitioners sometimes forget about the "L" in "MEL". The insights we gain from using our MEL systems should contribute to knowledge generation in the countries where we work – as well as to

achieving scale by promoting a dissemination effect (see Section 4 for more details on scale). This does not mean that your programme should displace entities whose function it is to generate and disseminate knowledge related to greening agriculture. Instead, it means that insights should be shared with different types of audiences, and that collaborations with market players, to both generate and use knowledge, should be prioritised whenever possible.

> **Pro tip**: Remember that MSD programmes that promote green agriculture are likely to be trailblazers in some of the countries where they work. Knowledge is a powerful tool to promote informed discussions that could lead to favourable policy-making.

5.4   MEL stage - checklist

- Do you have a clear definition and feasible methodology for informing the indicators you selected?

- Do your teams' job descriptions reflect shared responsibilities around MEL?

- Do you have a calendar of intervention guide revisions?

- Are you measuring indicators beyond what you have to report to your donor?

- Have you allocated sufficient resources to your MEL system?

- Do you have a learning agenda or a knowledge generation strategy in place?

6.   Management

Can your team deliver on greener programme objectives?

Lifecycle stage: Implementation

Section overview and objectives

To deliver innovative, rigorous, and flexible programmes, implementers need to ensure that staff (and consortium partners) have the right skills, attitudes and aptitudes – and that there is a team culture that nurtures knowledge and rewards informed risk-taking. There's ample research showcasing what [successful teams look like](#) as they follow adaptive management principles. This section will explore what elements need to be in place for green agricultural programmes to deliver impact. Typical documents that support this section are internal approval or funding procedures, clear quality assurance systems, and the allocation of sufficient resources to train and support staff.

6.1   Hiring and nurturing the right skillset to deliver greener outcomes

Who does: Implementers

MSD programmes tend to favour hiring dynamic, detail-oriented, and open-minded people over highly specialised technical staff. This is because we need team members to feel comfortable doing a variety of tasks (from data collection to partnership engagement) who are also open to pivoting in response to market changes. However, depending on where you're situated on the Greening Spectrum, you may need to ensure that you bring hard skills to your team. It is unlikely that a team wholly composed of dynamic generalists will be able to engage and inspire public and private sector partners on topics related to regenerative agriculture with the same confidence as a more specialised profile.

You may also invest in your team members and ensure that you address technical knowledge gaps through training and coaching. You should aim to staff your team with a combination of technical specialists and generalists – and to address remaining gaps by outsourcing highly technical tasks either to consultants or to co-facilitators.

The [MSD Competency Framework](#) is a useful resource that may guide you in staffing your team.

6.2   Systems and processes

Who does: Implementers

Green interventions in your portfolio are likely to engage partners who are not used to working on donor-funded programmes. You will be working in areas where research is advancing fast, and where results will take longer to materialise than if you were just focusing on conventional agriculture.

> **Pro tip**: Ensure that you minimise difficulties for your team by making any necessary adjustments to your internal management systems and processes that are necessary – whether they relate to procurement (e.g. to allow for more flexible partnership arrangements), to financial management (e.g. revising minimum and maximum thresholds or keeping financial reporting requirements to the bare acceptable minimum) or to internal quality assurance. If the whole team is new to the topic, you may need to assume that the first year will be mostly dedicated to building and strengthening networks with green agriculture market players – and you may need to adjust projections accordingly.

6.3   Managing donor and country stakeholder expectations

Who does: Implementers, donors

As donors increasingly seek greener outcomes alongside poverty reduction outcomes in their green agriculture development programmes, you may find that they do not always allow for the necessary trade-offs explored in Section 1 of this guide. Your role as an implementer will be to clearly communicate

progress and manage expectations so that you and your donor can jointly contribute to greening the agricultural sector in the country where your programme takes place. Both sides should invest time and effort in building a collaborative, transparent relationship based on mutual trust and the acknowledgment of challenges and difficulties.

You may find yourself in a similar situation when it comes to national counterparts, such as the line Ministry under which your programme is housed: they may be used to seeing quick results from direct delivery programmes, or push for a rebalancing of the poverty – environmental objectives. It is important to include them in your programme as early as possible, and as you refine your sectors, and think about the vision for each. This will ensure there is buy-in from the outset and that their views and expectations are properly incorporated into your work.

6.4   Management stage - checklist

- Do the job descriptions you use to hire talent reflect the variety of profiles you need in your team?

- Do you have mechanisms in place that will allow you to outsource expertise?

- Have you revised your systems and processes to account for the uncertainty associated with working in a green sector?

- Have you invested in nurturing a relationship with your donor and with national counterparts?

Glossary of terms

All the terms outlined below are shared in the context of their implications for agricultural development.

The definitions are not scientific, and the list below is neither exhaustive nor authoritative:
they serve as a general introduction for MSD practitioners to meaning of these terms in the context of agricultural programming. In cases where your donor or the country where you operate have different definitions, you should follow those. A useful additional resource to complement this is the UNDP's "Climate Dictionary" published in 2023 from which some of the below definitions are adapted.

Glossary of definitions related to agriculture	
Climate	
Adaptation	Measures that market actors adopt to deal with changing climate patterns and climate-related hazards. These may include shifting production cycles, relocation of production sites, or improving water or soil management.
Climate change	The long-term alteration of our planet's weather patterns primarily due to the overexploitation of planetary resources by humans. Climate change leads to unpredictable climate conditions and extreme weather events that particularly affect agricultural systems.
Climate risks	Potential hazards that affect agricultural communities that arise from changes in climate conditions because of climate change.
Climate finance	Financial resources allocated to support climate adaptation and mitigation efforts.
Mitigation	Measures that market actors adopt to minimise the contribution of agriculture to factors that exacerbate climate change, such as adopting practices that reduce GHG emissions or that protect carbon sinks. These may include adopting conservation or regenerative agriculture practices, using renewable energy to power processing activities or adopting agroecological approaches.
National Adaptation Plans (NAPs)	Plans developed by countries that outline their strategies to enhance climate change adaptation and resilience. They often include specific sections related to agriculture – for example in terms of vulnerability assessments that look at agriculture specifically.
Nationally Determined Contributions (NDCs)	Compulsory document that countries that are signatory to the Paris Agreement need to submit outlining climate-related actions and commitments to mitigate GHG emissions and adapt to climate change. They often include agriculture-specific commitments.
Paris Agreement	International treaty to combat climate change adopted in 2015 under the United Nations Framework Convention on Climate Change (UNFCCC).
Resilience	Ability of agricultural market systems to allocate resources, draw on system-level resources (such as social safety nets, social capital, the financial system, or government assistance), and innovate in order to solve problems in the face of climate-related shocks and stresses (adapted from Market Systems Resilience- a framework for measurement).

Glossary of definitions related to agriculture

Vulnerability	The degree to which ecosystems and agricultural socioeconomic systems are susceptible to climate change, assessed in terms of the exposure to climate-related impacts.
Carbon	
Carbon capture and storage (CCS)	Practices aiming to capture, transport and store CO_2 emissions underground. In agriculture, these could relate to methane capture, carbon sequestration in soils (through no-till agriculture, increasing coverage or agroforestry).
Carbon credits	Tradable certificates generated by agricultural activities that sequester CO_2 from the atmosphere or reduce GHG emissions. These credits represent a quantifiable reduction or removal of carbon emissions or their equivalent, and they can be used by individuals, businesses, or governments to offset their own emissions.
Carbon emissions (CO2)	These relate to the release of CO_2 into the earth's atmosphere. Some of the main ways in which agriculture contributes to carbon emissions is through the burning of fossil fuels and deforestation.
Greenhouse gas emissions (GHG)	Greenhouse gases have the capacity to trap heat in our atmosphere. Emissions of these gases generated by human activity intensifies the natural greenhouse effect, thereby contributing to global warming and climate change. Agricultural activities emit carbon dioxide (CO_2), methane and nitrous oxide. The agriculture sector is a recognised contributor to GHG emissions through practices such as fossil fuel use from machinery, deforestation and land use changes that remove forests' carbon sink functions; livestock keeping; or the abuse of synthetic fertilisers, manure, and poor soil management practices.
Carbon markets	These are the exchange fora where carbon credits or offsets are bought and sold, allowing entities to invest in projects that reduce GHG emissions or sequester CO_2 from the atmosphere to offset their own emissions. In agriculture, carbon markets provide opportunities for market actors to earn revenue by implementing carbon offset projects.
Carbon neutrality	This term is used interchangeably with net-zero carbon emissions. It refers to the practices necessary to achieve balance between GHG emissions and the amount of GHG removed from the atmosphere through reductions or offsetting. In agriculture, achieving carbon neutrality requires strategies such as methane reduction, deforestation prevention measures, reforestation and afforestation, or integrated soil management.
Carbon sink	These are natural or human-made systems within the agricultural landscape that have the capacity to absorb and store CO_2 from the atmosphere. Elements that may serve as carbon sinks include soils, forests, trees, wetlands, mangroves, grasslands, and pastures – or in the realm of aquaculture, aquatic vegetation or sediments.
Renewable energy	This refers to the use of clean and sustainable sources of energy to power various agricultural operations and processes – such as solar, bioenergy, wind or hydropower energy fuelled irrigation systems or greenhouses.
Resource efficiency	The concept refers to the sustainable and effective use of resources, such as land, water, energy, nutrients, and inputs, to maximise agricultural productivity (e.g. output per hectare) while minimising waste, negative environmental impacts, and natural resource depletion.

Glossary of definitions related to agriculture

Natural resource management

Natural capital	This refers to the stock of natural resources and ecosystems on our planet including air, water, soil, minerals, forests, oceans, and biodiversity. This stock delivers ecosystems services upon which humankind depends. In food systems, these include pollination or pest management by multiple species.
Nature-based solutions	These are strategies that leverage the power of natural functions and processes to address environmental, societal, and economic challenges. In agriculture, these include agroforestry, cover cropping, crop rotation, integrated pest management, polyculture, or sustainable livestock grazing.
Payment for ecosystem services (PES)	Mechanisms that provide financial incentives to agricultural market actors to sustainably manage the ecosystems in which they operate and on which they rely. Examples of PES in agriculture include carbon sequestration, water quality improvement, soil or biodiversity conservation.
REDD+	Reducing emissions from deforestation and forest degradation in developing countries is a global voluntary climate change mitigation framework aimed at incentivising low- and middle income countries to reduce GHG from deforestation and forest degradation. This is done through the promotion of measures that reduce deforestation, promote biodiversity conservation and sustainable forest management. After implementing the agreed REDD+ activities, developing countries can receive results-based payments for fully measured, reported and verified emission reductions. Many of the policies and strategies promote working with local communities.
Soil erosion	This refers to the process by which the top layer of soil (topsoil) is removed due to natural factors such as water, or human activities, such as fertiliser abuse. This erosion of topsoil has detrimental effects on agricultural productivity and the environment and is likely to generate dependency on ever-increasing amounts of agrochemical use. We are constantly updating our understanding of the importance of healthy soils – not only do they act as carbon sinks, but they are also key for biodiversity and ecosystem health.

Agricultural practices

Agroecology / regenerative agriculture	The concepts encompass approaches that integrate ecological principles into farming systems to promote sustainable and resilient food production while restoring or enhancing the health of ecosystems.
Agroforestry	Sustainable land use system that combines the cultivation of trees or shrubs with crops or livestock in a mutually beneficial manner.
Climate-smart agriculture	Approach to agriculture that aims to address the challenges posed by climate change while promoting sustainable food production, increased adaptation to climate change, and climate change mitigation through for example the reduction of GHG and the protection of carbon sinks.
Conservation agriculture	Sustainable farming approach that supports minimal soil disturbance, permanent soil cover, crop rotation and diversification as elements that support the conservation of natural resources.
Conventional agriculture	The dominant and widely practiced approach to farming that relies on modern technologies, standardised methods, and the use of synthetic inputs such as chemical pesticides and fertilisers.

Glossary of definitions related to agriculture	
Disaster Risk Reduction (DRR)	Processes introduced to minimise the impact of natural or human-brought disasters in agricultural communities. DRR promotes the establishment of early warning systems and promotes natural resource management and climate change adaptation practices in agriculture.
Intensive / extensive agriculture	Intensive agriculture refers to practices that have high input intensity and aim to achieve high productivity in reduced areas (such as greenhouse horticulture or commercial dairy). Extensive agriculture refers to less inputs per unit or land in larger land extensions – for example pastoralism in open rangeland.
Organic agriculture	Agricultural production system that places a strong emphasis on sustainability, environmental protection, and the avoidance of agrochemicals and genetically modified organisms.
Precision agriculture	Also referred to as precision farming, it constitutes an advanced approach to farming that uses technology and data-driven methods to optimise various aspects of agricultural production through improved resource use to increase farming productivity.
Sustainable agriculture	Approach to food production that seeks a balance between human needs for agricultural products while minimising negative impacts on the environment.
Transition	
Green transition	A shift towards environmentally sustainable practices in the agricultural sector to counter the negative impacts of conventional farming practices. The goal of a green transition in agriculture is to reduce the negative impacts of farming on the environment while ensuring food security and economic sustainability.
Just transition	In general, a just transition refers to a shift towards the decarbonisation of the economy in a way that considers the needs of socially excluded and vulnerable groups. In agriculture, it encompasses dimensions linked to an equitable shift from current exploitative practices to environmentally sustainable and socially responsible patterns.
Transition risks	A green transition in agriculture comes with risks for market actors and communities – including initial upfront costs in adequate technology or infrastructure; the lack of proven markets; or resource constraints linked to labour costs.

Recommended further reading

A curated overview of resources you may use to advance your understanding. It is by no means exhaustive – and does not exclusively focus on agriculture.

Lessons from programmes and projects

ILO (2020) Market Systems Development and a Just Transition: Learnings from an ILO experience in Tanzania

Kuria J., Juma G., and Mwakumanya A.M. / MEDA (2022) The Use of Environmental Action Plans (EAPs) in achieving Environmental Sustainability for SMEs

World Bank (2021) Managing Pesticides for Greener Growth in Lao PDR Policy Note

Glossaries and navigators

DCED (2022) Green PSD Navigator–Overview of Green Growth Approaches for Private Sector Development

GIZ (2021) Resource efficiency and cleaner production (RECP) Navigator

UNDP (2023) The Climate Dictionary: Speak climate fluently

Guidelines and tools

DCED (2016) Private Sector Adaptation to Climate Change and Development Agency Support

FAO (2022) Ex-Ante Carbon-balance Tool for value chains

GIZ (2018) ValueLinks 2.0 - Manual on Sustainable Value Chain Development

Helvetas (2018) Guideline - Assessing Climate Risks and Vulnerabilities in Market Systems

ILO (2021) Sector Selection and Rapid Market Assessment for Addressing Environmental Sustainability in Value Chain Development

ILO (2021) Environmental Sustainability in Market Systems and Value Chain Development for Decent Work A short guide for analysis and intervention design

Maor, D., Gallagher, E. and Dugard, J. / USAID (2023) Private Sector Engagement to Advance Climate Adaptation and Resilience: A Guide to Building Effective Partnerships

OECD (2022). Development Finance for Gender Responsive Climate Action

USAID (2020) A Sourcebook for Community-Based Forestry Enterprise Programming Evidence-based best practice and tools for design and implementation

Position and research papers

ActionAid (2019) Principles for a Just Transition in Agriculture

Kuhl, L (2018). Potential contributions of market-systems development initiatives for building climate resilience

OECD (2021). The Inequalities Environment Nexus: Towards A People-Centred Green Transition

Monitoring, Evaluation and Learning

USAID (2020) Global Climate Change: Standard Indicator Summary Sheet

USAID (2018) Market Systems Resilience: A Framework For Measurement