



## INVESTMENTS IN THE AGRICULTURAL VALUE CHAIN EXPANDING THE SCOPE OF ENVIRONMENT AND SOCIAL DUE DILIGENCE

Improving risk management, creating value  
and achieving broader development outcomes



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The soft copy version of this report includes interactive hyperlinks which are not available in this hard copy. You can access the online version via the downloads and references page of the CDC ESG Toolkit  
<http://toolkit.cdcgroup.com/downloads-and-reference-materials>

## FOREWORD

It is widely recognised that primary agriculture and its associated upstream and downstream industries (the agribusiness value chain) create significant employment and thereby support economic growth across the emerging markets. In addition, the sector underpins both domestic and international food security.

While there is growing interest from investors in the sector, there is still a significant investment deficit to address. It is also clear that a range of environmental and social (E&S) risks and impacts are specifically associated with primary production, including land acquisition and impacts on local communities, biodiversity and ecosystem services and labour and employment practices. Primary producers who do not manage these issues responsibly create material risks to themselves and to the value chains that support their businesses.

There has been limited recognition to date of the role that agribusiness value chain actors, such as input providers, traders and processors, can play in enabling more sustainable primary production and even smaller engagement by their investors to leverage such effects.

**The purpose of this report is to provide guidance to investors for clearer, more consistent and practical investor engagement.**

The objectives are to better manage E&S risks, to create value for the investee company and to enhance the development outcomes of primary production via value chain actors. This is a critical role for development finance institutions (DFIs) in particular but we believe there is large potential for these measures to be adopted more widely.

**Mark Eckstein**  
CDC

**Martin Geiger**  
DEG

**Birgitte Bang Nielsen**  
IFU

**Tim Lund**  
Norfund

**Philip Walker**  
Obviam, on behalf of SIFEM

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- **Partner Reinsurance:** Ariane Siegrist and Michael Hirsbrunner, Underwriters Agriculture
- **Plan International Switzerland:** Isabel Sommer, Programme Manager
- **PROPARCO:** Odile Conchou, Head of Environmental, Social, Governance and Impact Division
- **University of Cambridge:** Andrew Voysey, Director of Finance Sector Platforms, CISL
- **WWF US:** Joshua Levin, Senior Program Officer



## INTRODUCTION

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### 1 Introduction

- 2 How to use this document
- 3 E&S due diligence guidance for upstream and downstream actors
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- 5 Good practice materials

## EXTENDING THE DUE DILIGENCE SCOPE TO THE VALUE CHAIN

Investors are increasingly confident in identifying the environmental and social (E&S) risks and opportunities directly linked to the agribusiness companies in which they invest and there is a growing body of E&S guidance covering a broad variety of actors in the agricultural value chain. To date, the focus of attention has been on primary producers, which have the most significant E&S impact and offer potential opportunities. These risks and opportunities are fairly well understood and multiple standards and initiatives aim to improve their E&S practices (see Section 5).

However, there is less clarity on the role that value chain actors – upstream or downstream from primary production – can play in enabling more sustainable production. There is also less guidance for agricultural value chain investors. That is the rationale for this report.

### THE REPORT AIMS TO:

- Provide information on how investors can expand the scope of due diligence processes beyond current practices and guidance to further improve E&S risk management and drive value through supply chains.
- Provide investors with initial, practical information about the links between upstream and downstream actors, primary producers and the communities in which they operate.
- Take a step towards a more integrated approach to E&S risk management, value creation and development – perspectives that today are often dealt with as separate topics.

**The report is aimed primarily at development finance institutions (DFIs) and other 'responsible investors' who want to understand and manage E&S issues more proactively in their agribusiness investments.**

## THE ROLE OF INVESTORS

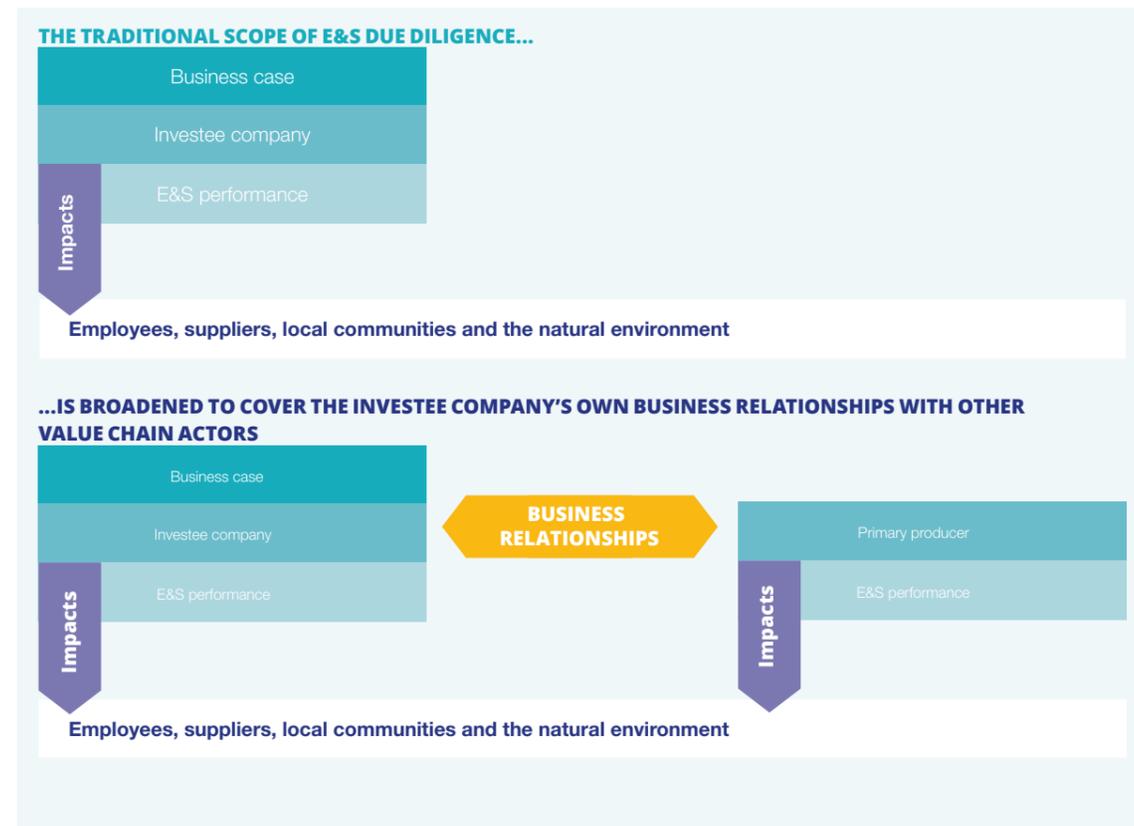
Investment in agribusiness is growing, albeit from a low base and some governments in emerging markets are placing significant emphasis on increasing investment in the agribusiness sector. Despite these trends, direct investment in primary production remains a niche market that is struggling to attract the necessary levels of capital.

Investments in the agribusiness value chain, however, are more attractive owing to reduced investment risks and potential scale benefits and this sector of the market looks set to grow. It is therefore important that investors be well informed not only of the direct E&S issues associated with their investments, but also of the indirect E&S risks and effects that their investments could have on the value chain.

By focusing on the E&S effects an investee company can have on other value chain actors, particularly on primary producers, through its own business relationships with them, this document aims to promote more sustainable outcomes for investors, value chain actors and primary producers.

## UNDERSTANDING THE POTENTIAL E&S IMPACTS OF UPSTREAM AND DOWNSTREAM ACTORS ON OTHER VALUE CHAIN ACTORS

Realising this expanded view of due diligence (see Figure 1 below) will require a shift in how investors view E&S issues in the agribusiness sector. The necessity for this shift is underpinned by growing evidence that E&S practices at primary production sites expose investee companies to reputational as well as investment risk (such as the risk of impaired access to some markets). Conversely, investee companies and investors can benefit from managing E&S issues in the value chain more broadly.



**Figure 1: Expanding due diligence to a more inclusive scope.** The traditional scope of E&S due diligence is widened so that the investor also assesses the effects the investee company can have through its own business relationships. How does the investee company affect the E&S performance of other actors in the agricultural value chain (illustrated by a primary producer)? How can the business case of the investee company be improved? How can the investor achieve broader development outcomes? The expanded scope is highlighted in yellow.



## HOW TO USE THIS DOCUMENT

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## ADOPTING A MORE HOLISTIC APPROACH TO RISKS, VALUE DRIVERS AND DEVELOPMENT OUTCOMES

This document suggests that investors should think about three objectives as they grow their agribusiness portfolios (see Figure 2). This will allow them to achieve better outcomes when investing in companies active in the agricultural value chain.

### – Objective 1: Improve risk management

Gain better understanding and minimise E&S risks by thinking about the effects the investee company may have on – or through – other companies in the value chain, particularly primary producers. Such effects might include adverse environmental or social impacts on employees, suppliers, local communities and the natural environment.

### – Objective 2: Create value for the investee company

Strengthen the investee company's business model by identifying the opportunities that a more inclusive and integrated approach might provide.

### – Objective 3: Aim for broader development outcomes

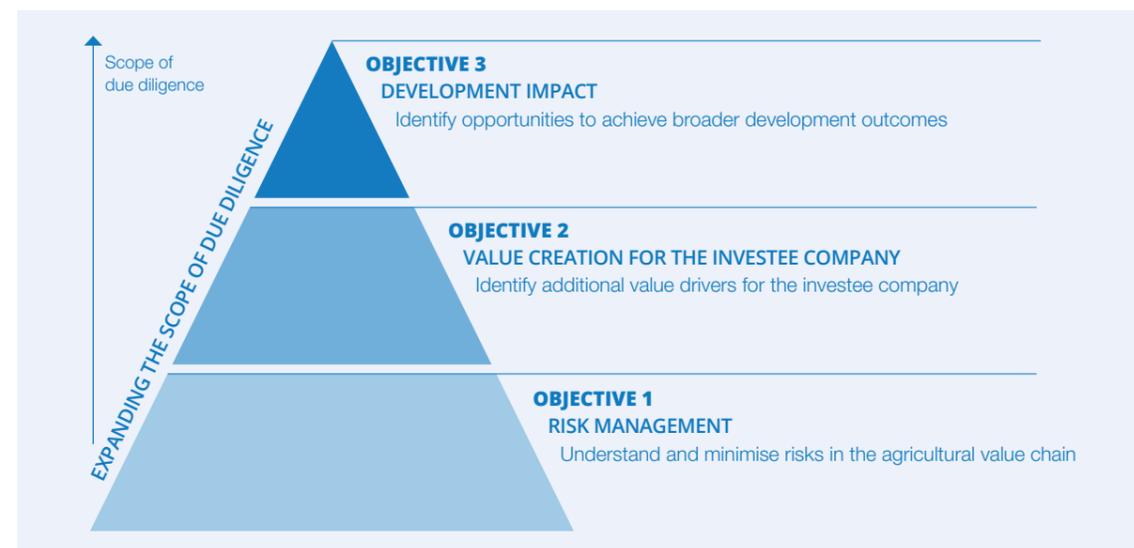
Highlight the greater development opportunities that may be achieved when the investor and the investee company address E&S risks and opportunities on a wider scale.

## HOW CAN INVESTORS USE THIS GUIDANCE?

It is in the primary interest of the investee company to identify and address risk to its business model, to comply with the DFIs' E&S requirements, to identify and benefit from value creation opportunities and to think about the development outcomes that the company might be able to improve. Thinking about these three objectives and taking the appropriate action will eventually help the investee company to further improve its business model.

In addition, these three objectives align with the objectives and values of many investors and particularly those of DFIs. From a risk management perspective alone it clearly makes sense for investors to engage with their investee companies in a discussion on how to work towards the objectives outlined above. It will also benefit the parties involved when addressing the challenges of complex agricultural value chains.

This report provides the basis for such discussions between investors and investee companies. It aims to inspire this dialogue by providing them with information about actor-specific risks and opportunities, as well as by proposing concrete action items to consider. These discussions should form an integral part of the normal engagement and due diligence process.



**Figure 2: Hierarchy of objectives.** By expanding the traditional scope of due diligence and by taking into account the business relationships between the investee company and other actors in the value chain, the investor can identify additional opportunities to improve outcomes. Better outcomes will benefit investors, companies active in the agricultural value chain and the wider community.

In practice, it will often be the investor who raises these topics – with E&S and development specialists who can support such discussions by providing further insights, analysis, assessments and practical recommendations. Much of the work, however, will have to be done by the investee company, not only because it is in its primary interest to do so, but also because it is familiar with its business model and with the value chains and communities in which it operates.

## WHEN SHOULD INVESTORS CONSIDER THIS TYPE OF EXPANDED DUE DILIGENCE?

Expectations with regard to the influence an investor can wield should be tempered by practical reality. This report identifies six key factors that can help investors to decide how much time they should spend on their efforts to meet the three objectives listed on the previous page:

### 1. Materiality of issues

How material are the E&S risks and opportunities in the investee company's market? The more sensitive the natural environment, employment practices and local communities, the greater the potential for adverse E&S impacts. Equally, where there are material E&S risks, there may also be significant opportunities thanks to more proactive engagement in E&S issues through the company's value chain.

### 2. The objectives behind the investment

A more active investor will seek opportunities to create value for the investee company by supporting the company in its attempts to build trust with other actors, to grow its revenue base and to create a reliable value chain. A stronger development agenda will provide an investor with reasons to think about the development outcomes the investment might achieve.

### 3. Size of the investment

A larger investment provides opportunities to spend more time on such considerations. When working on smaller transactions, it can be helpful to assess E&S issues – both risks and opportunities – from a portfolio perspective or to address them in discussions with coinvestors.

### 4. Size of the investee company

Smaller companies may be limited in their ability to evaluate and appropriately manage E&S issues in the value chain. This increases the need for investors to assess E&S risks properly. It also increases the value an investor can add when advising such companies.

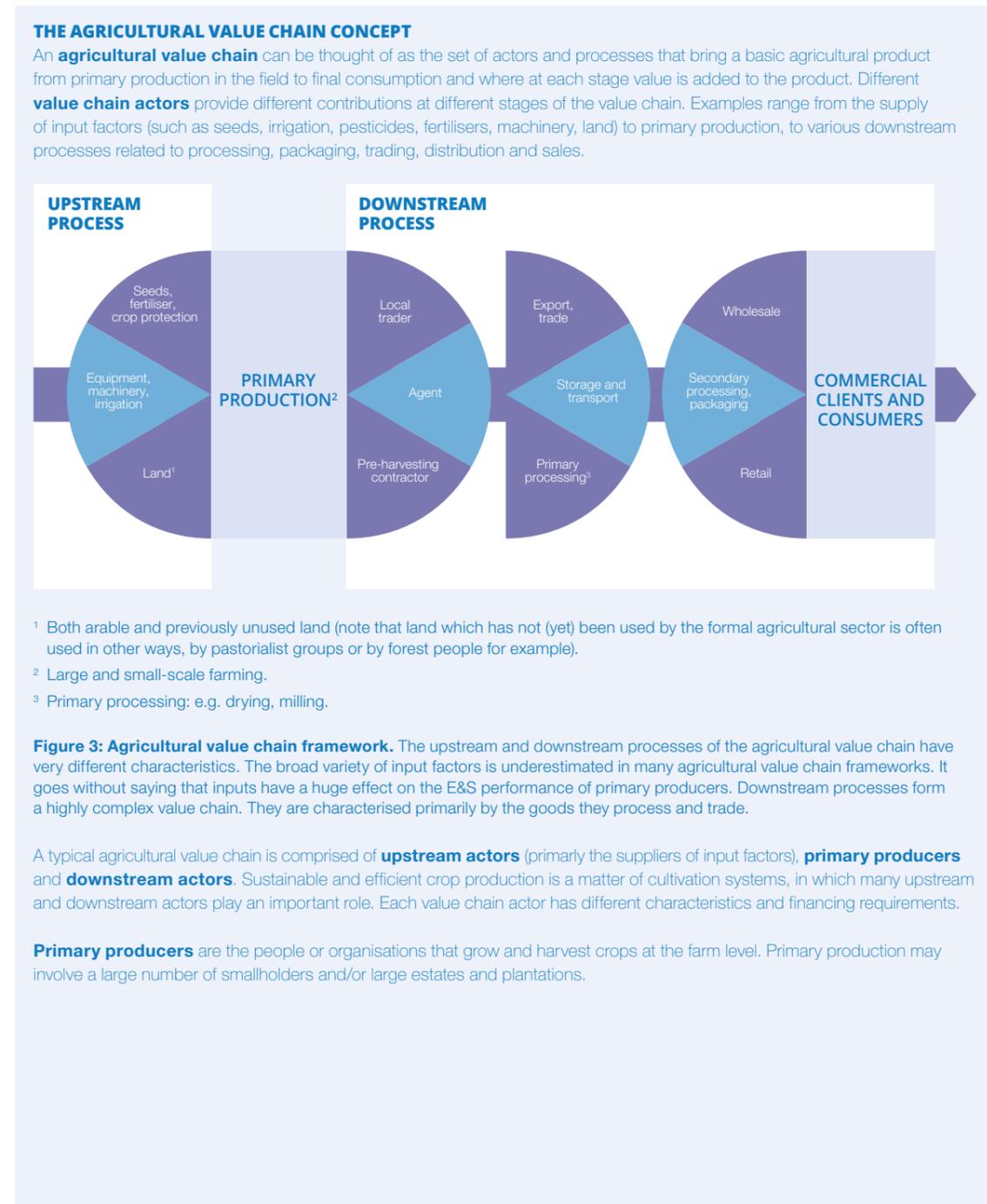
### 5. Intermediaries

Whenever there are intermediaries between the investee company and the primary producers, it will become more challenging for the investee company to exercise control over its E&S effects. On the other hand, complex supply chains might be a reason for the investee company and the investor to consider the supply chain more holistically. A stronger position in the supply chain, mitigated risks and brand differentiation might be some of the positive outcomes.

### 6. Leverage

The more leverage an investor has, the more probable it is that the business practices of the investee company can be influenced. An equity investor may well have more leverage than a lender, particularly if the investor takes on an active role, for example as a board member. A lender can try to increase leverage by offering to extend the maturity of the loan or by offering a rollover loan if the investee company meets certain criteria. Another option for the investor is to engage with other investors or with other stakeholders who exercise influence over the investee company.

In addition, some investee companies will have more influence over value chain actors – including primary producers – than others. Investors will need to find a balance between supporting their investee companies in managing risks and identifying opportunities for both value creation and broader development impacts, while avoiding overburdening them with responsibilities which they cannot reasonably bear.



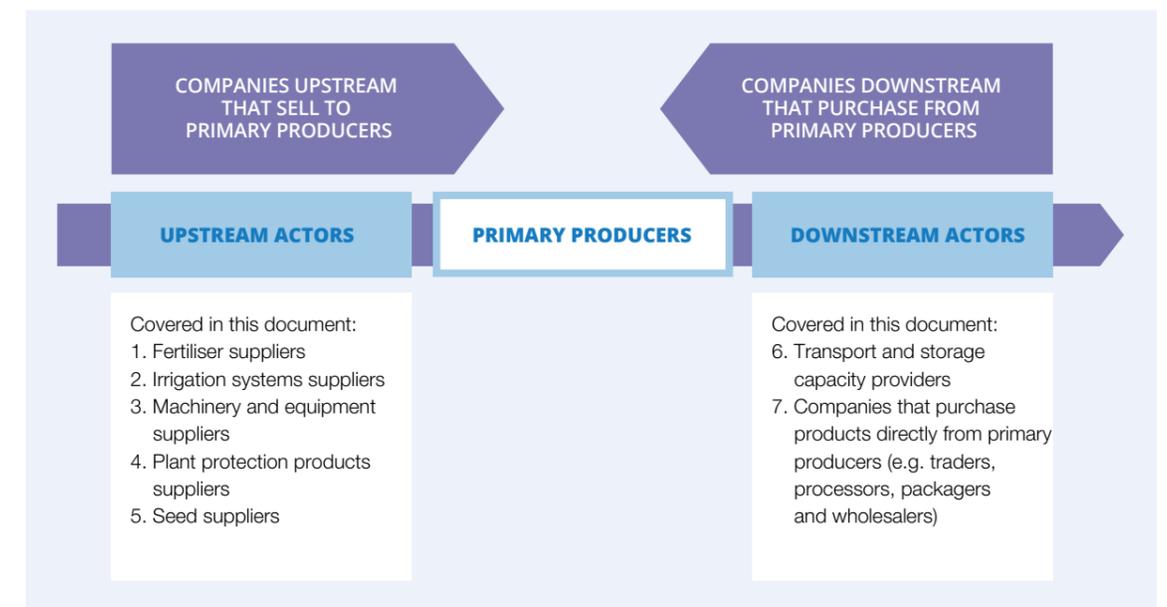
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## THE SCOPE OF THIS DOCUMENT

The most important point to note about scope is that this guidance focuses on the business relationships between upstream and downstream actors and primary producers. The value chain actors covered in this report are listed in Figure 4 below.

Actor-specific due diligence questions are provided in Section 3. This document focuses on value chain actors a) in which a DFI might typically invest and b) that have an influence on the E&S performance of other value chain actors and specifically that of

primary producers. This guidance document thus provides actor-specific guidance for the upstream actors listed in Figure 4. Downstream actors have been grouped together on the basis of the observation that the negative and positive effects they can have on other value chain actors are often comparable – with the exception of transport and storage capacity providers, which do not necessarily purchase produce from primary producers, but provide services to them instead. Other differences are discussed in the appropriate section.



**Figure 4: Overview of the value chain actors covered in Section 3**

However, it is important to be aware of two other points concerning scope:

- This guidance is intended to complement the traditional scope of E&S due diligence, as explained in Figure 1 on page 4. **As this document looks primarily at the E&S risks and opportunities that occur through the investee company's relationships with other value chain actors, it is no substitute for due diligence with regard to the investee company's own E&S practices.** As mentioned above, there is a growing literature of E&S guidelines covering many value chain actors, such as the CDC ESG Toolkit (see Section 5 for further reference).
- **This report focuses on crops**, which cover plant-based food products, biofuels and fibres such as cotton. Its scope does not include the value chains related to wood products (including timber), livestock, fisheries and aquaculture. However, a similar approach and logic could be applied to these sectors to produce comparable guidance for them.

## HOW THE DOCUMENT IS STRUCTURED

The remainder of this report consists mainly of E&S due diligence guidance for various upstream and downstream actors in the agricultural value chain (Section 3).

The guidance is structured according to the three objectives outlined in Figure 2 on page 6:

### – Step 1: Managing E&S risk in the value chain

This step helps investors to understand and minimise risks in the agricultural value chain. The E&S issues flagged for each actor represent the most significant E&S issues associated with the sector in question and/or the investor's ability to influence or leverage these via an investment. The questions help investors and investee companies to identify E&S risks that might be related to the investment or to the business practices of the investee company. In situations in which layers of intermediaries separate investee companies from primary producers, the questions would have to be adapted. This can be achieved by thinking about whether investee companies should aim to encourage intermediaries to adopt practices that are important to them.

### – Step 2: Options to create value for the investee company

As outlined in the introduction, E&S issues do not only present risks, but can also provide opportunities to improve the business models of value chain actors. This step helps investors to explore such opportunities with investee companies. Investors should work with companies to investigate how a holistic approach to value chain management could help them to identify value drivers that would provide further benefit.

Note: As step 2 would contain similar questions for most actors, this guidance element has been incorporated into a separate section (Section 4).

### – Step 3: Options to broaden development outcomes

This step highlights the greater development outcomes that may be achieved when investors and investee companies address E&S risks and opportunities on a wider scale. This step aims to help investors and investee companies to come up with solutions, whether immediately commercial or not, that will help to foster more inclusive economic development and improve livelihoods, while protecting natural resources and the environment.

The last section of this document (Section 5) provides information on good practice materials that will support investors and investee companies in working through the three steps. Additional information on useful documents can be found in the individual sections of this document.



## E&S DUE DILIGENCE GUIDANCE FOR UPSTREAM AND DOWNSTREAM ACTORS

On the following pages you will find E&S due diligence guidance for the upstream and downstream actors listed below. More information on each of those actors can then be found in the corresponding sections.

- 12** FERTILISER SUPPLIERS
- 15** IRRIGATION SYSTEMS SUPPLIERS
- 20** MACHINERY AND EQUIPMENT SUPPLIERS
- 24** PLANT PROTECTION PRODUCTS SUPPLIERS
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### 3.1 FERTILISER SUPPLIERS

This **fertiliser suppliers due diligence guide** applies to entities that provide and sell fertiliser to farmers, directly through retail sales or indirectly via wholesale channels and farmers' organisations. In this guide, 'fertiliser suppliers' refers to those that offer and supply non-organic mineral fertilisers, but might also include other, organic, products such as manure or green fertilisers.

#### STEP 1 MANAGING E&S RISK IN THE VALUE CHAIN

This step helps investors to understand and minimise risks in the agricultural value chain. This guidance is intended to **complement the traditional scope of E&S due diligence** (as explained in Section 2). As this document primarily looks at the E&S risks and opportunities that occur through the investee company's relationships with other value chain actors, it is no substitute for due diligence of the investee company's own E&S practices.

**The most significant E&S issues** associated with the actor in question and/or the investor's ability to influence or leverage these via an investment are discussed below. Depending on the markets in which they operate, investee companies may be exposed to more or to fewer of these risks and potential areas of opportunity.

This is followed by **a set of the most important due diligence questions** that can help investors and investee companies to identify E&S risks in the value chain. In situations in which layers of intermediaries separate the investee company from primary producers, the questions would have to be adapted. This can be achieved by thinking about whether the investee company should aim to encourage the intermediaries to adopt practices that are important to the investee company.

#### E&S ISSUES IN THE VALUE CHAIN

##### – Water use

Proper irrigation methods must be used if fertilisers are to be effective. If they are purchased and used in drought conditions crops will not benefit from greater nutrient availability. Under these conditions fertiliser costs would be realised as losses.

##### – Land degradation, soil erosion and depletion

The use of mineral fertilisers may lead to unsustainable soil management practices. Continuous agricultural production and the removal of nutrients from the soil will, over time, exhaust soil fertility. These impacts can further reduce the complexity of the soil structure and increase the risk of soil erosion. Fertilisers with a high salt content can exacerbate soil salinisation in areas characterised by irrigation water with high salinity content, high evapotranspiration rates and poor soil drainage. Soil salinity can reduce plant water uptake and create toxic conditions for plant and organism growth.

##### – Water pollution

Farmers apply nutrients such as phosphorus, nitrogen and potassium in the form of chemical fertilisers, manure and sludge. When these sources exceed plant needs, or are applied just before it rains, nutrients can wash into aquatic ecosystems. Here they can cause algal blooms, which can disrupt the ecosystem, create a foul taste and odour in drinking water and kill fish by removing oxygen from the water. They may also be toxic to humans and livestock.

##### – Greenhouse gas (GHG) emissions

GHG emissions occur in both the production and use of mineral fertilisers. Improper management of nitrogen fertiliser also poses a risk to GHG emissions. When nitrogen fertiliser exceeds crop needs, naturally occurring soil microbes react with the nitrogen to emit nitrous oxide (N<sub>2</sub>O). N<sub>2</sub>O has a global warming potential almost 300 times that of CO<sub>2</sub> on a 100-year timescale. Agricultural soil management is the largest source of N<sub>2</sub>O in the US, for example, accounting for about 74 per cent of total US N<sub>2</sub>O emissions in 2013 (Source: EPA).

##### – Community health and safety

Inadequate handling and/or storage of fertilisers poses the risk of spills, leakages or fires. High concentrations of nitrate in drinking water, caused by nutrients leaking into ground water, can cause methemoglobinemia, a potentially fatal disease in infants, also known as blue baby syndrome. Additional health effects posed by fertilisers are the potential for heavy metal contamination. Cadmium, which can be found in phosphate fertilisers, is of particular relevance owing to bioaccumulation concerns and potential health impacts on the higher levels of the food chain.

- 3.1 Fertiliser suppliers
- 3.2 Irrigation systems suppliers
- 3.3 Machinery and equipment suppliers
- 3.4 Plant protection products suppliers
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### E&S DUE DILIGENCE QUESTIONS

**Q** HOW DOES THE INVESTEE COMPANY ENSURE THAT IT PROVIDES PRIMARY PRODUCERS WITH SOLUTIONS BEST SUITED TO THEIR NEEDS?

#### RATIONALE

Fertilisers are essential for producing high-yield and high-quality produce. However, they can be applied in quantities that exceed the limits of crop absorption (over-fertilisation). The efficient uptake of nutrients depends on site-specific climate and soil conditions (e.g. temperature, rainfall, soil texture, etc.), the age and condition of the crop and other factors. Timing is also a critical element, as well as the use of special machinery and equipment to apply certain fertilisers.

Input suppliers can also support small-scale farmers by providing input financing, where the supplier advances agricultural inputs to farmers for repayment at harvest or another agreed time. The cost of credit (interest) is generally embedded in the price. If the inputs are of good quality, provided on time and at reasonable prices, they can enable small-scale farmers to improve productivity and profitability. However, while supplier financing enables farmers to access the inputs they need, there are risks to the supplier and the farmer that need to be addressed and managed carefully when the agreement is set up (input suppliers might charge farmers excessive prices or farmers might sell the crops to buyers other than the sponsor, for example).

#### POSSIBLE ACTION

Check whether the investee company:

- Discusses with its clients the most suitable fertiliser option, based on production conditions, crop type, cropping and irrigation methods and soil and weather conditions.
- Provides soil testing and analysis services (e.g. an analysis of soil nutrient content and acidity) and consultation on optimum fertiliser application, to manage the risk of over-fertilisation.
- Provides farmers, especially smallholders, with multiple purchasing options in terms of quantity and style of fertiliser packaging.
- Where applicable and feasible, offers input financing to small-scale farmers on terms and specifications that benefit all parties involved.

**Q** HOW DOES THE INVESTEE COMPANY PROMOTE THE EFFICIENT AND SUSTAINABLE USE OF ITS PRODUCTS?

#### RATIONALE

Excessive or improper fertiliser application is a source of environmental pollution, GHG emissions and unnecessary costs and can lead to a long-term reduction in soil fertility. The duration of higher yields can be extended and produce quality improved best with fertiliser where the products are used efficiently and environmental concerns are addressed. Where feasible and conditions are favourable, consider options for natural fertilisers such as compost, manure and green manure.

Proper storage is relevant to health and safety. Fertilisers should be stored off the ground and away from water sources and ignition points. Spills or leakage should be prevented where possible and immediately cleaned up.

#### POSSIBLE ACTION

Check whether the investee company:

- Offers training modules, information and guidance manuals for best practices in fertiliser management, including its application, handling and storage and the emergency clean-up of spills.
- Provides farmers, in particular smallholders, with training in integrated nutrient management including the development and implementation of a tailored nutrient management plan, which follows published agricultural principles and includes a practice manual.
- Encourages responsible fertilisation and soil management practices such as intercropping, composting and crop rotation, where they can be partially or fully utilised.
- Where feasible, offers compost options (i.e. natural fertilisers) from local sources and/or offers composting systems for primary producers to make use of by-products.
- Provides farmers with information on best practices (and inputs) for land rehabilitation (e.g. practices to tackle soil erosion and degradation).

## STEP 2 OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY

As outlined in the introduction (Section 1), E&S issues do not only present risks, but can also provide **opportunities to improve the business models of value chain actors**. This step helps investors to explore such opportunities with the investee company. The investor should work with the company to investigate how a holistic approach to value chain management could help it to identify value drivers that would provide further benefit.

As Step 2 would contain similar questions for most actors, this guidance element has been incorporated into a separate section: [Section 4](#) (pages 47–49).

## STEP 3 OPTIONS TO BROADEN DEVELOPMENT OUTCOMES

This step highlights the **greater development opportunities** that may be achieved when the investor and the investee company address E&S risks and opportunities on a wider scale.

This step aims to help investors and investee companies to come up with solutions, whether immediately commercial or not, that will help to foster more inclusive economic development and improve livelihoods, while protecting natural resources and the environment.

### VALUE CREATION FOR PRIMARY PRODUCERS

#### – Efficient use of inputs:

##### – Seeds

Varieties designed for higher yield often take better advantage of available nutrients. Providing optimum nutrient conditions is essential for the successful use of these varieties.

##### – Labour

Improving crop yields by efficiently using mineral fertilisers can reduce labour requirements and the overall farm management needed to ensure crop success.

##### – Higher income and improved livelihoods

Optimum fertiliser application can significantly boost production yields as well as quality. Better yields and quality facilitate higher incomes and access to better markets (e.g. contract production).

##### – Market access

Fertilisers can also support production systems that allow cultivation in alternative environments, for an extended production season or for growing out of season, allowing access to higher-value markets and higher incomes (e.g. growing in sandy soils).

### BENEFITS FOR THE COMMUNITY AND THE ENVIRONMENT

#### – Promoting environmental sustainability

Better fertiliser management helps to improve crop yields and mitigate negative effects on the environment. Supporting opportunities for organic fertiliser use and soil maintenance techniques can improve livelihoods and support ecosystem services.

### USEFUL REFERENCES

**World Fertiliser Use Trends**; FAO (2015); <http://www.fao.org/news/story/en/item/277488/icode/>

**Improving the effectiveness, efficiency and sustainability of fertiliser use in Sub-Saharan Africa**; GDN (2012); [http://www.gdn.int/admin/uploads/editor/files/SSA\\_3\\_PolicyBrief\\_Fertiliser\\_Efficiency.pdf](http://www.gdn.int/admin/uploads/editor/files/SSA_3_PolicyBrief_Fertiliser_Efficiency.pdf)

**Code of Practice on Safety and Health in Agriculture**; ILO (2010); [http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms\\_159457.pdf](http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_159457.pdf)

**Environmental, Health and Safety Guidelines for Annual Crop Production**; IFC (2007); <http://www.ifc.org/wps/wcm/connect/077b7f004885533bae2cfe6a6515bb18/Final%2B-%2BAnnual%2BCrop%2BProduction.pdf?MOD=AJPERES>

**EPA Overview of Greenhouse Gases**; EPA; <http://epa.gov/climatechange/ghgemissions/gases/n2o.html>

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## 3.2 IRRIGATION SYSTEMS SUPPLIERS

This **due diligence guide for irrigation systems suppliers** applies to companies or organisations that provide and sell irrigation systems to farmers, either directly through retail sales or indirectly via wholesale channels and farmers' organisations.

### STEP 1 MANAGING E&S RISK IN THE VALUE CHAIN

This step helps investors to understand and minimise risks in the agricultural value chain. This guidance is intended to **complement the traditional scope of E&S due diligence** (as explained in Section 2). As this document primarily looks at the E&S risks and opportunities that occur through the investee company's relationships with other value chain actors, it is no substitute for due diligence of the investee company's own E&S practices.

**The most significant E&S issues** associated with the actor in question and/or the investor's ability to influence or leverage these via an investment are discussed below. Depending on the markets in which they operate, investee companies may be exposed to more or to fewer of these risks and potential areas of opportunity.

This is followed by **a set of the most important due diligence questions** that can help investors and investee companies to identify E&S risks in the value chain. In situations in which layers of intermediaries separate the investee company from primary producers, the questions would have to be adapted. This can be achieved by thinking about whether the investee company should aim to encourage the intermediaries to adopt practices that are important to the investee company.

### E&S ISSUES IN THE VALUE CHAIN

#### – Water use

The poor design, installation and operation of irrigation systems can result in water waste (e.g. over-irrigation) and the potential depletion of available water resources such as streams, rivers and groundwater. Of particular concern is the overuse of non-renewable water resources (e.g. non-renewable groundwater aquifers) and the installation of irrigation systems in areas affected by water scarcity, which may leave other stakeholders and the wider ecosystem without the water they need.

#### – Energy use

Irrigation systems are often energy-intensive. Inefficient irrigation systems increase production costs.

#### – Land degradation, soil erosion and depletion

The accumulation of minerals and salts naturally occurring in irrigation water can reduce soil fertility (salinisation). Soil salinisation occurs in conditions where irrigation is used intensively, the water has a high salt and mineral content and soil drainage is limited. Salinity can be further exacerbated when fertilisers with high salt content are applied. These circumstances are consistent with areas that receive low rainfall, have high evapotranspiration rates, or have soil characteristics that impede the elimination of accumulated salts. These conditions can reduce the plants' water uptake capacity and may be toxic to plants and other organisms.

#### – Water and soil pollution

The intensity and method of irrigation can have a direct impact on the environmental risks related to other farm inputs. For example, the application of poorly managed or inefficient pesticides and fertilisers can result in runoff that pollutes water and soil, with a range of ecological and social consequences. Excessive irrigation can also affect water quality by causing erosion, transporting nutrients, pesticides and heavy metals to adjacent watercourses.

#### – Impairment of ecosystem services

The inadequate management of irrigation systems can potentially change water flows, as well as the quality and volume of nearby bodies of water. Reducing water availability or quality to downstream communities, protected areas or wetlands can generate further risks for primary producers, including social conflict and legal action.

#### – Community health and safety

The use of water for agricultural irrigation may affect downstream communities and water availability for other uses, such as drinking, irrigation, animal husbandry, cooking, etc. This can result in conflict with other stakeholders. Return flow and runoff can also increase the incidence of water-related diseases in humans and animals.

## E&S DUE DILIGENCE QUESTIONS

**Q** HOW DOES THE INVESTEE COMPANY MAKE SURE IT PROVIDES PRIMARY PRODUCERS WITH A SOLUTION THAT BEST FITS THEIR NEEDS, WHILE BEING EFFECTIVE, EFFICIENT AND SUSTAINABLE?

### RATIONALE

In many cases there is no single best solution. To choose an irrigation method, the farmer must know the advantages and disadvantages of the various methods and which one suits the local conditions the best (soil type, slope, climate, water quality and availability). Installing an irrigation system is viable for the primary producer only if the benefits exceed the potential cost. One of the primary criteria in choosing an irrigation method should be the efficiency and sustainability of the system. Irrigation systems that offer the highest water and energy use efficiency for the location, crop and production system should be favoured. Water application efficiency is generally higher with sprinkler and drip irrigation than with surface irrigation and so these methods are preferred where water is in short supply. The lower the irrigation efficiency, the higher the losses. Fairly high irrigation efficiencies of 70 per cent or more (i.e. losses of 30 per cent or less) can be obtained with sophisticated techniques, or by precision land levelling for surface irrigation. 'Smart' irrigation control technologies (e.g. soil moisture sensors, rain sensor shut-off systems) can be used to further improve efficiency. In general, more efficient systems are technically more complicated and require higher capital investment per hectare and therefore are mostly used for high-value cash crops. In practice, efficiency is influenced by both the irrigation method and the appropriate use of the system by the operator.

Other criteria include water quality and availability, type of crop, climate conditions, soil type and financial accessibility or the means of the primary producer. For example, a special assessment may be considered in areas likely to be more affected by climate change, such as droughts, floods and heat waves, or those relying on aquifers subject to cumulative demand. In areas where salinisation is a risk, appropriate drainage systems should be considered. In cases where water is also used for processing and cleaning produce, filtration systems for runoff water should also be considered as part of the service offered.

### POSSIBLE ACTION

Check whether the investee company:

- Discusses with its clients and assesses whether the most suitable system is put in place.
- Discusses with its clients and assesses the local and environmental context of the area to be irrigated, in terms of water availability and quality, cumulative demand, climate change risks, single catchment stress, etc.
- Discusses with its clients and assesses the necessity of an adequate drainage and/or filtration system.
- Guarantees the correct installation of the system for the end user and offers installation services or training.
- Develops or offers affordable, efficient and sustainable irrigation systems to smallholder farmers. Examples include explicit opportunities or products that offer energy savings or use alternative energies such as solar pumps if local conditions are adequate.
- Where feasible, offers smart irrigation control technologies.

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**Q** HOW DOES THE INVESTEE COMPANY SUPPORT PRIMARY PRODUCERS IN ASSESSING THE POTENTIAL IMPACT OF IRRIGATION SYSTEMS ON NEARBY COMMUNITIES AND THE ENVIRONMENT?

### RATIONALE

The environmental impacts of irrigation are the changes in the quantity and quality of soil and water as a result of irrigation and the ensuing effects on the natural and social conditions downstream of the irrigation scheme. Impacts on the hydrological conditions of nearby water bodies (i.e. direct impacts) and impacts on the quality of water and soil (indirect impacts) are correlated with the type of irrigation used.

Conflict with other water end users may arise as a result of the installation of an irrigation system. Potential contamination of natural resources resulting from the inefficient management and operation of the irrigation system may impair the livelihoods of nearby communities. An investee company should avoid installing an irrigation system where there is uncertainty about the ownership of or access to ground and surface waters, or where it might directly or indirectly affect protected areas or other valuable ecosystems. Special attention should be paid to regions prone to drought, those with water scarcity and to catchments subject to high cumulative demand for water (for all uses).

### POSSIBLE ACTION

Check whether the investee company:

- Takes into consideration potential negative effects on local communities and the natural environment when assessing the best available option for the user.
- Considers cumulative demand when assessing the best available option for the user.
- Offers advice to help resolve conflicts with communities over water resources, for example by utilising drip irrigation systems or other water-efficient technologies.
- Considers climate-related risks or changes in the services it offers to primary producers.

**Q** HOW DOES THE INVESTEE COMPANY MAKE PRIMARY PRODUCERS AWARE OF THE CONSEQUENCES OF INAPPROPRIATELY USING AND/OR POORLY MAINTAINING THE IRRIGATION SYSTEM?

### RATIONALE

Irresponsible use of the irrigation system can result in inefficient input use and pollution. The inefficient use of an irrigation system can diminish the impact of better seeds, fertiliser use or plant protection, as well as exacerbate E&S impacts. Overuse can also increase the runoff and pollution caused by agricultural inputs. Over time, an irrigation system maintains its full potential only if properly maintained. Monitoring and measurements are required to determine the total volumes of water available as well as pump flow rates. Monitoring is also required to evaluate water quality and return flows.

In summary, to improve irrigation performance, it is necessary not only to promote the implementation of irrigation scheduling methods, but simultaneously to improve system design and performance and to enhance farmers' skills in controlling and managing their irrigation system more efficiently during its operation.

### POSSIBLE ACTION

Check whether the investee company:

- Offers guidance to primary producers on the E&S risks related to the misuse of the chosen irrigation method.
- Offers training modules, information platforms and manuals for good practices on proper irrigation system installation, operation, maintenance, measurement and monitoring.
- Offers after-sale maintenance services.
- Offers guidance targeted at smallholder farmers on efficient water management, crop water needs and adequate operation and maintenance.

## STEP 2 OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY

As outlined in the introduction (Section 1), E&S issues do not only present risks, but can also provide **opportunities to improve the business models of value chain actors**. This step helps investors to explore such opportunities with the investee company. The investor should work with the company to investigate how a holistic approach to value chain management could help it to identify value drivers that would provide further benefit.

As Step 2 would contain similar questions for most actors, this guidance element has been incorporated into a separate section: Section 4 (pages 47–49).

## STEP 3 OPTIONS TO BROADEN DEVELOPMENT OUTCOMES

This step highlights the **greater development opportunities** that may be achieved when the investor and the investee company address E&S risks and opportunities on a wider scale.

This step aims to help investors and investee companies to come up with solutions, whether immediately commercial or not, that will help to foster more inclusive economic development and improve livelihoods, while protecting natural resources and the environment.

### VALUE CREATION FOR PRIMARY PRODUCERS

#### – Efficient use of inputs

Efficient irrigation system technology helps primary producers, in particular small farmers, to use inputs such as water, fertiliser, energy and labour more efficiently:

#### – Water

Efficient irrigation allows farmers to: a) use less water to grow the same volume of crops; b) increase productivity, utilising larger areas of land; and/or c) grow higher-value, more water-intensive crops.

#### – Fertiliser

Efficient irrigation reduces the amount of fertiliser needed per plant, reducing waste and costs and lowering labour input.

#### – Energy

Efficient irrigation reduces energy use because less water is needed for a comparable land area. This in turn requires less energy to pump the water. Energy-efficient pumps and pumps powered by renewable energy sources (wind or solar) can reduce primary production costs still further.

#### – Labour

Where they replace or supplement manual watering or pumping, efficient irrigation systems reduce labour intensity and the time required for crop irrigation.

#### – Livelihood improvement

As stated above, efficient irrigation technology can help small farmers to improve their livelihoods by permitting the more efficient use of inputs and time. Primary producers and small farmers trained in the proper use of this technology will benefit the most.

#### – Higher incomes

The use of efficient irrigation technology directly improves crop yields and quality. There are also indirect effects in the form of lower soil salinity and runoff, as well as longer crop seasons. This gives farmers the ability to serve higher-margin markets outside peak production periods. In the presence of functioning markets, high demand and a favourable business environment, these changes in turn help to generate higher incomes and better livelihoods.

### BENEFITS FOR THE COMMUNITY AND THE ENVIRONMENT

#### – Promoting environmental sustainability

Agriculture accounts for approximately 70 per cent of global freshwater use, contributing significantly to water scarcity. Efficient irrigation technology can promote environmental sustainability through a more efficient use of resources (water and energy) and the more widespread adoption of sustainable soil maintenance techniques.

#### – Fostering adaptation to change

The use of efficient irrigation technology could help farmers in vulnerable regions to adapt and strengthen their response to climate change and reduced water availability.

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### USEFUL REFERENCES

#### **Environmental, Health and Safety Guidelines for Annual Crop Production**; IFC (2007);

<http://www.ifc.org/wps/wcm/connect/077b7f004885533bae2cfe6a6515bb18/Final%2B-%2BAnnual%2BCrop%2BProduction.pdf?MOD=AJPERES>

#### **International Commission on Irrigation and Drainage**;

ICID;  
[http://www.icid.org/about\\_icid.html](http://www.icid.org/about_icid.html)

#### **Irrigation Water Management: Irrigation Methods**; FAO;

<http://www.fao.org/docrep/s8684e/s8684e00.htm#Contents>  
(Note: See Chapter 7 on 'Choosing an Irrigation Method')

#### **Environmental Impact Assessment of Irrigation and Drainage Projects**; FAO (1995);

[ftp://ftp.fao.org/agl/aglw/Morini/05\\_EIA.pdf](ftp://ftp.fao.org/agl/aglw/Morini/05_EIA.pdf)

#### **Impact of Efficient Irrigation Technology on Small Farmers**; IFC;

<http://www.ifc.org/wps/wcm/connect/2a54040046a86bc6989db99916182e35/Impact+of+Efficient+Irrigation+Technology+on+Small+Farmers+-+IFC+Brochure.pdf?MOD=AJPERES>

### 3.3 MACHINERY AND EQUIPMENT SUPPLIERS

This **due diligence guide for machinery and equipment suppliers** applies to companies manufacturing and selling agricultural machinery and equipment used to prepare, plant, maintain and harvest crops. Examples of agricultural machinery include bulldozers, tractors, tractor-drawn drills and other attachments, planters, harvesting machinery, belts and augers. 'Agricultural equipment' normally refers to stationary mechanical devices such as irrigation pump-sets, hammer mills, centrifuges, milking machines, etc. For suppliers of irrigation systems, please refer to the **due diligence guide for irrigation systems suppliers**.

#### STEP 1 MANAGING E&S RISK IN THE VALUE CHAIN

This step helps investors to understand and minimise risks in the agricultural value chain. This guidance is intended to **complement the traditional scope of E&S due diligence** (as explained in Section 2). As this document primarily looks at the E&S risks and opportunities that occur through the investee company's relationships with other value chain actors, it is no substitute for due diligence of the investee company's own E&S practices.

**The most significant E&S issues** associated with the actor in question and/or the investor's ability to influence or leverage these via an investment are discussed below. Depending on the markets in which they operate, investee companies may be exposed to more or to fewer of these risks and potential areas of opportunity.

This is followed by **a set of the most important due diligence questions** that can help investors and investee companies to identify E&S risks in the value chain. In situations in which layers of intermediaries separate the investee company from primary producers, the questions would have to be adapted. This can be achieved by thinking about whether the investee company should aim to encourage the intermediaries to adopt practices that are important to the investee company.

#### E&S ISSUES IN THE VALUE CHAIN

##### – Energy use

Modern agriculture relies upon machinery that runs on gasoline and diesel and equipment that uses electricity. Tractors and their various implements, for example, account for a considerable portion of the total crop energy use. In fact, in the US they are one of the largest end use of energy for crop production, after fertilisers and pesticides.

##### – Impacts on habitats and biodiversity

In situations in which machinery is used to convert natural habitat to farmland there are obviously significant risks and issues. Agriculture poses one of the most significant threats to biodiversity globally and the conversion/fragmentation of natural habitats is a significant and growing risk in many emerging markets.

##### – Land degradation, soil erosion and depletion

While mechanisation greatly increases agricultural efficiency, it can also have negative effects such as soil degradation and nutrient depletion. Soil degradation may result from poor soil management techniques, the excessive use of machinery and over-intensive farming. These practices can affect soil structure in the form of compaction due to the repetitive use of heavy machinery, as well as soil structure degradation owing to tillage equipment.

##### – Soil and water pollution

Soil compaction by heavy machinery increases the density of the soil and reduces infiltration, while tillage can remove beneficial soil structure. In both cases, when not properly managed, soil structure will degrade, ultimately increasing surface runoff. These factors contribute to soil erosion and simultaneously raise the risk of sedimentation. The settling of suspended sediment reduces the storage and flow capacities of irrigation channels, streams, lakes and reservoirs, adversely affecting water supplies and increasing flood potential. The ecology of aquatic systems and fish populations can also suffer, as can water quality and availability for downstream communities. Inadequate fuel storage at farm level can also increase the danger of fire and the risk of environmental contamination by spills and leakages.

##### – Impairment of ecosystem services

In addition to increasing density and reducing soil drainage capacity, soil compaction limits the oxygen and carbon dioxide available in the soil. These are essential components needed to sustain soil microbes. These conditions have a negative impact on organic matter decomposition and nutrient cycling, ultimately leading to less fertile soil. Soil carbon sequestration capacity can also be reduced. Further impairment to the soil can be caused when crop rotation and cover cropping are no longer practised.

##### – Occupational health and safety

Among the principal causes of work-related accidents and fatalities in the agricultural sector are the use of unsafe machinery and/or equipment, its inadequate use and limited access to personal protective equipment (PPE). A lack of awareness and/or understanding of the risks related to the work can also increase the risk of accidents, for example where workers who have access to PPE choose not to wear it, particularly if it impedes their performance and/or is uncomfortable.

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### E&S DUE DILIGENCE QUESTIONS

#### Q HOW DOES THE INVESTEE COMPANY SUPPORT THE TRANSITION TOWARDS SUSTAINABLE AGRICULTURAL PRACTICES AND PROMOTE BETTER LAND MANAGEMENT BY PRIMARY PRODUCERS USING ITS MACHINERY AND EQUIPMENT?

##### RATIONALE

Overall, extreme care should be taken in situations in which agricultural machinery is used to convert or clear natural habitats. Companies that provide machinery for such purposes should have clear policy requirements and recommendations in place that address the E&S risks associated with this practice, and should be committed to engage with clients on the appropriate use of machinery.

The use of farm machinery needs to be intelligent, precise and efficient in order to minimise the impact on biodiversity and ecosystem services. Soil tillage can severely damage soil ecology.

The more industrialised the farm setting becomes, the more important it is for the primary producer to practise sustainable agriculture methods, such as conservation agriculture (CA) to maintain soil structure and fertility. CA consists of three key components: minimising soil disturbance (reduced or no tillage and direct seeding), maintaining permanent soil coverage using cover crops or crop residue/mulch on exposed fields and practising crop rotation.

Special machinery is needed to plant seeds and apply fertiliser at the correct depth without disturbing crop residues. An added advantage of this type of mechanisation is that high-draught tillage is unnecessary, so lower-powered and therefore cheaper tractors can be used. These lighter machines cause less soil compaction compared with heavy tractors. Tillage operations are also very energy-intensive. Switching to no-tillage or minimum tillage can reduce fuel consumption and increase farm energy efficiency. While reduced or no tillage is an essential part of CA, truly sustainable agriculture must be complemented with other techniques, such as integrated pest management, plant nutrient management and weed and water management.

For instance, precision farming is increasingly becoming a cornerstone of sustainable agriculture. By targeting crop inputs in spatial, temporal and quantitative terms, farmers can improve their agricultural management practices, boost yields and minimise costs by reducing the volume of inputs that are needed. GPS-equipped sensors on tractors, for example,

enable farmers to measure and respond to soil variability across vast tracts of land and dispense the right amount of fertiliser and water exactly where it is needed.

Using more efficient machinery and equipment can also improve the energy efficiency of crop production. Certain adjustments and practices have been shown to minimise fuel consumption. These include: selecting the proper tractor and equipment, travel and engine speed; reducing the number of field operations and till-farming; switching from gasoline to diesel engines; selecting efficient equipment; following good maintenance practices; and operating equipment properly.

##### POSSIBLE ACTION

Check whether the investee company:

- Ensures that its machinery and equipment are not used to convert ecologically valuable habitats. Of particular concern are high conservation value areas and protected areas.
- Collaborates with complementary services, local NGOs or other value chain actors to provide farmers with education or training in conservation agriculture techniques and soil compaction management.
- Supports farmers as they shift from tillage-based farming to conservation agriculture practices for land preparation and seeding.
- Provides equipment designed to minimise weight and soil compaction; and works towards the development and/or commercialization of more efficient farm machinery and equipment.
- Provides technical information to support soil protection best practices (i.e. not using heavy equipment when the field is wet).
- Discusses with its clients the most appropriate machinery required for a given task and offers advice on how to increase energy efficiency.
- Where feasible, offers farmers precision farming equipment and/or other technological solutions to improve productivity and reduce environmental impacts.
- Assesses the extent to which leasing or other variations on sharing costs and machinery can be offered.

## E&S DUE DILIGENCE QUESTIONS CONTINUED

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| <p><b>Q</b> HOW DOES THE INVESTEE COMPANY MAKE SURE IT PROVIDES PRIMARY PRODUCERS WITH AN ACCESSIBLE AND SUSTAINABLE SOLUTION THAT BEST FITS THEIR NEEDS, WHILE OFFERING SERVICES TO SUPPORT THE OPTIMUM USE OF ITS MACHINERY AND EQUIPMENT?</p> <p><b>RATIONALE</b><br/>The efficient, safe and sustainable use of farm machinery and equipment requires its appropriate use following best practices, as well as a service infrastructure for its maintenance and repair.</p> <p>Farmers relying on outdated and defective equipment risk accidents and inefficient farming. Together with reliable machinery and equipment and a robust service infrastructure, education and training on safe handling and operation may lead to a reduction in the number of occupational accidents, injuries and fatalities.</p> <p>Very often, smallholders cannot afford to purchase new farming machinery and equipment without access to credit. Providers of farm machinery and equipment can support this access to mechanisation by providing alternative solutions to purchasing, such as rental and lease opportunities. Special attention should be paid to cases in which the switch to intensive mechanisation results in job losses.</p> | <p><b>POSSIBLE ACTION</b><br/>Check whether the investee company:</p> <ul style="list-style-type: none"> <li>– Supports smallholders with equipment designs and models that suit their needs.</li> <li>– Provides farmers with training and educational platforms on the safe and optimum use, calibration and maintenance of its machinery and equipment.</li> <li>– Offers special financial products to smallholders for the purchase, lease or rental of equipment and machinery and/or services.</li> <li>– Supports alternative service options such as equipment-sharing, rental, leasing, etc. to reduce equipment redundancy, optimise uses and minimise costs to farmers.</li> <li>– Supports farmers in developing and implementing systems to minimise the risk of injury when using machinery.</li> <li>– Collaborates with those providing support resources for the repair, maintenance and operation of machines to ensure primary producers have optimum and continual use of their equipment and machinery.</li> <li>– If feasible, offers services for the collection and/or management of obsolete and idle machinery and equipment.</li> </ul> |
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### STEP 2 OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY

As outlined in the introduction (Section 1), E&S issues do not only present risks, but can also provide **opportunities to improve the business models of value chain actors**. This step helps investors to explore such opportunities with the investee company. The investor should work with the company to investigate how a holistic approach to value chain management could help it to identify value drivers that would provide further benefit.

As Step 2 would contain similar questions for most actors, this guidance element has been incorporated into a separate section: Section 4 (pages 47–49).

### STEP 3 OPTIONS TO BROADEN DEVELOPMENT OUTCOMES

This step highlights the **greater development opportunities** that may be achieved when the investor and the investee company address E&S risks and opportunities on a wider scale.

This step aims to help investors and investee companies to come up with solutions, whether immediately commercial or not, that will help to foster more inclusive economic development and improve livelihood, while protecting natural resources and the environment.

### VALUE CREATION FOR PRIMARY PRODUCERS

- **Efficient use of inputs**  
Machinery and equipment, in tandem with the adoption of conservation agriculture practices, can support water and fuel savings. Additionally, the more accurate and consistent use of inputs such as seeds, fertilisers and pesticides will also help to improve yields while reducing production and labour costs.
- **Higher incomes and improved livelihoods**  
Mechanisation can transform smallholder economies by increasing productivity and reducing the drudgery of hand-powered production. Agricultural mechanisation and proper training on its use and maintenance at smallholder level can move farm families out of poverty into more profitable, commercially oriented agricultural production.

### BENEFITS FOR THE COMMUNITY AND THE ENVIRONMENT

- **Promoting environmental sustainability**  
Mechanisation, when carefully selected and appropriate to the task, is capable of protecting natural capital and the environment while boosting food production. More environmentally friendly land preparation and crop husbandry practices (e.g. conservation agriculture, precision farming) promote the maintenance of ecosystem services, soil productivity and the conservation of biodiversity in systems both above and below the ground.
- **Promoting greater food security**  
Efficient mechanisation can increase yields and expand production. This is essential to meet the growing demand for food.

### USEFUL REFERENCES

- A regional strategy for sustainable agricultural mechanization**; FAO (2014); <http://www.fao.org/3/a-i4270e.pdf>
- Mechanisation for Rural Development: A review of patterns and progress from around the world**; FAO (2013); <http://www.fao.org/3/a-i3259e.pdf>
- Agricultural and Food Engineering Technical Report: Farm Equipment Supply Chains**; FAO (2009); <http://www.fao.org/3/a-i1209e.pdf>
- Conservation Agriculture**; FAO; <http://www.fao.org/ag/ca/>

### 3.4 PLANT PROTECTION PRODUCTS SUPPLIERS

This **due diligence guide for suppliers of plant protection products** applies to companies or organisations that provide and sell agrochemical products used to protect plants from disease and pests, such as insecticides, herbicides, fungicides, etc. They are often collectively referred to as pesticides. Companies that manufacture, distribute and/or sell the products via wholesale and retail channels are considered to be suppliers of plant protection products.

Note that some investors include plant protection products on their exclusion lists. These often include those that meet the criteria of classes Ia or Ib of the World Health Organization (WHO) Recommended Classification of Pesticides by Hazard, or meet criteria of other international conventions such as the Stockholm or Rotterdam Conventions.

#### STEP 1 MANAGING E&S RISK IN THE VALUE CHAIN

This step will help investors to understand and minimise risks in the agricultural value chain. This guidance is intended to **complement the traditional scope of E&S due diligence** (as explained in Section 2). As this document primarily looks at the E&S risks and opportunities that occur through the investee company's relationships with other value chain actors, it is no substitute for due diligence of investee companies' own E&S practices.

**The most significant E&S issues** associated with the actor in question and/or the investor's ability to influence or leverage these via an investment are discussed below. Depending on the markets in which they operate, investee companies may be exposed to more or to fewer of these risks and potential areas of opportunity.

This is followed by **a set of the most important due diligence questions** that can help investors and investee companies to identify E&S risks in the value chain. In situations in which layers of intermediaries separate the investee company from primary producers, the questions would have to be adapted. This can be achieved by thinking about whether the investee company should aim to encourage the intermediaries to adopt practices that are important to the investee company.

#### E&S ISSUES IN THE VALUE CHAIN

##### – Water, soil and air pollution

Pesticides contain substances with varying levels of toxicity, which can contaminate soil, water, air and other vegetation. For instance, pesticides can reach surface water through runoff from treated plants and soil. The extent of pollution caused by the introduction of pesticides is determined by the way in which they are applied, including the type and quantity of product, as well as the environmental conditions at the time of use. Lack of awareness or training on the proper application and handling of pesticides can lead to misuse or overuse of these chemical products, with negative consequences for the environment, farm workers and the surrounding communities.

##### – Biodiversity loss and impairment of ecosystem services

Pesticides affect target (pest) as well as non-target species, which may be of major ecological significance. The indiscriminate use of pesticides can lead to loss of biodiversity, the disruption of predator-prey relationships and the impairment of ecosystem services such as natural pollination and may disturb the ecological balance in a way that risks stimulating the pest population.

##### – Occupational health and safety

Farmers are at the highest risk of direct exposure to the toxic chemicals contained in pesticides through dermal, respiratory or oral exposure, especially in cases in which the products are not handled correctly, or proper PPE is not used. Particular care is required in the case of highly toxic products containing chemicals that are internationally banned or are classified as 'extremely hazardous' or 'highly hazardous' according to WHO. Storage of agrochemicals and the disposal of containers and application technologies (sprays, etc.) are also critical control points for exposure to pesticide products. Where these risks are not properly addressed, the risk of exposure is acute.

##### – Community health and safety

Exposure to pesticides at community level can occur through the consumption of produce, the consumption of or exposure to water that has been contaminated, or when sprayed pesticides drift outside farm boundaries. This is particularly an issue if aerial spraying is used. Improper pesticide product storage and packaging disposal can also affect community health and safety.

##### – Market access

Regulatory restrictions on pesticide use can vary between countries, governments/jurisdictions and even between crops. When produce contains agrochemical residues, it may be banned or rejected in the market, resulting in lower value and/or product loss, damage to reputation, increased transaction costs and loss of market share.

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### E&S DUE DILIGENCE QUESTIONS

**Q** HOW DOES THE INVESTEE COMPANY MAKE SURE IT PROVIDES PRIMARY PRODUCERS WITH PLANT PROTECTION PRODUCTS THAT OFFER AN OPTIMUM OUTCOME WHILE MINIMISING NEGATIVE IMPACT ON HEALTH AND THE ENVIRONMENT?

#### RATIONALE

Plant protection products are essential for optimising produce yields and quality. However, their use can have a toxic impact on the environment and humans. An integrated pest management (IPM) and integrated vector management strategy (IVM) are the most commonly advocated methods for improving pesticide use. This consists of setting action thresholds, monitoring and identifying pests, applying prevention techniques and finally using pesticide control products. Pest and environmental information is coordinated to minimise both the use and toxicity levels of products. Proper container use and labelling is essential to minimise risks and the products must be properly licensed by the relevant regulatory agencies.

Input suppliers can also support small-scale farmers by providing input financing, where the supplier advances agricultural inputs to farmers for repayment at harvest or another agreed time. The cost of credit (interest) is generally embedded in the price. If the inputs are of good quality, provided on time and at good prices, they can enable small-scale farmers to improve productivity. However, while supplier financing enables farmers to access the inputs they need, there are risks to the supplier and the farmer that need to be addressed and managed carefully when the agreement is set up (input suppliers might charge farmers excessive prices or farmers might sell the crops to buyers other than the sponsor, for example).

#### POSSIBLE ACTION

Check whether the investee company:

- Discusses with its clients the most suitable, efficient and sustainable plant protection options based on criteria such as field observations, weather data, time of treatment and dosage.
- Provides pesticide application and handling training to farmers, including directions on both minimum and maximum recommended dosage and training in pest and weed identification.
- Provides, or identifies the need for, PPE and encourages/enables farmers to use this as appropriate.
- Helps primary producers to set action thresholds – a point at which losses as a result of pests are understood to be critical and should be acted upon.
- Offers (or collaborates with other value chain actors to offer) guidance on techniques such as crop rotation or buffer cropping, as well as on the use and implementation of IPM and IVM strategies.
- Aims to offer less toxic options to control the targeted pest(s) (e.g. biopesticides) in the first instance.
- In special cases, assumes responsibility for spraying pesticides sold to smallholders.
- Where applicable and feasible, offers input financing instruments to small-scale farmers on terms and specifications that benefit all parties involved.

## E&S DUE DILIGENCE QUESTIONS CONTINUED

**Q** HOW DOES THE INVESTEE COMPANY HELP PRIMARY PRODUCERS TO MITIGATE THE RISKS ASSOCIATED WITH PRODUCT EXPOSURE, SPILLAGE, WASTE MANAGEMENT AND UNUSED PRODUCTS?

### RATIONALE

Plant protection products and their toxic components vary significantly among products. Good practice in the sector can encourage the use of the lowest-toxicity compounds appropriate to the task in hand. To avoid accidents and damage to health, it is vital that the contents, risks and required health and safety precautions for using and handling pesticides be understood and clearly labelled on products. Pesticides should be stored in secure, sheltered, well-ventilated spaces to which only authorised personnel has access. Pesticide storage areas should not be accessible to pregnant workers, children, or animals. The risk of fire should be clearly mitigated and prevented in pesticide storage areas.

Chemical pesticides pose acute exposure risks when spilled or containers are improperly discarded or reused. Contaminated containers should be handled and disposed of as hazardous waste. Additionally, when products deteriorate, are inadequate or illegal they may be abandoned, with the risk of exposure increasing over time as containers degrade.

### POSSIBLE ACTION

Check whether the investee company:

- Informs clients of the recommended PPE that should be used during product application.
- Directly offers or collaborates with other actors to provide the recommended PPE.
- Offers accurate and easy-to-read labels on products sold to farmers. In areas with high levels of illiteracy, the investee company should provide on-site training or special information/labels for farmers who cannot read.
- Issues material safety data sheets with the first shipment of any hazardous chemical product sold or delivered to farmers.
- Informs farmers about the proper procedures to contain, clean up and dispose of a spill.
- Informs farmers about the proper handling and disposal of pesticide containers.
- Develops technology or methods to improve, reduce and/or reuse the containers used to transport and store pesticides.
- Provides or supports services for the collection and disposal of containers and/or expired products, including providing incentives for container collection and return.

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## E&S DUE DILIGENCE QUESTIONS CONTINUED

**Q** HOW DOES THE INVESTEE COMPANY MANAGE INFORMATION REGARDING ITS PRODUCTS AND THEIR EFFECTS WITHIN DIFFERENT REGULATORY ENVIRONMENTS? (ONLY IF APPLICABLE)

### RATIONALE

It is important for producers who export their products to international markets to understand how the sale of certain pesticides could be affected by varying regulatory conditions. Variations and deviations in regulation between countries, as well as the continued availability of banned substances, are further risks. These risks may be supported where the regulatory environment in a given country does not prioritise or enforce substance regulations. In general, pesticides and chemicals that are subject to international conventions, such as the Stockholm and Rotterdam Conventions, or the WHO pesticides classifications, should not be accessible to personnel without proper training, equipment and facilities to handle, store, apply and dispose of these products correctly. FAO recommends that pesticides classified as Ia, Ib and preferably II by the WHO Recommended Classification of Pesticides by Hazard should not be used in developing countries.

### POSSIBLE ACTION

Check whether the investee company:

- Discusses with its clients the potential regulatory implications of using pesticides that contain banned chemicals in the country of use or distribution.
- Promotes and offers alternative products that will help primary producers to protect their plants without violating legislation.
- Where feasible, does not manufacture or trade in products that fall in class Ia (extremely hazardous) or Ib (highly hazardous) of the WHO's Recommended Classification of Pesticides by Hazard; and does not manufacture or trade in class II (moderately hazardous) pesticides, unless the company has appropriate control on the manufacture, procurement, distribution and/or use of these chemicals.
- Where feasible, does not manufacture or trade in pesticides listed in Annexes A and B of the Stockholm Convention, except under the conditions noted in the Convention and those subject to international bans or phase-outs.

## STEP 2 OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY

As outlined in the introduction (Section 1), E&S issues do not only present risks, but can also provide **opportunities to improve the business models of value chain actors**. This step helps investors to explore such opportunities with the investee company. The investor should work with the company to investigate how a holistic approach to value chain management could help it to identify value drivers that would provide further benefit.

As Step 2 would contain similar questions for most actors, this guidance element has been incorporated into a separate section: Section 4 (pages 47–49).

## STEP 3 OPTIONS TO BROADEN DEVELOPMENT OUTCOMES

This step highlights the **greater development opportunities** that may be achieved when the investor and the investee company address E&S risks and opportunities on a wider scale.

This step aims to help investors and investee companies to come up with solutions, whether immediately commercial or not, that will help to foster more inclusive economic development and improve livelihood, while protecting natural resources and the environment.

## VALUE CREATION FOR PRIMARY PRODUCERS

### – Higher incomes and improved livelihoods

Training and/or increased awareness of best practices in pesticide management, combined with soil management techniques, support farmers in achieving improved yields and crop sustainability. In turn, this may result in better incomes and improved livelihoods for primary producers.

## BENEFITS FOR THE COMMUNITY AND THE ENVIRONMENT

### – Promoting environmental sustainability

Promoting integrated pest management systems can help to achieve a more efficient use of plant protection products, offering an opportunity to reduce pesticide use and/or improve their management. Integrated pest management systems are key to reducing toxic impacts on local ecosystems and communities.

## USEFUL REFERENCES

### Resource Efficiency and Pollution Prevention, Performance Standard 3; IFC (2012);

[http://www.ifc.org/wps/wcm/connect/25356f8049a78eeeb804faa8c6a8312a/Ps3\\_English\\_2012.pdf?MOD=AJPERES](http://www.ifc.org/wps/wcm/connect/25356f8049a78eeeb804faa8c6a8312a/Ps3_English_2012.pdf?MOD=AJPERES)

### Code of Practice on Safety and Health in Agriculture;

ILO (2010);

[http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms\\_159457.pdf](http://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/@publ/documents/publication/wcms_159457.pdf)

### The WHO Recommended Classification of Pesticides by Hazard; WHO (2009);

[http://www.who.int/ipcs/publications/pesticides\\_hazard\\_2009.pdf?ua=1](http://www.who.int/ipcs/publications/pesticides_hazard_2009.pdf?ua=1)

### Environmental, Health and Safety Guidelines for Plantation Crop Production; IFC (2007);

<http://www.ifc.org/wps/wcm/connect/78335e8048855bb989d4db6a6515bb18/Final+-+BPlantation+BCrop+Production.pdf?MOD=AJPERES>

### EPA Guides and Information on Pesticides; EPA;

<http://www.epa.gov/pesticides/index.htm>

### FAO Directory and Information for Integrated Pest Management; FAO;

<http://www.fao.org/agriculture/crops/thematic-sitemap/theme/pests/ipm/en/>

### International Agreements and Treaties on Pesticides (including Rotterdam and Stockholm Conventions); EPA;

<http://www.epa.gov/pesticides/international/agreements/>

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## 3.5 SEED SUPPLIERS

This **seed suppliers' due diligence guide** applies to companies or organisations that provide and sell seeds to farmers, directly through retail sales or indirectly via wholesale channels and farmers' organisations.

Seed providers can support primary producers by providing seeds that lead to better yields (quality and quantity), reduce input requirements (water and nutrients) and/or overcome environmental and climatic constraints (drought, weeds, insects, disease, etc.). These characteristics are achieved using cross-breeding methods to develop improved seed species varieties; and also, subject to regulation, through the contemporary use of seeds from genetically modified organisms (GMOs): organisms whose genetic material has been altered through genetic engineering. GMOs do not occur in nature and unlike traditionally cross-breeding methods, can be created using combinations of plant, animal bacteria and viral genes.

## STEP 1 MANAGING E&S RISK IN THE VALUE CHAIN

This step helps investors to understand and minimise risks in the agricultural value chain. This guidance is intended to **complement the traditional scope of E&S due diligence** (as explained in Section 2). As this document primarily looks at the E&S risks and opportunities that occur through the investee company's relationships with other value chain actors, it is no substitute for due diligence of the investee company's own E&S practices.

The **most significant E&S issues** associated with the actor in question and/or the investor's ability to influence or leverage these via an investment are discussed below. Depending on the markets in which they operate, investee companies may be exposed to more or to fewer of these risks and potential areas of opportunity.

This is followed by **a set of the most important due diligence questions** that can help investors and investee companies to identify E&S risks in the value chain. In situations in which layers of intermediaries separate the investee company from primary producers, the questions would have to be adapted. This can be achieved by thinking about whether the investee company should aim to encourage the intermediaries to adopt practices that are important to the investee company.

## E&S ISSUES IN THE VALUE CHAIN

### – Water use

Seed varieties which offer higher yielding traits often require greater levels of irrigation to support improved crop success and increased biomass. In locations with current or potential water scarcity, a lack of sustainable irrigation sources could limit the potential benefit of improved seed variety use. In contrast, drought-resistant varieties offer a benefit to overcome climatic constraints and can maintain or improve yields in more variable conditions.

### – Pollution and emissions

As with irrigation, seed species that offer higher yields and quality may need to be supported with additional nutrients and/or crop protection products to be effective. In some cases, the increased use of fertiliser or pesticides presents a risk that agrochemicals may be mismanaged, i.e. overused or applied incorrectly. This can lead to environmental pollution through runoff or leaching into water systems, posing a threat to ecosystems and human health. Conversely, benefits can also be achieved when improvements have been made to the seeds that reduce the required nutrient or protection products required for optimal yield.

### – Biodiversity loss and habitat loss/conversion

Biodiversity is impacted under conditions in which a reduced choice of seeds exists and/or particular varieties are offered at exceptionally low prices. These conditions may support less diverse farming systems, trending towards a monoculture crop system. The widespread and intensified use of large monocultures represents a risk for reduced natural crop resistance to climatic changes, pests and disease. Further negative impacts can be present in the form of reduced natural pollination and a reduced resistance to invasive plant species.

### – Loss of indigenous knowledge

Seed providers may offer non-local species or varieties, impairing the availability of native seeds that have traditionally been produced locally. For regions that have largely depended on local seed species, the lack of diversity can erode or eradicate important local agricultural knowledge. This indigenous knowledge is significant given that local seed species and varieties often contain adaptive qualities from natural breeding processes occurring over long periods.

### – Market demand

By choosing to produce and commercialise certain varieties of seeds, seed providers directly impact the diversity of crops available for farmers to produce. The commercialisation of a limited variety of crops increases the farmer's risks to shifts in market demand.

### GMO-SPECIFIC E&S ISSUES

In addition to the above-mentioned risks, certain additional risks may be evident in the use of genetically modified (GM) seeds:

– **Pollution and emissions**

Many GM seed varieties are designed to better withstand application of plant protection products. This modification could lead to the increased use of plant protection products and may result in the development of resistant weeds or insects, inviting a cycle of increased agrochemical use. In some cases, GMOs may also help to reduce pesticide use.

– **Contractual dependence**

GM seeds are generally proprietary (with intellectual property rights held by the developer), which can result in restrictions on use by third parties, as well as limit farmer choice. However, GM seeds are not the only seeds carrying intellectual property rights. Conventional (non-GM) and organic hybrid seeds may also be patented and cannot be saved for use in the next planting season.

– **Market access**

GM crops and products face different regulations within different markets, ranging from few regulatory barriers to complete bans. The production of GM crops has the potential to limit the market access of producers due to these regulations.

– **Community health and safety**

Owing to the questions surrounding GMOs, there is public concern over the health effects of consumption of GM products. Debate over potential long-term health impacts has prompted regulatory actions in many jurisdictions.

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### E&S DUE DILIGENCE QUESTIONS

**Q** HOW DOES THE INVESTEE COMPANY MAKE SURE IT PROVIDES PRIMARY PRODUCERS WITH A SEED SUPPLY THAT IS OF HIGH QUALITY AND SUITABLE FOR THE LOCAL CONDITIONS?

**RATIONALE**

Seed suppliers provide a sustainable solution to farmers when they offer a source of reliable and high-quality seeds at affordable prices. Seeds can provide the best outcome for farmers when they are adapted to the local agro-ecology and to farmers' own management conditions, are disease-resistant and are chosen with consideration of future climate change scenarios such as precipitation, temporal variability and fluctuation. Seeds originating from outside the region need to be adequately tested for quality and checked for suitability to local conditions. To capitalise on the benefits of using improved seeds, primary producers need – among other things – to have a clear understanding of the specifications and resources (such as irrigation and fertiliser) required for their use.

**POSSIBLE ACTION**

Check whether the investee company:

- Supports primary producers in establishing proper quality criteria according to the variety of seeds, the farmer's own management criteria and local conditions such as water availability, potential climate change impacts, floods, droughts, etc.
- Discusses and assesses together with primary producers the benefits and weaknesses of different seed varieties and species.
- Encourages collaboration with local agriculture experts and farmers to test and develop the quality and appropriateness of non-regional seeds to determine optimum seed varieties and species for local conditions prior to large-scale commercialisation.
- Offers best practice training modules and information platforms on proper seed and crop management according to different varieties and species.
- Supports techniques for improving farm landscape diversity and natural pollination, such as planting field margins with local wildflower seed mixes and utilising intercropping/mixed cropping methods.

**Q** HOW DOES THE INVESTEE COMPANY ENABLE PRIMARY PRODUCERS TO MAKE INFORMED DECISIONS ON THE SELECTION OF SEED VARIETIES AND SPECIES OF THEIR CHOICE?

**RATIONALE**

Seed providers directly impact farmers' production systems in terms of both the crop varieties available for production and the method of cropping. Seed suppliers should aim to provide farmers with the opportunity to select seed of the varieties and species of their choice. Priority should be given to seed varieties that are already in local use so that farmers can apply their own quality criteria and to seeds that are favoured by local market conditions and demand.

**POSSIBLE ACTION**

Check whether the investee company:

- Provides a broad selection of seed varieties to clients, which permit farmers to grow crops using various production methods and in various conditions.
- Favours the supply of local seeds and seeds for crops during the upcoming season.
- Informs seed buyers, in particular smallholders, of contractual terms and legal obligations related to seed purchases.
- Informs customers of possible financial obligations if the reuse of seeds is not possible or is forbidden and also if additional inputs are required to support the particular seed variety for optimum production.
- If applicable, permits native seeds to be traded and shared between farmers.
- Takes into consideration the availability and costs of water and agrochemicals if increased use is required for certain seed varieties, while providing documentation for clients.

## E&S DUE DILIGENCE QUESTIONS CONTINUED

| <p><b>Q</b> HOW DOES THE INVESTEE COMPANY ENSURE THE PROPER MANAGEMENT OF GM SEED VARIETIES? (ONLY IF APPLICABLE)</p>  | <p><b>POSSIBLE ACTION</b></p>  |
|--|--|
| <p><b>RATIONALE</b><br/>GM seeds may benefit primary producers by potentially offering higher crop yield, greater tolerance to changing climatic conditions or resistance to pests. However, their use should only be supported where there is regulatory approval and adequate government oversight for the use of GMOs. GM seeds may be beneficial only when farmers have been properly trained on their use and are familiar with growing them. These seeds often have specific input requirements in terms of fertiliser, pesticides, water, etc., which must be understood. GM varieties are protected by intellectual property law; understanding the impact on farmers in the communities where GM seeds are used is necessary. Furthermore, GM species can be considered an alien or non-native species, posing a risk to become invasive, out-competing native species and reducing biodiversity. Of particular relevance is the handling and potential segregation of genetically modified products and GMO-free products.</p> | <p>Check whether:</p> <ul style="list-style-type: none"> <li>– The regulatory environment allows for the introduction of GM crops, provides guidance and is supported by public agencies to help manage changes or risks to the environment and ecosystem affiliated with the use of the GM crops.</li> <li>– A legal framework is in place that outlines the measures and steps to follow in case a new alien or GM seed species is intended to be introduced.</li> </ul> <p>Check whether the investee company:</p> <ul style="list-style-type: none"> <li>– Offers detailed information, in particular to smallholders, on growing GM seeds, including the required inputs and external conditions according to the seed varieties.</li> <li>– Informs primary producers about the E&amp;S risks of using GM seeds varieties, such as cross-pollination and additional input requirements/costs and offers training on potential mitigation measures to limit these risks.</li> <li>– Informs clients about the adequate handling and transportation of GM products in order to avoid contamination of non-GM products.</li> <li>– Informs clients of potential financial obligations and contractual terms, where farmers are obligated not to save, trade, exchange or reuse seeds.</li> <li>– Informs clients of potential export restrictions that might apply in their markets.</li> </ul> |

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### STEP 2 OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY

As outlined in the introduction (Section 1), E&S issues do not only present risks, but can also provide **opportunities to improve the business models of value chain actors**. This step helps investors to explore such opportunities with the investee company. The investor should work with the company to investigate how a holistic approach to value chain management could help it to identify value drivers that would provide further benefit.

As Step 2 would contain similar questions for most actors, this guidance element has been incorporated into a separate section: Section 4 (pages 47–49).

### STEP 3 OPTIONS TO BROADEN DEVELOPMENT OUTCOMES

This step highlights the **greater development opportunities** that may be achieved when the investor and the investee company address E&S risks and opportunities on a wider scale.

This step aims to help investors and investee companies to come up with solutions, whether immediately commercial or not, that will help to foster more inclusive economic development and improve livelihoods, while protecting natural resources and the environment.

### VALUE CREATION FOR PRIMARY PRODUCERS

- **Efficient use of inputs**  
Improved seed varieties and/or seeds of higher quality help primary producers, in particular small farmers, to achieve higher yields and quality, although this may go hand in hand with increased inputs and costs.
- **Water**  
Drought-resistant seeds provide an opportunity to overcome environmental constraints related to water scarcity and climate change, buffering yields in adverse conditions.
- **Fertiliser**  
Species offering increased yields may be more receptive to fertiliser and offer greater production returns.
- **Livelihood improvement**  
Crop failures owing to low seed quality can be reduced significantly where seed suppliers improve the availability of reliable, high-quality seeds. Less crop failure allows for better production and improvements in farmers' livelihoods.

- **Higher incomes**  
Crops with better yields, improved quality and growing season tolerance can help primary producers to gain better access to markets and to compete for higher prices. This in turn results in higher incomes and improved livelihoods for farmers.

- **Fostering adaptation to change**  
Offering seed varieties that are drought-tolerant, for example, enables output levels to be kept steady in spite of changing climatic conditions. Promoting the variety of species by selecting a diversity of seeds helps to improve the cropping system's resistance to physical and environmental changes, disease and changes in market demand.

### BENEFITS FOR THE COMMUNITY AND THE ENVIRONMENT

- **Positive developments**  
Rapidly growing populations require more food and improved food security. This can be accomplished only by improving farm efficiency. Providing quality seeds with characteristics best adapted to their given environments, while offering characteristics to overcome production constraints, offers an essential opportunity to improve food security on a large scale.
- **Promotion of biodiversity**  
The availability of a diverse range of seeds supports and encourages greater on-farm biodiversity. This in turn supports ecosystem services provided by the local environment, such as natural resistance to pests and resilience to climate change.

### USEFUL REFERENCES

- Guidance Note 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources;** IFC (2012); [http://www.ifc.org/wps/wcm/connect/a359a380498007e9a1b7f3336b93d75f/Updated\\_GN6-2012.pdf?MOD=AJPERES](http://www.ifc.org/wps/wcm/connect/a359a380498007e9a1b7f3336b93d75f/Updated_GN6-2012.pdf?MOD=AJPERES)
- Diversity of Experiences: Understanding Change in Crop and Seed Diversity;** FAO (2008); <http://www.ifc.org/wps/wcm/connect/077b7f004885533bae2cfe6a6515bb18/Final+-+Annual+Crop+Production.pdf?MOD=AJPERES>
- Environmental, Health and Safety Guidelines for Annual Crop Production;** IFC (2007); <http://www.ifc.org/wps/wcm/connect/077b7f004885533bae2cfe6a6515bb18/Final+-+Annual+Crop+Production.pdf?MOD=AJPERES>
- Understanding the Role of Seeds in Agriculture;** FAO; <http://www.fao.org/seeds/en/> and [http://www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/seed\\_sys/en/](http://www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/seed_sys/en/)
- Genetically Modified Crops;** FAO; <http://www.fao.org/docrep/015/i2490e/i2490e04d.pdf>

### 3.6 TRANSPORT AND STORAGE CAPACITY PROVIDERS

This **due diligence guide for transport and storage capacity providers** applies to companies or organisations that offer services or products for the storage of agricultural produce on- and off-farm. It also covers transportation providers that physically move agricultural produce further along the value chain from the primary producers, particularly from farm to market.

#### STEP 1 MANAGING E&S RISK IN THE VALUE CHAIN

This step helps investors to understand and minimise risks in the agricultural value chain. This guidance is intended to **complement the traditional scope of E&S due diligence** (as explained in Section 2). As this document primarily looks at the E&S risks and opportunities that occur through the investee company's relationships with other value chain actors, it is no substitute for due diligence of the investee company's own E&S practices.

**The most significant E&S issues** associated with the actor in question and/or the investor's ability to influence or leverage these via an investment are discussed below. Depending on the markets in which they operate, investee companies may be exposed to more or to fewer of these risks and potential areas of opportunity.

This is followed by **a set of the most important due diligence questions** that can help investors and investee companies to identify E&S risks in the value chain. In situations in which layers of intermediaries separate the investee company from primary producers, the questions would have to be adapted. This can be achieved by thinking about whether the investee company should aim to encourage the intermediaries to adopt practices that are important to the investee company.

#### E&S ISSUES IN THE VALUE CHAIN

##### – Production/post-harvest losses

Among other factors such as financial and managerial constraints, technical limitations in harvesting techniques and climate conditions, one of the most significant factors leading to post-harvest losses in developing countries is poor storage and transport infrastructure. Perishable agricultural goods are at greatest risk. Unreliable and inefficient transport and storage systems can lead to product spoilage or loss, additional warehousing or port payments and the need to maintain additional inventory. In the absence of on-farm or local storage, spoilage can occur even before the produce enters the transportation chain. The collection of produce can also

be severely limited by weather and seasonal conditions, especially if undeveloped rural roads are part of the transportation route.

##### – Product quality/safety

Conventional standards require that fruit and vegetables show no signs of bruising or wilting. However, product quality can be affected by inappropriate packaging, handling, transportation and storage. Poor transport networks, overfilling of containers, poor driving or inappropriate temperature and moisture levels can result in spoilage or alter the quality of the products. Monitoring compliance with requirements and attributes related to certification systems also becomes an increasingly difficult task where traceability systems are less than robust.

Depending on the business model in question – i.e. primary producer sells produce to transport company or hires transport services to move produce from field to market – the risks and costs of produce damage or loss occurring during transportation might be assumed by the transportation company, or by the farmer in the absence of insurance.

##### – Market access

Limited market access and poor-quality infrastructure are significant constraints on the commercialisation of agricultural products. Transportation costs are among the largest transaction costs in agriculture and are often largely absorbed by farmers. Lack of access to all-season rural roads, licensed commercial vehicles and adequate storage facilities results in substantial costs for transport services, limiting small farmers' access to wholesale markets as well as the length of their marketable production period. Small producers, especially women, are often excluded from higher-value domestic and export markets because they lack access to transportation, cold storage, processing facilities and the market information they need to commercialise their products. Additionally, storage capacity is essential to provide primary producers with more flexibility and power, allowing them to command higher market prices when demand rises.

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### E&S DUE DILIGENCE QUESTIONS

**Q** HOW DOES THE INVESTEE COMPANY MAKE SURE THAT IT PROVIDES THE PRIMARY PRODUCER WITH A SERVICE THAT IS EFFICIENT AND RELIABLE, WHILE GUARANTEEING THE COLLECTION AND DELIVERY OF PRODUCE?

#### RATIONALE

One of the most significant factors leading to post-harvest losses is delays in produce transportation and a lack of local or on-farm storage capacity. Perishable agricultural goods are at greatest risk. Where feasible, transportation companies should guarantee the efficient collection and delivery of produce from farm to markets or distributors. Vehicles must be roadworthy and suitable for their intended use, taking into consideration product characteristics and volumes. Factors that might affect the reliability of terrestrial transport services include road, traffic, vehicle roadworthiness and seasonal conditions. These components should thus be factored in when discussing the terms and conditions of the transport service. Product loss should be minimised and risks should not be passed on to primary producers in the form of lower market prices.

#### POSSIBLE ACTION

Check whether the investee company:

- Discusses with its clients the logistics of the service, taking into consideration road access and traffic conditions, climate, transit time and distance, queuing at delivery point and special requirements relating to product transportation and storage.
- Assesses and, where feasible, creates optimised routes for product collection and distribution, simulating route distance and delivery time.
- Determines how logistics networks can best be managed, taking into consideration the use of collection and/or distribution centres.
- Where feasible, offers insurance coverage to primary producers, particularly smallholders, for transported and stored goods and/or collaborates with traders and other downstream actors to insure goods.

## E&S DUE DILIGENCE QUESTIONS CONTINUED

**Q** HOW DOES THE INVESTEE COMPANY ENSURE THAT THE QUALITY, SAFETY AND SPECIFICATIONS OF THE PRODUCTS ARE MAINTAINED DURING TRANSPORTATION AND STORAGE?

### RATIONALE

Food production and distribution systems are becoming more interdependent, integrated and globalised. At the same time, escalating and heavily publicised outbreaks of food-borne diseases have raised awareness of the need to ensure the quality and safety of food. Correct handling, packaging, transport and storage conditions should be provided. This includes maintaining proper hygiene, temperature and moisture conditions for product containers. This can help to prevent the risk of chemical, biological and physical contamination. Respecting transport safety rules can also prevent produce spoilage, load crushing and product loss through accidents. Traceability is also an important component of food safety and quality regulations, management systems and certification processes. Robust traceability systems help not only to ensure food safety, but also to manage reputational and liability risks.

### POSSIBLE ACTION

Check whether the investee company:

- Follows standards and guidelines for proper hygiene and the safe handling of products during transportation, distribution and storage to help avoid contamination and cross-contamination.
- Complies with driving safety standards, including good vehicle maintenance, driver monitoring and supervision to avoid road accidents and subsequent product loss.
- Provides defensive driver training or other above-licence training on safe driving to drivers and transport employees.
- Provides drivers with a handbook on details relevant to company procedures, including vehicle checks and emergency provisions.
- Provides storage and packaging materials for optimum crop transportation.
- Has a traceability system in place (or plans to implement one) and collaborates closely with other relevant actors in the agricultural value chain towards optimum system implementation.

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**Q** HOW DOES THE INVESTEE COMPANY GUARANTEE A FAIR AND EFFICIENT SERVICE TO SMALLHOLDERS AND SMALL FARMERS? (ONLY IF APPLICABLE)

### RATIONALE

Transport infrastructure is of great relevance to smallholders, who tend to be geographically dispersed. The lack of quality infrastructure and efficient transport can therefore be a particular obstacle, making it difficult for them to obtain essential inputs and get their produce to markets. When smallholders do have access to transport services, the cost is often very high, limiting their competitiveness and ability to participate in agricultural value chains. Small-scale producers are at the greatest risk of significant post-harvest losses owing to the use of rudimentary storage facilities and limited access to reliable and efficient transportation systems. In the absence of product transportation, farmers carry most of the produce themselves, often resulting in limited loads and produce spoilage. Small-scale farmers may also lack the resources to comply with increasingly strict food safety standards, particularly traceability requirements. It is therefore important to integrate and empower small-scale agricultural producers in the food supply chain by giving them access to information and communication technologies. Access to the right information at the right time gives smallholders the capacity to make informed decisions that enable them to optimise their price negotiations and the way in which they place their produce on the market.

### POSSIBLE ACTION

Check whether the investee company:

- Offers fair and accessible prices as well as a transparent cost calculation for services.
- Provides good-quality, reliable and efficient transport and storage services, in other words, they do not take advantage of small-scale farmers by providing old vehicles or outdated containers.
- Provides adequate on-farm storage and encourages better on-farm storage practices and techniques.
- Supports the development of rural infrastructures, such as storage and packaging facilities and collection centres.
- In coordination with other value chain actors and stakeholders, works to develop strategies to promote optimum transport services in rural areas.
- Supports dissemination of/access to information (such as consumer and market preferences; typical prices and seasonal price patterns; names, addresses of key contacts, particularly buyers, agribusiness and traders) and communication technologies (e.g. mobile phones, which eliminate the need for middlemen and journeys to obtain information).

**STEP 2 OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY**

As outlined in the introduction (Section 1), E&S issues do not only present risks, but can also provide **opportunities to improve the business models of value chain actors**. This step helps investors to explore such opportunities with the investee company. The investor should work with the company to investigate how a holistic approach to value chain management could help it to identify value drivers that would provide further benefit.

As Step 2 would contain similar questions for most actors, this guidance element has been incorporated into a separate section: Section 4 (pages 47–49).

**STEP 3 OPTIONS TO BROADEN DEVELOPMENT OUTCOMES**

This step highlights the **greater development opportunities** that may be achieved when the investor and the investee company address E&S risks and opportunities on a wider scale.

This step aims to help investors and investee companies to come up with solutions, whether immediately commercial or not, that will help to foster more inclusive economic development and improve livelihoods, while protecting natural resources and the environment.

**VALUE CREATION FOR PRIMARY PRODUCERS**

– **Market inclusion**  
Improvements in transportation and storage systems can help primary producers, particularly smallholders, to access local, regional or even international markets. These improvements will also reduce post-harvest losses, resulting in more produce being available to commercialise and distribute in markets.

– **Higher incomes**  
The availability of road infrastructure, storage facilities and transport services in general encourages production. Access to markets with larger volumes/higher-quality products is then translated into higher incomes for primary producers. If transportation systems work effectively and transport costs are reduced, a higher proportion of the consumer price can be returned to the producer.

– **Livelihood improvements**  
Transport systems that are well planned and coordinated can help smallholders to make the transition from subsistence to small-scale commercial farming, thus improving their livelihoods. By facilitating communication and information exchange, efficient transport systems help to stimulate social integration and increase quality of life.

**BENEFITS FOR THE COMMUNITY AND THE ENVIRONMENT**

– **Improved access to food**  
Efficient and reliable transportation and storage systems are necessary to meet the food demands of a growing population. They might also enable food to be transferred from ‘surplus’ to ‘deficit’ areas. Given the scale and impact of losses and the financial/economic consequences, this is one of the most easily achieved measures for increasing food security and improving farmer livelihoods.

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**3.7 DOWNSTREAM ACTORS: TRADERS, PROCESSORS, PACKAGERS AND WHOLESALERS**

This **due diligence guide for downstream actors** applies to companies that purchase products directly from primary producers, via farmers’ organisations or co-operatives and act to aggregate, transform or trade the products to reach a particular market (i.e. traders, primary processors and wholesalers). This guide applies fully to this type of downstream actor.

The points to consider set out in this guide also apply to downstream actors who purchase commodities from primary producers indirectly, i.e. with one or more value chain links between the two. However, as the level of leverage over the performance of primary producers is dissipated by the presence of intermediary agents, this guide applies only partially to such downstream actors. An asterisk (\*) indicates the applicable questions and possible measures for such actors.

Downstream actors have been grouped together on the basis of the observation that the negative and positive effects they can have on other value chain actors, particularly on primary producers, are often comparable. In contrast to upstream actors, where a large variety of inputs have different E&S effects, there is only one output: the product of the primary producer that is purchased by the downstream actor. What will differ, however, is the level of influence a downstream actor can have on the business practices of primary producers. International traders, for example, may have some of the highest potential to influence the E&S performance of primary producers and create value.

**STEP 1 MANAGING E&S RISK IN THE VALUE CHAIN**

This step helps investors to understand and minimise risks in the agricultural value chain. This guidance is intended to **complement the traditional scope of E&S due diligence** (as explained in Section 2). As this document primarily looks at the E&S risks and opportunities that occur through the investee company’s relationships with other value chain actors, it is no substitute for due diligence of the investee company’s own E&S practices.

**The most significant E&S issues** associated with the actor in question and/or the investor’s ability to influence or leverage these via an investment are discussed below. Depending on the markets in which they operate, investee companies may be exposed to more or to fewer of these risks and potential areas of opportunity.

This is followed by **a set of the most important due diligence questions** that can help investors and investee companies to identify E&S risks in the value chain. In situations in which layers of intermediaries separate the investee company from primary producers, the questions would have to be adapted. This can be achieved by considering whether the investee company should aim to encourage the intermediaries to adopt practices that are important to the investee company.

**E&S ISSUES IN THE VALUE CHAIN**

– **Impacts on habitats and biodiversity**

As the global demand for food increases, higher trading demand encourages the expansion of production into areas of natural habitat and high biodiversity value. Deforestation and habitat conversion for agricultural activities is overwhelmingly the most significant cause of biodiversity and ecosystem loss associated with agro-commodity production. This risk is becoming more acute as agricultural demand increases due to the pressure to find more land suitable for farming. The fragmentation of natural landscapes reduces the habitat area available, creates greater disturbance within remaining habitats and makes species more vulnerable to local extinction.

– **Violation of core ILO conventions**

Trading in agricultural goods often capitalises on the lower costs of production in less developed countries. The comparative advantage of low-cost labour, particularly in markets where the corresponding laws and regulations may be poorly enforced, creates the risk of poor, dangerous and illegal practices and further generates reputational and market access risks for downstream actors. Unfair prices at the farm gate might encourage farmers to support the use of forced or child labour, or other illegal or unfair working conditions.

– **Insufficient incomes**

Despite being an essential part of the solution to meeting higher demand for food and soft commodities, wages for primary producers, particularly small farmers and smallholders, remain among the lowest anywhere in the economy. Farmers and workers rely on commodity production for the cash incomes they use to pay for food, school fees, health care and other living costs. In the absence of fair revenues for producers and living wages for agricultural workers, many farmers are trapped in a cycle of poverty. The problem of unfair wages and labour conditions is often even worse for contracted or sub-contracted farm workers.

– **Land acquisition/tenure**

Inadequate and insecure tenure rights are a significant and growing risk in the agribusiness sector and can result in increased vulnerability, malnutrition and poverty when access to land by local communities is reduced or removed. Tenure problems can arise because of weak legislation, poor tenure documentation and records, or corruption. Land laws may not recognise legitimate tenure rights, including informal and customary rights of local communities. This may result in the eviction of local communities without fair compensation, resulting in a loss of livelihoods.

– **Food security**

In some cases, the international acquisition and development of land for commercial (export) production can exacerbate food security risks for local communities by leaving only marginal land for domestic production. This is equally true when primary production is re-directed to non-food use, particularly biofuels.

– **Price volatility**

Commodity price volatility can greatly affect the livelihoods of primary producers, particularly in developing countries where profit margins may be small and the availability of working capital may be limited. By increasing downward price pressure along the agricultural value chain, price volatility often leaves primary producers shouldering the largest share of the burden of low commodity prices. This exposure to market price fluctuations and short-term shocks can encourage farmers to pursue risk-minimising strategies. Within this context, investment in production will be limited or reduced. This can have a significantly negative impact on income and cash flow generation.

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**E&S DUE DILIGENCE QUESTIONS**



**\*HOW DOES THE INVESTEE COMPANY PROMOTE GOOD MANAGEMENT OF ENVIRONMENTAL AND SOCIAL RISKS AMONG PRIMARY PRODUCERS AND OTHER UPSTREAM ACTORS?**

**RATIONALE**

Downstream enterprises should identify E&S risks to the best of their ability and use their due diligence processes to assess whether primary producers observe required standards. This applies in particular to labour practices and the effect on natural habitats and biodiversity. While traders may not commit violations of human rights directly, their purchases may support or enable these activities. Special attention should also be paid to cases in which land rights are unclear and in which large-scale commodity production threatens local food security.

Downstream actors may also participate in schemes that assess their suppliers' compliance with relevant standards, such as certification schemes and/or multi-stakeholder initiatives that address E&S issues associated with agricultural production. By establishing long-term relationships with suppliers, downstream actors can increase their leverage to encourage the adoption of higher standards and allow them to improve over time. For instance, small-scale farmers might have difficulty in immediately meeting higher standards and downstream enterprises can help to build their capacities to improve performance over time.

**POSSIBLE ACTION**

Check whether the investee company:

- \*Has adopted a procurement/sourcing policy that explicitly outlines its E&S requirements to its suppliers (e.g. supplier code of conduct).
- \*Conducts due diligence to investigate and document its value chain for violations concerning labour rights, child labour or corruption.
- \*Has undertaken due diligence on the sources of commodities, thereby assuring itself that primary production occurs on uncontested land. Particular risk factors are commodities derived from producers who are operating at scale (beyond smallholder), whose operations have begun within the past ten years, in locations where there is high population density and significant small-scale farming.
- \*Conducts due diligence to ensure that its products are not sourced from areas that have high conservation values, or where there is evidence of recent conversion of natural habitats.
- Verifies that sourced commodities do not threaten local food security.
- Works in partnership with other organisations or companies to ensure that their policies extend further through the value chain.
- Offers training or educational platforms on the E&S risks associated with a given supply chain, including fair labour practices and compliance with human rights standards.

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## E&S DUE DILIGENCE QUESTIONS CONTINUED

**Q** \*HOW DOES THE INVESTEE COMPANY PROMOTE TRANSPARENT SUPPLY CHAINS, SUPPORT CERTIFICATION SCHEMES AND ENCOURAGE TRACEABLE PRODUCTS?

### RATIONALE

Traders, wholesalers and retailers may participate in industry-wide schemes that help them to assess their suppliers' compliance with relevant standards, such as certification schemes and sector initiatives that address E&S issues. Increasingly, the traceability of food commodities is becoming important: it can help to reduce E&S impacts, to increase food safety, to support branding and marketing and to improve access to finance and investment, among others.

Certification with a voluntary agro-commodity standard is an important consideration for companies managing E&S risks in primary supply chains. Certification provides assurance that production, processing and trade comply with the standards. A production standard can be generic or crop-specific and sets out the performance requirements at the level of the plantation or farm. It typically consists of principles and criteria, with measurable and/or verifiable indicators. Chain of Custody (CoC) standards define a verifiable system of traceability and/or supply chain control for raw materials at each stage of the supply chain from initial production to the final product. CoC certification provides assurance at each stage that the material being sold conforms to the specific requirements. Production standards are applicable to growers and the CoC standard is applicable at every stage in the manufacture of a product, which may include mills, processors, traders and wholesalers, depending on the structure of the supply chain.

Bonsucro, the Roundtable on Responsible Soy, the Roundtable on Sustainable Palm Oil (RSPO), the Rainforest Alliance, Fairtrade and UTZ Certified are examples of crop-related certification schemes.

Helping primary producers and small-scale producers in particular to become certified can be a significant development role for downstream actors, as well as an increasingly important value driver for themselves; especially given emerging commitments in many OECD markets for certified product flow (e.g. Banking Environment Initiative (BEI) and Consumer Goods Forum (CGF)).

### POSSIBLE ACTION

Check whether the investee company:

- \*Is aware of/certified according to a relevant, credible and voluntary sustainability standard<sup>1</sup> that promotes good sustainability practices such as prevention of harmful child labour, forced labour, significant worker safety risks and land conversion or use of natural habitats leading to a loss of biodiversity.
- \*In the absence of certification or affiliation with agro-commodities multi-stakeholder initiatives, actors are encouraged to adopt practices mirroring such standards.
- \*Works together with other supply chain actors and stakeholders towards the adoption of higher E&S standards in primary production, as well as increased traceability.
- Works towards increasing the volume of certified products purchased from primary producers.
- Supports primary production/producers through outreach, technical assistance or other means of improving E&S performance.
- Verifies and monitors that its certified/traceable sourcing uses indicators to ensure that the quality of system performance improves steadily over time.

**Q** HOW DOES THE INVESTEE COMPANY WORK TO STRENGTHEN LOCAL COMMUNITIES AND MARKETS?

### RATIONALE

Downstream actors purchasing from primary producers have the opportunity to leverage wider community benefits, for example through improvements to infrastructure, post-harvest storage and broader technical assistance and livelihood programmes. These can deliver significant development benefits. However, caution is advised to prevent such activities becoming philanthropic corporate social responsibility initiatives, rather than a business-focused value driver.

### POSSIBLE ACTION

Check whether the investee company:

- Supports broader development programmes designed to share value and strengthen livelihoods within the local community, such as the development of local processing and manufacturing facilities.
- When creating local facilities, takes into consideration support for local needs, such as the provision of better sources of water.
- Provides education or technical training opportunities to increase local production capability.
- Supports fair commodity prices for smallholders at farm gate level.

**Q** HOW DOES THE INVESTEE COMPANY EXTEND MARKET INFORMATION TO THE PRIMARY PRODUCER?

### RATIONALE

Traders and downstream value chain purchasers can help to reduce price risk by providing farmers with information to make better cropping/selling decisions. This includes broadening market access and reducing asymmetries by sharing market information regarding prices, standards, product specifications, marketing channels, competitors and consumer preferences. Passing due diligence and other relevant E&S information from downstream to upstream enterprises can also increase transparency, facilitate traceability and market access, and improve supply chain fidelity.

### POSSIBLE ACTION

Check whether the investee company:

- Extends transparent information on market prices and demand to local primary producers, without discrimination.
- Works towards the development of innovative and appropriate market trend information systems for primary producers, in particular smallholders.

<sup>1</sup> A credible certification system would be one which is independent, cost-effective, based on objective and measurable performance standards and developed through consultation with relevant stakeholders, such as local people and communities, indigenous peoples and civil society organisations representing consumer, producer and conservation interests. Such a system has fair, transparent and independent decision-making procedures that avoid conflicts of interest (Source: IFC Performance Standard 6, 2012).

## E&amp;S DUE DILIGENCE QUESTIONS CONTINUED

**Q** HOW DOES THE INVESTEE COMPANY PROVIDE OR SUPPORT VALUE CHAIN FINANCE STRATEGIES FOR PRIMARY PRODUCERS?

**RATIONALE**

Many small-scale farmers remain in the unprofitable trap of low-investment and low-return production cycles owing, among other factors, to the lack of affordable and suitable financial services and a lack of access to reliable market information and improved inputs. In some cases, small-scale farmers borrow their working capital from other non-financial participants within the value chain, such as input suppliers, associations, buyers or traders (i.e. internal value chain finance). Traders and other downstream actors can provide either direct finance to value chain actors, including farmers, or guaranteed sales agreements that facilitate access to finance from third-party institutions. Traders can advance funds to producers to be repaid, usually in kind, at harvest time. This allows traders to secure sales and provides farmers with both necessary cash and a guaranteed buyer for their outputs. However, while borrowing from these sources may deliver substantial benefits in some situations, in others it can also present risks to farmers – and to the providers of financial products.

Under contract farming and out-grower schemes, farmers grow and deliver agricultural produce of a specified quantity and quality on an agreed date. In exchange, the company provides upfront inputs, such as credit, seeds, fertilisers, pesticides and technical advice, all of which may be charged against the final purchase price and agrees to buy the produce supplied, usually at a specified price.<sup>2</sup> The potential benefits that contract farming offers to small-scale farmers are well documented: access to reliable markets, access to credit, provision of inputs and production services, guaranteed and fixed price structures and others. However, there are also many negative aspects, such as the potential of trapping small-scale farmers in cycles of debt, their vulnerability to a sponsor's manipulation, an unequal bargaining position, loss of control over seeds, etc. Therefore, it is crucial that this type of arrangements is

set up under a business model that is economically viable and sustainable for all the parties involved. Contract farming arrangements should not undermine the cost structure, value proposition, or quality and safety of the product. Contracts should clearly detail the pricing mechanism that will be used and provide clear specifications of quality standards and the inputs provided so that farmers are protected from potential manipulation.

**POSSIBLE ACTION**

Check whether the investee company:

- If applicable and feasible, offers financial instruments to primary producers on terms and specifications that benefit all parties involved and do not undermine the economic viability of farmers, particularly of smallholders.
- Collaborates with farmers' organisations or other complementary services to develop improved financing methods that can profit all parties.

<sup>2</sup> Source: Land tenure issues in agricultural investment; IIED, FAO; [http://www.fao.org/fileadmin/templates/solaw/files/thematic\\_reports/TR\\_05B\\_web.pdf](http://www.fao.org/fileadmin/templates/solaw/files/thematic_reports/TR_05B_web.pdf)

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### STEP 2 OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY

As outlined in the introduction (Section 1), E&S issues do not only present risks, but can also provide **opportunities to improve the business models of value chain actors**. This step helps investors to explore such opportunities with the investee company. The investor should work with the company to investigate how a holistic approach to value chain management could help it to identify value drivers that would provide further benefits.

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### VALUE CREATION FOR PRIMARY PRODUCERS

#### – Market opportunities

Downstream actors provide a crucial link between producers and consumers. Traders, in particular, can exercise some of the greatest leverage to promote more integrated sustainable agricultural value chains. Through forward and backward integration in supply chains, traders can help primary producers, in particular smallholders, to access financial services, storage facilities and infrastructure and to meet increasingly demanding quality and certification standards and traceability requirements. If undertaken carefully and set up under a business model that is economically viable for the parties involved, contracts between downstream actors and primary producers can also help to reduce the risk to farmers by protecting them from price fluctuations and market shocks. Downstream actors can also support the dissemination of information regarding prices, standards, product quality, competitors and consumer preferences down the value chain. When this information is extended to primary producers, they can make better market-oriented decisions, such as which crops to grow and sell, best harvest timing, etc.

### BENEFITS FOR THE COMMUNITY AND THE ENVIRONMENT

#### – Promoting environmental sustainability

Sustainability attributes are now an increasingly important aspect of many traders' business models. By encouraging and supporting primary producers in their adoption of more stringent environmental standards during commodity production, downstream actors have significant leverage to promote the transition to more sustainable agricultural value chains. The mitigation of large-scale deforestation and proper management of land conversion practices can help to reduce biodiversity loss and environmental degradation.

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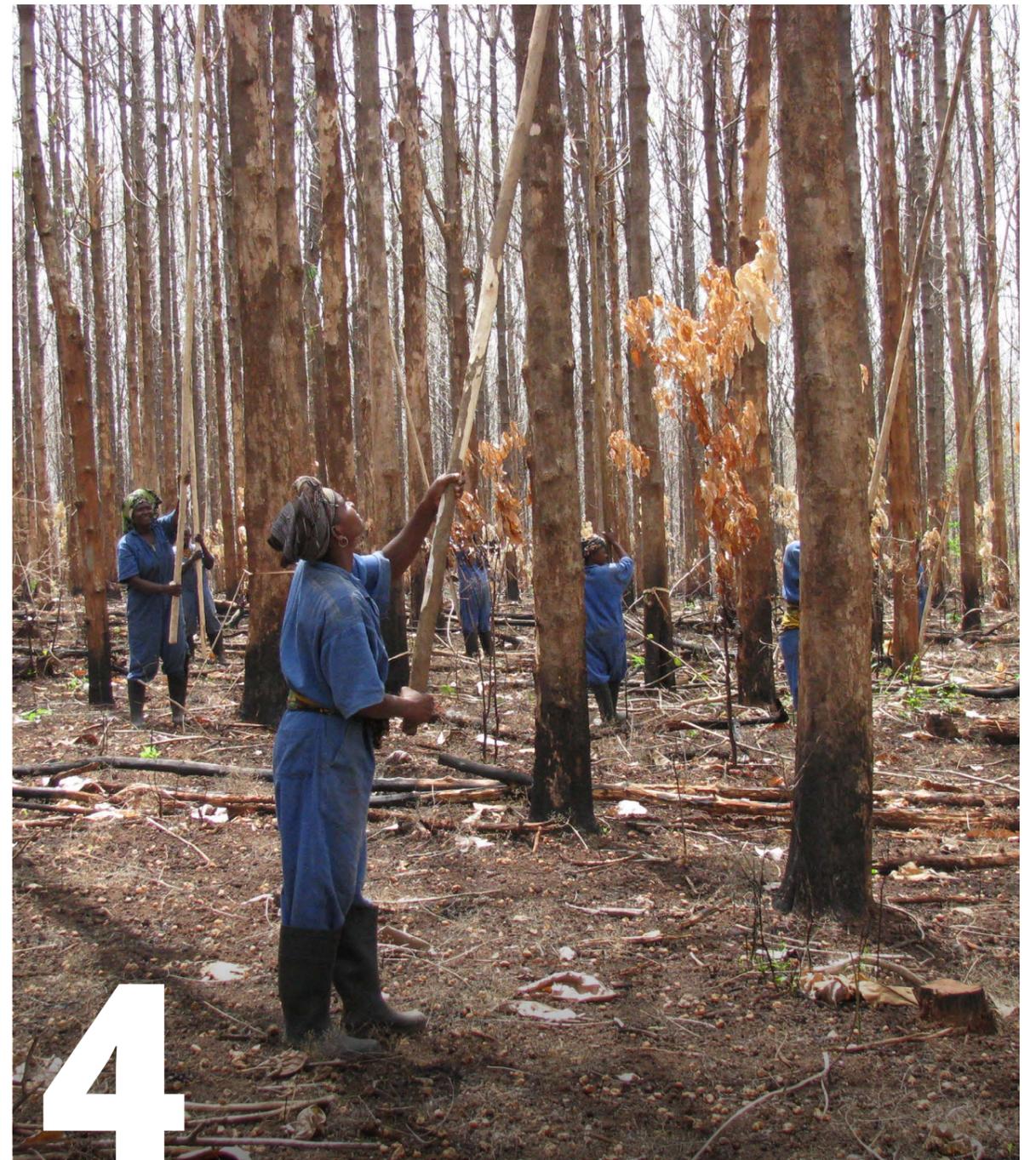
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**The Evolving Debate on Trade & Labour Standards;** International Organisation of Employers (2006); [https://www.wto.org/english/forums\\_e/ngo\\_e/posp63\\_ioe\\_e.pdf](https://www.wto.org/english/forums_e/ngo_e/posp63_ioe_e.pdf)



**OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY**

## OPTIONS TO CREATE VALUE FOR THE INVESTEE COMPANY

As outlined in the introduction, E&S issues do not only present risks, but can also provide opportunities to improve the business models of value chain actors and achieve broader development outcomes. In order for investors to capitalise on opportunities for value creation, it is important first to understand the E&S risks associated with the related value chains. Constraints on value chain actors do not always manifest themselves at the primary producer level. They can occur upstream, such as when a lack of input is encountered, or downstream, when reliable market access is in question. As value chain actors are interconnected by means of shared information, schedules, product quality assurances and transaction volume commitments, for example, investors, investee companies and other value chain actors benefit when they work together to overcome such constraints. Coordination and pre-planning are therefore required up and down the entire supply chain in order to promote more integrated and sustainable agricultural systems. A deeper understanding of the value chain will help to strengthen the relationship and interdependency between value chain actors by fostering trust and sharing information.

Adopting a holistic approach to value chain management can also help to ensure broader development outcomes, but first and foremost, it will offer an opportunity to identify value drivers and provide further benefit for the investee company. Once investors have a more complete understanding of the entire value chain, they will be better situated to conduct discussions with the investee company. This knowledge enables the investment to be customised. Investors can thus support the investee company by achieving greater inclusivity, improved knowledge sharing and trust building among the actors involved. Such measures will help the investee company to identify new business opportunities, create brand diversification, increase revenues, reduce transaction costs and mitigate risks. They will eventually enable the investee company to create a more profitable, sustainable business that will benefit both the investee company and the investor.

### Q HOW CAN THE INVESTEE COMPANY ENGAGE WITH OTHER VALUE CHAIN ACTORS TO IMPROVE OR SUPPLEMENT THE PRODUCTS AND SERVICES IT OFFERS?

#### POSSIBLE ACTION

Explore with the investee company how actions such as those described below could benefit the company:

- Engage with primary producers and other value chain actors to ensure that it provides them with the products and services that generate the most value.
- Provide information to educate primary producers and other value chain actors to help them improve their practices (irrigation methods, fertiliser techniques, etc.), while identifying new market opportunities.
- Demonstrate the benefits of the company's services and products, sharing better agricultural practices with primary producers under real-world conditions to ensure credibility.
- Build trust with primary producers and other value chain actors and refrain from business practices that undermine it.
- Collaborate with other value chain actors to ensure that primary producers are offered complementary products and/or services.
- Partner with development organisations, other value chain actors and organisations that have capacity-building capabilities (governmental or non-governmental organisations) to provide primary producers with technical assistance.
- Partner with farmers' organisations, such as co-operatives, to offer alternative financing methods and lower costs for primary producers, thus improving access to products and services.

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## USEFUL REFERENCES

**'The Business Case' section of the ESG Toolkit for Fund Managers;** CDC Group (2015); <http://toolkit.cdcgroup.com/the-business-case/>

**Part 2 'The Business Case for Managing E&S Risk In Agro-Commodity Supply Chains' of the 'Good Practice Handbook: Assessing and Managing Environmental and Social Risks in an Agro-Commodity Supply Chain';** International Finance Corporation (IFC) (2013); [http://www.ifc.org/wps/wcm/connect/topics\\_ext\\_content/ifc\\_external\\_corporate\\_site/ifc+sustainability/learning+and+adapting/knowledge+products/publications/publications\\_handbook\\_agrosupplychains](http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/learning+and+adapting/knowledge+products/publications/publications_handbook_agrosupplychains)

### Q HOW CAN THE INVESTEE COMPANY STRENGTHEN THE VALUE CHAIN AS A WHOLE?

#### POSSIBLE ACTION

Explore with the investee company how actions such as those described below could benefit the company:

- Engage with primary producers to identify and address constraints they face in the value chain.
- Engage with other value chain actors to encourage the development of infrastructure and farm upgrading.
- Help primary producers and other value chain actors to aggregate and cooperate to give them improved access to input providers, financial services and market channels to build capacity and negotiation power.
- Engage with primary producers and other value chain actors to build farmer-based organisations to help primary producers meet rising quality standards, traceability requirements and certifications and access new market opportunities.
- Engage with other actors along the value chain to provide coordinated advice to primary producers on the best combination of components for a cultivation system (irrigation, fertiliser, machinery, pesticides). Advice should be customised to the size and capacity of the users of their products (e.g. large scale/industrial vs. small scale/smallholders).
- Partner with other value chain actors to promote and support the development of reliable verification and traceability systems along the agricultural value chain.
- Partner with primary producers and other value chain actors to move away from products with diminishing demand by exploring alternative or value-added supply chains, varieties and products, so producers can access higher-value or export markets.



## GOOD PRACTICE MATERIALS

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### GOOD PRACTICE MATERIALS

The following is a compilation of short summaries of a number of industry initiatives, guidelines, reports and tools that provide further background information on issues covered in the good practice guidance material.

#### The Banking Environment Initiative (BEI) (2010)

Chief executives of some of the world's largest banks created the BEI in 2010. The BEI is convened by the University of Cambridge Institute for Sustainability Leadership (CISL), which provides the BEI's Secretariat. It was created with the mission of leading the banking industry to direct capital towards both environmentally and socially sustainable economic development. Working in partnership with its members' customer base, the BEI focuses on topics where industry-wide action is needed. Core to the BEI's work programme are work streams with groups of corporations to identify how banks can better support their needs on key sustainability topics. The following work streams are currently relevant in the context of agriculture:

- The BEI–CGF Soft Commodities Compact: An alliance with the consumer goods industry that aims to mobilise the banking industry as a whole to help transform soft commodity supply chains, thereby helping clients to achieve zero net deforestation by 2020.
- Sustainable Shipment Letter of Credit: The first tangible result of the Soft Commodities Compact, the Sustainable Shipment Letter of Credit is a financing solution that can be used by banks to incentivise the international trade of sustainably produced commodities.

[Read more →](#)

#### IFC Good Practice Handbook: Assessing and Managing Environmental and Social Risks in an Agro-Commodity Supply Chain (2013)

The Good Practice Handbook: Assessing and Managing Environmental and Social Risks in an Agro-Commodity Supply Chain was prepared by the Environment, Social and Governance Department of the International Finance Corporation (IFC), with some external contributions. Many companies are seeking to identify and manage E&S risks as part of their own responsible business practices in response to (or anticipation of) demands from their customers and financiers. This handbook shows how to identify and manage the following high risks in primary supply chains: hazardous/harmful child labour; forced labour; significant safety issues leading to life-threatening situations related to supply chain workers; and significant conversion of natural and/or critical habitats from primary suppliers. It focuses on the primary production stage and on five major agro-commodity supply chains – palm oil, soybean, sugarcane, coffee and cocoa – however, many of the tools, resources and case studies can be used as guidance for other agro-commodities.

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**Credit Suisse, CDC Group plc, EMPEA, IFC, WWF: Private Equity and Emerging Markets Agribusiness: Building Value Through Sustainability (2015)**

Aimed at emerging market private equity fund managers, this report outlines trends in private equity investment in agribusiness emerging markets. It promotes the adoption of E&S management systems to generate sustainable financial returns. E&S risks in primary production may reverberate through the value chain but if sustainability is factored in, agribusiness is seen as a growth opportunity around the world that can generate value to both investors and society.

[Read more →](#)

**EBG Capital: Responsible Investments in Agriculture: Overview of Private Sector-related Initiatives (2014)**

In order to achieve a wide range of developmental benefits, agricultural investments “need to be responsible and specifically directed towards the achievement of such benefits, while aiming at avoiding potentially negative consequences”. A broad range of initiatives have been established to address these needs. This document provides an overview and an assessment of the most relevant initiatives from the point of view of EBG Capital. The initiatives covered range from UN-related bodies (e.g. the Voluntary Guidelines on the Responsible Governance of Tenure) to mechanisms, standards and instruments (e.g. the Principles for Responsible Investment in Farmland) and to civil society-related initiatives (e.g. the Sustainable Trade Initiative (IDH)).

[Read more →](#)

**IFC Performance Standards on Environmental and Social Sustainability (2012)**

The eight IFC Performance Standards are standards for a number of E&S issues with which IFC clients have to comply. The Performance Standards provide guidance on identifying risks and impacts with the aim of helping clients to avoid, mitigate and manage these risks while enhancing development opportunities. The eight Performance Standards define benchmarks that the client has to meet throughout the life of an investment. The Performance Standards are accompanied by a set of Guidance Notes and an additional Interpretation Note on Financial Intermediaries. These additional documents provide guidance on the Performance Standards, including reference materials and good sustainability practices.

[Read more →](#)

**WWF: The 2050 Criteria: Guide to Responsible Investment in Agricultural, Forest, and Seafood Commodities (2012)**

Published by WWF in September 2012, the 2050 Criteria are a guide to responsible investment in agricultural, forestry and seafood commodities. The Guide serves as a tool and an entry point – including Key Performance Criteria – for investors to identify responsible players and projects. The 2050 Criteria provide a framework to identify responsible practices in key soft commodity sectors around the globe, including: aquaculture, beef, bioenergy, cotton, dairy, palm oil, soy, sugar, timber, pulp and paper, wild-caught fish and other terrestrial commodities. The 2050 Criteria should also be used as a tool for evaluating the procurement policies of downstream players (e.g. traders, processors and consumer brands).

[Read more →](#)

**CDC ESG Toolkit For Fund Managers (2015)**

Aimed at private equity fund managers in emerging markets, CDC provides a toolkit that is intended to be used as a practical building block for the development of an ESG management system and a reference guide for the assessment and management of ESG risks. It has a further role in helping managers to capitalise on investment opportunities. Last updated in June 2015, the toolkit is now web-enabled.

[Read more →](#)

**onValues: Responsible Investor’s Guide to Commodities: An Overview of Best Practices Across Commodity-exposed Asset Classes (2011)**

This document is the outcome of a multi-year project sponsored by the Swiss Federal Department of Foreign Affairs, the PRI and the Global Compact Secretariat. It proposes best practices that result from engagement with institutional investors and other stakeholders that are active across the spectrum of commodity investments. The report contains a special focus chapter on investments in agriculture and farmland that provides guidance on derivatives investments, farmland and company debt and equity.

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**The CFS Principles for Responsible Investment in Agriculture and Food Systems (CFS RAI) (2014)**

The CFS RAI were endorsed by the Committee on World Food Security (CFS) in October 2014. They are voluntary and non-binding and address all types of investment in agriculture and food systems. The Principles are intended to promote responsible investments in agriculture and food systems that enhance food security and support the right to adequate food. The phrase 'Agriculture and food systems' encompasses the entire agricultural value chain (production, processing, marketing, retail, consumption and disposal of goods).

[Read more →](#)

**The OECD Policy Framework for Investment in Agriculture (PFIA) (2014)**

The OECD PFIA is a flexible tool that helps governments to evaluate their investment policies in the ten areas essential to creating an attractive environment for investors and in enhancing the development benefits of agricultural investment. The PFIA supports host countries in evaluating and designing policies to mobilise private investment in agriculture and maximise its positive contribution to economic growth and sustainable development. Drawing on good practices from OECD and non-OECD countries, it proposes questions and guidance in ten policy areas identified as critically important for attracting agricultural investment.

[Read more →](#)

**The Principles for Responsible Agricultural Investment (PRAI) (2010)**

The PRAI were launched in 2010 by an Inter-Agency Working Group composed of IFAD, FAO, UNCTAD and the World Bank Group. The PRAI provide a framework to guide countries, corporations and other actors in the development of socially responsible agricultural investments. The Principles cover: land and resource rights (ownership and access); food security; consultation, participation and governance; and sustainability. The PRAI are designed to address the risk of large-scale investments along the agricultural value chain.

[Read more →](#)

**World Bank Group Environmental, Health and Safety Guidelines (2007)**

The World Bank Environmental, Health and Safety (EHS) Guidelines are a technical source of information containing general and industry-specific examples of Good International Industry Practice. They are used during project appraisal activities and may require the establishment of site-specific targets. Environmental, health and safety issues that may be applicable to all industries are covered in the General EHS Guidelines. They should be used together with the industry sector guideline(s) as applicable. These provide an overview of industry-specific impacts and management with regard to the environment, occupational health and safety and community health and safety. They also contain guidance on performance indicators and monitoring with regard to the environment and occupational health and safety.

[Read more →](#)

**The Global Map of Environmental & Social Risks in Agro-Commodity Production (GMAP) (2013)**

The GMAP is a database aligned to the 2012 IFC Performance Standards, which collects information on E&S risks for 150 country-commodity combinations (e.g. Brazil/soy, Ghana/cocoa, Vietnam/coffee) and assigns a colour-coded risk score (green/yellow/red). Launched in 2013 by the IFC, the GMAP tool is currently in its pilot phase. It helps users to conduct systematic, high-level E&S due diligence associated with trade finance and short-term finance. In the case of direct investments (project or corporate finance) or other non-trade/short-term trade finance investments through financial intermediaries, the GMAP can provide a first-level assessment of agro-commodity risks and can be used at the pre-appraisal stage in order to support and/or guide decisions regarding the scope of the appraisal.

[Read more →](#)

**World Bank and UNCTAD: The Practice of Responsible Investment Principles in Larger-Scale Agricultural Investments (2014)**

This report details the findings from a field-based survey on the conduct of agricultural operations at 39 large-scale, mature agribusiness investments in sub-Saharan Africa and Southeast Asia. The survey focused in particular on their approaches to social, economic and environmental responsibility. The report aims to provide knowledge of the approach, behaviour and experience of large-scale, mature agribusiness investments, their relationships with surrounding communities and the positive and/or negative impacts of the investments on these communities, host countries, other stakeholders and the investors themselves.

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**CDC Group plc**

123 Victoria Street,  
London,  
SW1E 6DE  
UK

**DEG**

Belvederestr 40  
50933  
Cologne  
Germany

**IFU**

Fredericiagade 27  
1310 Copenhagen K  
Denmark

**Norfund**

Stoperigata 2  
No-0250  
Oslo

**Sifem**

c/o Obviam DFI AG  
Bubenberplatz 11  
3011 Bern  
Switzerland