Private Sector Involvement in Integrated Landscape Initiatives

An exploration in the tropics

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March 29, 2019

Acknowledgements

I would like to thank my supervisors prof. dr. Marko Hekkert and Dorith Vermunt MSc. for their guidance and support during the course of my Master's Thesis. Their expertise, critical thought and passion inspired me to understand the subject on a deeper level, while learning to enjoy the academic research process.

Abstract

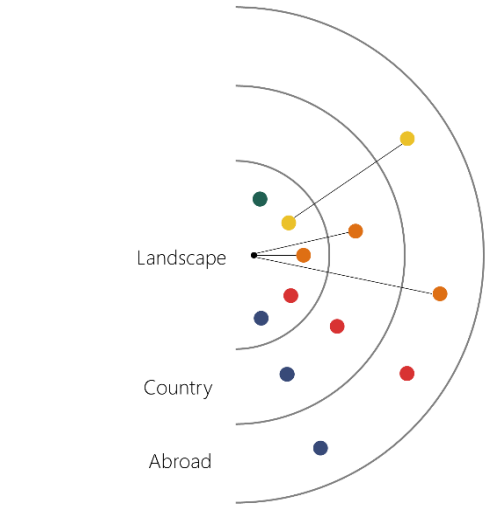
Recent years have witnessed increases in interest and research in integrated landscape initiatives (ILIs), focusing on contexts, motivations, design, participation and outcomes. In this context, the private sector is described as an important but absent actor. To explore the involvement of the private sector in integrated landscape initiatives, publicly available information was collected on 104 companies involved in 23 initiatives in the tropics. Two typologies were developed to provide conceptual clarity regarding private actors involved in ILIs and their activities. The results of this study suggest that for private actors providing financial support is the most frequently performed activity, followed by participating in governance structures (e.g. platforms and committees), and improving their business operations towards more sustainable ones regarding social, environmental and economic impact. This trend is visible for the following private actor types: commodity producing multinationals who are connected to the landscape through a production unit, commodity sourcing companies, service providers and other companies. However, this trend is not visible for commodity producing companies that are from the focal landscape. The latter company type most frequently improves their business operations, followed by participating in landscape projects external from business activities and, finally, providing financial support.

Executive summary

Integrated landscape initiatives (ILIs) are collaborations between organizations and individuals from different sectors, hierarchical levels and roles that are located in or connected to a landscape. These collaborations are aimed at solving interconnected problems in an integrated way, enabling synergies between environmental, social and economic processes at the level of the landscape and beyond. Although companies often have a large influence on the landscapes they are active in or sourcing from, the private sector is found to be underrepresented in this kind of collaborations. By many scholars and practitioners, this is considered a limitation to the effectiveness of ILIs.

In this research, 104 companies in 23 initiatives in the tropics was analysed to explore the involvement of the private sector in ILIs.

The findings show that most companies provide financial support, followed by participating in governance structures (like platforms and committees) and improving the business operations towards more sustainable ones. In this research, five types of companies were identified.



1 Commodity producing companies from the landscape

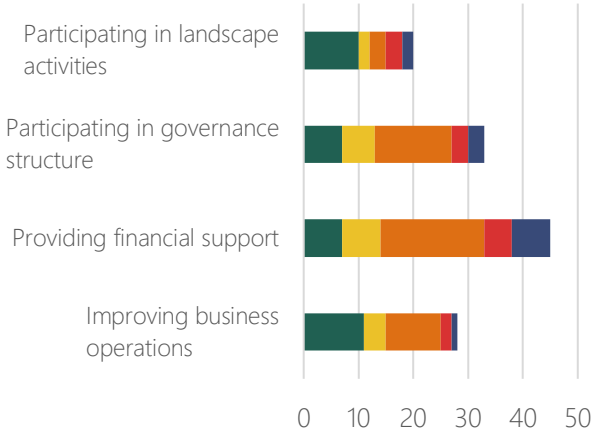
2 Commodity producing multinationals connected to the landscape

3 Commodity sourcing companies

4 Service providers

5 Other companies

When we consider these five types separately, we see that for commodity producing multinationals, who are connected to the landscape through a production unit, commodity sourcing companies, service providers and other companies, the most frequently performed activities in ILIs are similar. However, commodity producing companies that are from the landscape are an exception to this. They most frequently improve their business operations followed by participating in landscape projects external from their business activities and finally providing financial support.



Following from these findings, a number of recommendations for organizations that are working on (private sector involvement in) ILIs are formulated.

1 Private sector involvement as a source for sustainable funding

Although ILIs have been found to be cost-effective in solving integrated problems at a landscape scale, one of the main challenges to this promising type of collaboration is finding a sustainable source of funding. This limits the effectiveness of ILIs, which is considered a problem for all involved. The results of this research show that private actors predominantly provide financial support. Following from this, having a focus on increasing private sector involvement is not only expected to increase the effectiveness of the ILI because of increased stakeholder involvement, but also decreasing the problem of funding.

2 The role of the NGO in private sector involvement

This study also showed that companies often experience difficulties in assessing whether they should solve their problems individually or in an integrated way as is done in ILIs. Additionally, when they recognize the effectiveness of ILIs, companies experience difficulties with inter-company collaborations because of competition law. In this context, the NGO can play two roles that are important in involving companies in ILIs. The first is providing objective information on the importance of integrated solutions. This can be achieved by informing them on the advantages experienced by other companies, including:

- securing a strong market position by attracting new buyers,
- unlocking potential for (conservation) investment, mitigation reputation risk and maintaining customer loyalty,
- ensuring long-term supply and price stability in the face of climate change, and
- securing a licence to operate through engaging with multiple stakeholders.

Through this, the company can ensure that its activities are socially and legally accepted). Additionally, through co-financing, an NGO can diminish the risk of getting involved in a collaboration that is prone to free-riders and prisoner's dilemma's, for example through co-funding.

3 No one-size-fits-all solution to private sector involvement

Following from the types identified in this research, it has become apparent that companies influencing a landscape are not always present in that landscape. The five types all have a different connection to the landscapes that organizations related to conservation are aiming to protect. Therefore, it is important to consider that company types differ in their sphere of influence and drivers to get involved. In summary, concerning private sector involvement in ILIs no one-size-fits-all-solution solution exists.

Content

Acknowledgements 2

Abstract 2

Executive summary 3

Content 5

1 Introduction 7

2 Theory 10

2.1 The SES framework 10

2.2 Characterizing private actors involved in ILIs 11

2.3 Characterizing private actor involvement in ILIs 12

2.4 Conceptual model 13

3 Method 14

3.1 Data selection 14

3.2 Data collection 15

3.3 Operational variables 15

3.4 Data analysis 15

4 Data 16

4.1 The sources of ILIs 16

4.1.1 IDH 16

4.1.2 LPFN 16

4.1.3 Continent-wide studies of Africa and South and Southeast Asia 17

4.2 Initiatives 18

5 Results 19

5.1 Developed typology of private actors involved in ILIs 19

5.2 Developed typology of private actor activities in ILIs 21

5.3 The role of the private sector in ILIs 23

5.3.1 Commodity producing companies from the landscape 24

5.3.2 Commodity producing multinationals connected to the landscape 26

5.3.3 Commodity sourcing companies 28

5.3.4 Service providers 30

5.3.5 Other companies 31

6 Discussion 33
6.1 Implications 34
6.1.1 The importance of private and external actors 34
6.1.2 What drives private actors to get involved in ILIs? 34
6.2 Limitations 36
6.3 Directions for future research 36
References 38
Appendix I The first and second-tier variables of the SES framework 40
Appendix II Operationalization and scoring of research variables 41
Appendix III Developing typologies of private actors and their activities in ILIs 42
1 Development of relevant analysing dimensions 42
2 Grouping the cases and analysis of empirical regularities 42
2.1 Product and sector 42
2.2 Location and connection to landscape 44
2.3 Company size and international focus 44
2.4 Bottom-up analysis of activity descriptions 45
3 Analysis of meaningful relationships and type construction 46
4 Characterization of the constructed types 47
4.1 Commodity producing companies from the landscape 48
4.2 Commodity producing multinationals connected to the landscape 48
4.3 Commodity sourcing companies 48
4.4 Service providers 48
4.5 Other companies 49
4.6 Typology of private actor activities 49

1 Introduction

Landscapes are changing following increased societal demands for food, ecosystem services and energy (García-Martín, Bieling, Hart & Plieninger, 2016; Antrop, 2005; Dannenbeck, Hoppe, Küster & McCracken, 2009; Sayer et al., 2013). Due to the unprecedented speed of these changes ecosystem limits for land, water and natural resources are exceeded, threatening biodiversity and ecosystem services that are essential for life (Sayer et al., 2013; Seabrook, Mcalpine & Bowen, 2011). Conventional conservation methods have proven to be inadequate as their sectoral approaches, often focused on protected areas and other approaches that work against human activities, overlook the interconnected character of earlier mentioned challenges (Adams, Hodge, Macgregor & Sandbrook, 2016; Bouamrane et al., 2016; Lindenmayer & Franklin, 2002; Lindenmayer, Franklin & Fischer, 2006; Kennedy et al., 2016; Scherr, Shames & Friedman, 2012; Reed, Deakin & Sunderland, 2015; Reed, Vianen, Deakin, Barlow & Sunderland, 2016). In order to address these challenges effectively, a more integrated approach is necessary: an approach that taps into the shared interest of stakeholders that cross geographical and sectoral borders and enables synergies to arise between nature and biodiversity conservation, sustainable land use and sustainable livelihoods (Williams & Tai, 2016; Garcia et al., 2010; Adams et al., 2016; Harvey et al., 2008; Chazdon et al., 2009). The landscape is often the level at which ecosystem services function and conflicts between ecosystems and human activities arise (Milder, Hart, Dobie, Minai & Zaleski, 2014). It is also considered the scale at which these conflicts could be solved according to a large-scale integrated conservation and restoration approach that has been extensively researched in the last fifteen years. In this context, integrated landscape initiatives (ILIs) are considered "the best – if not the only – way to ensure that human needs are met, and conflict is mediated and mitigated" (Milder, Hart, Dobie, Minai & Zaleski, 2014). In particular, the tropics is one of the regions that requires such integrated solutions as these challenges are highly relevant here (Reed et al., 2016).

A range of concepts exists to describe and refer to ILIs, including climate-smart landscapes, sustainable landscapes, integrated landscape management and landscape approaches (Scherr et al., 2012; García-Martín et al., 2016). These concepts have a few characteristics in common: it is a highly participatory collaboration between actors of diverse sectors, levels and roles who are located or active in the landscape to come to a sustainable landscape where environmental, societal and economic attributes of the landscape are secured and, where possible, form synergies (Prager, 2012; Prager, Reed & Scott, 2012; Scherr et al., 2012; García-Martín et al., 2016; Zanzanaini et al., 2017). ILIs are therefore aimed at "minimizing or mitigating trade-offs among food production, biodiversity conservation, ecosystem service provision and poverty alleviation" (Estrada-Carmona, Hart, DeClerck, Harvey & Milder, 2014). ILIs can take on many forms, ranging from grassroots movements to initiatives initiated by governments (García-Martín et al., 2016).

In recent years, the number of studies around ILIs has been growing (García-Martín et al., 2016; Estrada-Carmona et al., 2014) following increased interest in this more integrated approach to challenges at landscape-scale. This is due to its cost-effective character and the positive relation this kind of integrated projects shows between the number of objectives, investments, participating stakeholder groups and positive environmental, societal and economic outcomes (Kennedy et al., 2016; Estrada-Carmona et al., 2014). Previous studies have especially been focusing on goals, success factors, challenges and stakeholder involvement in ILIs around the world, often categorized by continent. Milder et al. (2014) conducted a continent-wide study on ILIs in Africa, identifying ILIs as a way of integrating investment, economic development and mitigation of poverty and conflict, especially in rural landscapes where food security, energy production, economic development, ecosystem conservation and climate change meet (Milder et al., 2014). Estrada-Carmona et al. (2014) focused on the LAC region (Latin-America and the Caribbean), where sustainable agriculture was found to be higher valued than increased productivity and profitability and the impact on human wellbeing biodiversity was positive in about 50% of the initiatives included. Zanzanaini et al. (2017), who focused on ILIs in South and Southeast Asia found that the

participation of a stakeholder is associated with whether they provided financial resources to the ILIs. Stakeholders who are also donors are more than twice as likely to be involved in the design phase than other groups (e.g. women's associations) who were limited to the implementation phase of the ILI. Because of the slightly difference in focus in these studies, outcomes differ as well, causing the field of study to be fragmented (Milder et al., 2014). The same diversity can be found in involved stakeholders in ILIs around the world. Stakeholders most often involved in ILIs are local NGOs, civil associations, governments and universities, often from natural resources, environmental and conservation sectors with a mean of 6.4 stakeholders per initiative (García-Martín et al., 2016).

Something the studies on ILIs have in common is the absence or limited involvement of the private sector (Estrada-Carmona et al., 2014; García-Martín et al., 2016; Milder et al., 2014; Agrawala et al., 2011; Zanzanaini et al., 2017). This is considered a problem for multiple reasons. Firstly, one of the main challenges of ILIs is being financially sustainable, while private sector actors often possess the resources and capabilities to increase financial sustainability (Adams et al., 2016). Second, there is a trend of transferring conservation responsibilities from the government to the private sector and civil society (Adams et al., 2016), but the private sector has not taken up this responsibility, leaving a hole in necessary conservation efforts. Third, stakeholder inclusion is one of the prerequisites of a successful ILI and the private sector is considered influential in landscapes the landscapes they are located in and therefore essential for increasing ILIs effectiveness and market linkages (Scherr et al., 2012; Estrada-Carmona et al., 2014; Milder et al., 2014). Fourth, the least involved stakeholder groups include resource extracting businesses (Estrada-Carmona et al., 2014), who are also the ones having significant impact on landscapes: "business activities have been estimated to cause annual losses of $7.3 trillion ($ pertains to U.S. dollars) globally due to pollution and foregone ecosystem services (Kennedy et al., 2016). Lastly, private sector involvement in ILIs is not only essential for the effectiveness of the ILI, but also for the private actor itself. As Agrawala et al. (2011) argue: "[c]limate change will present businesses with a range of risks, which may significantly affect their business operations, their competitiveness, and their profits. Given that businesses face these risks, the rational self-interest of businesses should be a major driver of adaptation actions". Additionally, the Dutch Sustainable Trade Initiative (IDH) described involvement in ILIs as having multiple benefits for private actors. These include "securing a strong market position by attracting new buyers […], unlocking potential for investment (for example for conservation) […], mitigating reputation risk and maintaining customer loyalty by helping them meet sustainability pledges, ensuring long-term supply and price stability in the face of climate change and environmental degradation, and securing license to operate by using an inclusive approach and engaging with multiple stakeholders at various levels. This ensures a company's activities are both socially and legally accepted." (IDH, 2018). However, the incentive for private actors to address these kind of sustainability challenges are hindered by the fact that they often involve collective goods which are prone to free rider problems and prisoner's dilemmas (Geels, 2011). Summarizing, the absence of the private sector is considered a limitation to the effectiveness of ILIs and therefore a problem for all involved.

Despite the identification of this problem, little is known about what private sector involvement in ILIs looks like. The OECD (2016) defines the private sector as "[o]rganisations that engage in profit-seeking activities and have a majority private ownership (i.e. not owned or operated by a government). […] It excludes actors with a non-profit focus, such as private foundations and civil society organisations". The broad definition leads to inaudibility what is meant when discussing the private sector. Several studies focused on different parts of the private sector, including landholders (Moon & Cocklin, 2011), smallholders (Scherr et al., 2012; Markelova, Meinzen-Dick, Hellin & Dohrn, 2009; Garcia et al., 2010), large farmers (Agrawala et al., 2011) and producer groups (Milder et al., 2014). Following from this, there is a need for evidence on the involvement of the private sector in its broad sense to enable a structured and informed discussion about private sector involvement in ILIs.

Therefore, the aim of this research is to provide an answer to the following research question: What types of private actors are involved in ILIs and what activities do they perform in this context? It does so by exploring private actors and their activities in ILIs in the tropics.

The social-ecological systems (SES) framework of Ostrom (2009) was used to identify private actor characteristics including sector, product, socioeconomic attributes, location and leadership. Looking at a single actor in this system and beyond the borders of the landscape contributes to extending the use of this framework. Additionally, the identification of company types and their activities contributes to conceptual clarity in this field of research and consequently deepens the understanding of private sector involvement in ILIs. This research thereby builds on the continent-wide studies and answers to requests for further research in meta-analyses of larger sets of initiatives and thereby contributes to the limited knowledge of the role of the private sector (Estrada-Carmona et al., 2014; Scherr et al., 2017). Finally, the absence of the private sector is considered a limitation to the effectiveness of a promising conservation and restoration approach. Contributing to this field of research through increasing the understanding of private sector involvement in ILIs will, therefore, ultimately increase ILI effectiveness in the future, which is the social relevance of this research.

In the next chapter, the SES framework is described and, together with a division of roles of the private sector in development cooperation, used as the basis for a conceptual model. In chapter 3, the methods used in this research, including the development of two typologies of private actors and their activities in ILIs are explained. As the data used comes from three sources that to a certain extent have influence on the initiatives and private sector involvement, these sources and their influence are described in chapter 4. In chapter 5 the results are presented. First, the two developed typologies are presented and explained, after which they are combined to describe what type of private actors are involved in ILIs and what activities they perform. Finally, in chapter 6 the results are discussed, and future research directions are provided.

2 Theory

This section provides the theoretical framework that includes factors characterizing private actors and their role in ILIs. The SES framework forms the basis of the framework and is therefore explained extensively. Then, the framework is adjusted to fit the goals of this research. The most important adjustment is the addition of a set of roles developed by the OECD (2016) that functions as the starting point to explore the activities of private actors in ILIs. Both are explained below and, finally, summarized in a conceptual model.

2.1 The SES framework

The most developed framework to analyse complex systems where nature and humans collide is the social-ecological systems (SES) framework developed by Ostrom (2007). The interactions between human and natural components and its subsystems result in outcomes at the SES level (Ostrom, 2009). ILIs operate within these systems, and can be considered an active way, through collaboration, to increase the sustainability of an SES.

While every SES is unique, they do have characteristics in common. The SES framework identifies these characteristics, thereby forming a basis for describing and improving them (Hinkel, Cox, Schlüter, Binder & Falk, 2015). An important presumption is that humans can take rational decisions that influence (components of) the system, subsequently influencing the system outcomes (McGinnis & Ostrom, 2014). The SES framework, as shown in figure 1, aims at explaining actors' involvement in the sustainable management of landscapes, especially regarding one or multiple resources that are used by one or multiple users (Ostrom, 2007). The resource system (RS) and resource unit (RU) form the basis of the framework as they define "the kind of interdependence between actors that arise through interactions mediated via a biophysical system" (Anderies, Janssen & Ostrom, 2004). This biophysical system is formed by actors (A), governance systems (GS), the interactions (I) between them and their outcomes (O) (Ostrom, 2009). As the framework is a multitier system, these first-tier variables are further specified by second-, third-, and fourth-tier variables (Hinkel et al., 2015). Finally, related social, economic and political systems (S) and related ecosystems (ECO) describe external influences in the SES (McGinnis & Ostrom, 2014).

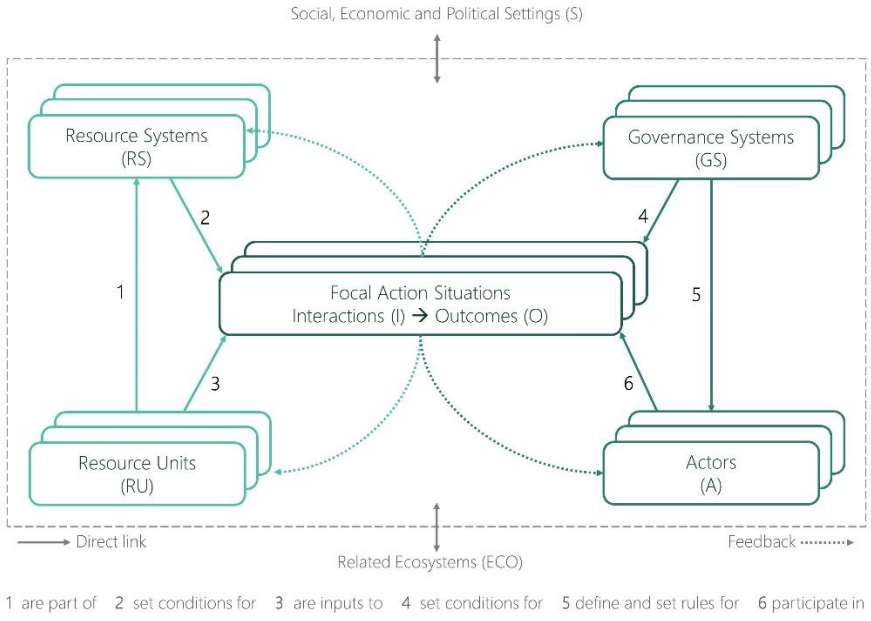


Figure 1 - The social-ecological systems framework (SES) (McGinnis & Ostrom, 2014).

The framework is the result of decades of research of Ostrom and many colleagues on collective action and self-governance of common-pool resources (Ostrom, 1969; Ostrom, 2007; Ostrom, 2009; McGinnis & Ostrom, 2014). The systemization provided by the framework enabled knowledge accumulation of studies within social and biophysical science (Ostrom, 2007). The first version, published in 2007, explained the concept of the framework (Ostrom, 2007) after which Ostrom defined ten variables that are associated with the sustainability of an SES (2009). An update on the framework, showed several important changes: the term 'users' changed into 'actors', which enabled actors that are not direct users or consumers of the resource to still be included and described in the SES analysis (Ostrom, 2014). This updated version also showed an interesting discussion on the applicability of the framework, which resulted in the conclusion that the framework can be used in more cases than initially thought. The application was not limited to one resource that was extracted by one group of users but was considered to be broader and also include whole systems that produce public goods and services (e.g. ecosystem services) that serve many people (McGinnis & Ostrom, 2014). In this research, the version of McGinnis & Ostrom (2014) is used, which was published two years after Ostrom passed away.

The SES framework provides a large number of (second- and third tier) variables that can be tested in a great variety of cases (for a list of all first and second tier variables, see Appendix I). However, the idea behind the framework is to enable the researcher to consider a broad range of variables before defining the specific factors applicable to a research (Nagendra & Ostrom, 2014). In this research, these variables are selected based on the starting point of considering a single actor, a private actor, within an SES.

2.2 Characterizing private actors involved in ILIs

Four variables from the SES framework are considered relevant for characterizing private actors involved in ILIs: sector (RS1), socioeconomic attributes (A2), location of actor (A4) and location of resource system (RS9).

While the first variable, *sector (RS1)*, is normally used to describe the resource system (as indicated by the abbreviation RS), here the variable is used to describe the sector in which the private actor is active. As private actors from several sectors can be active in the same ILI, using the variable in this way helps describing the activities of a single private actor in the landscape as opposed to summarizing all activities in the landscape into a single sector. A classification of sectors as defined by the International Labour Organization (ILO) is used to determine the sector. Additionally, the sector is described based on product and primary (extraction of raw materials), secondary (manufacturing) and tertiary (services) activities. The expectation is that there is a clear separation between private actors involved in resource extracting (i.e. primary) activities in the landscapes and service oriented (tertiary) activities outside the landscapes. The processing (secondary) activities are expected to occur at both locations. The variable *socioeconomic attributes (A2)* is used to describe company size of the private actors and is therefore further referred to as company size (A2). Di Bella, Grant, Kindornay and Tissot (2013) describe a relation between firm size and involvement in projects for development. Larger firms are often better-organized and experienced with project management which enables them to contribute to projects without a need for financial support. Small firms, on the other hand, do need financial support to be able to make changes in their activities and often have a more participating role (Di Bella et al., 2013). This relation is expected to occur in ILIs as well. *Location of actor (A4)* and *location of resource system (RS9)* are used to determine whether the private actor is located in the same place as the resource it is connected to (i.e. whether the head office of the private actor is located in the focal landscape). It thereby forms an additional variable, further referred to as *located in the landscape (X1)*. This is a deviation from the SES framework, as the SES framework aims to describe actors that are present in the resource system and the value adding activities (e.g. processing and commercializing) were considered exogenous to the focal SES (Marshall, 2015). However, these activities are increasingly integrated with the market economy, leading to significant interdependence between the activities performed in the SES and the activities leading to the products that are ultimately marketed or consumed

(Marshall, 2015). This deviation leads to the inclusion of private actors from the full value chain, which is defined as 'the full range of activities and services required to bring a product or service from its conception to its end use' (London & Anupindi, 2012). This addition is essential in order to include the whole range of private sector activities influencing landscapes. Especially since companies are increasingly influencing the production activities in the landscapes they source from to meet their consumers' demand for sustainable brands (Nidumolu, Prahalad & Rangaswami, 2009; Unilever, 2017).

2.3 Characterizing private actor involvement in ILIs

To characterize private actor involvement in ILIs, a classification of roles of the private sector in development cooperation is used (OECD, 2016), further referred to as *role (X3)*. This classification provides a comprehensive set of roles and descriptions, as shown in table 1. As ILIs aim at sustainable development of a landscape through collaboration, these roles are deemed relevant and appropriate to use in this research. However, as the existing literature might not be exhaustive, additional roles might emerge during the analysis.

Table 3 – Roles of the private sector in development cooperation.

The private actor is a(n)	
beneficiary	when the actor benefits from development co-operation activities in terms of an enabling business environment, financial support, capacity development, technical assistance, information provision and knowledge sharing.
implementer	when the actor implements new business models to realise development impacts in terms of social, economic or environmental sustainability.
reformer	when the actor reforms existing business approaches to be more development-friendly in terms of social, economic or environmental sustainability.
resource provider	when the actor invests financial resources, expertise or other strategic resources, which include donations and investments (financial and non-financial) in projects or initiatives that have a development objective.
participant	when the actor participates in development-related initiatives such as policy dialogue, knowledge sharing and multi-stakeholder initiatives.
target	when the actor is targeted by government, civil society, other private sector stakeholders or multilateral organisations to change its business practices.

As these roles are not mutually exclusive, private actors can perform several roles simultaneously within development collaboration (e.g. provide knowledge in a knowledge exchange platform while simultaneously providing financial support), which may change over time (OECD, 2016; Scherr et al., 2017). Regarding the role of resource provider, a distinction is made between financial and non-financial resources.

One final variable from the SES framework is used here: *Leadership (A5)*. This variable is used to describe whether private actors take leadership in (setting up) ILIs. Ostrom (2009) describes that the chances of collective action increase when someone with an entrepreneurial mindset, who is better able to take leadership, is present. As

private actors depend on their entrepreneurial mindset and managerial capabilities for success, private actors are expected to be involved early in the process.

2.4 Conceptual model

The above described variables used to characterize private actors and their activities are summarized into the conceptual model presented below (see figure 2).

Characterizing private actors		Characterizing private actor activities	
RS1	Sector	A5	Leadership
A2	Company size	*X3*	*Role* - *Beneficiary* - *Reformer* - *Resource provider* - *Participant* - *Target*
A4	Location		
X1	*Located in landscape*		
X2	*International activity*		

Figure 2 – Conceptual model in which the additional variables are written in *Italic*.

3 Method

In this research, publicly available data is collected through desk research in a database to recognize trends regarding private actors involved in ILIs and their activities. These trends are used for the development of a typology of private actors involved in ILIs activities and a typology of private actor activities in ILIs activities.

3.1 Data selection

As this research focuses specifically on private actors within ILIs, data is collected on private actors that match the following criteria:

- They are involved in an ILI 1) as defined in the introduction, 2) that has at least one goal regarding the conservation/restoration of the ecosystem/biodiversity or has positive outcomes on these matters, 3) is land-based (oceans excluded) and 4) is located in the tropics (see figure 3 for the geographical boundaries of the tropics used in this research).
- They (can) influence the focal landscape of the ILI, either by being in the landscape or through the value chain.
- Smallholders are excluded from this research.

Preliminary research showed difficulties finding many initiatives with private sector involvement, which complicated the use of a randomized sampling method. Therefore, projects that fit within these criteria were selected from multiple sources through a convenience sampling method, with the aim to include as many initiatives as possible.

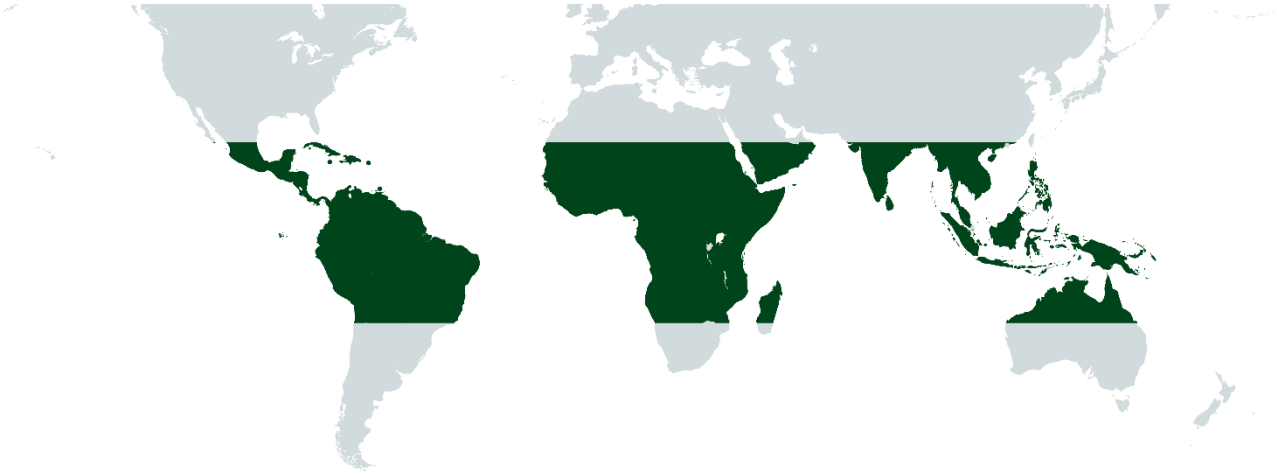


Figure 3 – Countries within the tropics (based on Edelman et al., 2014).

3.2 Data collection

The data was collected in a step-by-step manner. First, internet searches on 'integrated landscape initiatives' in combination with 'private sector involvement' and related terms lead to several main sources for initiatives. As the researched initiatives and their involved private actors are to a certain extent determined by these sources, a separate chapter is attributed to provide this context (see chapter 4). Subsequently, the initiatives were selected based on private sector involvement. Then, specific information on private actors and their activities was retrieved from initiative websites (when available) and company websites. The use of publicly available data was expected to maximize the amount of initiatives and private actors that could be studied within the time limits of this research.

This research used a cross-sectional research design, which means that information is provided on a phenomenon in a single point in time, includes multiple cases and is descriptive rather than explanatory and looking for causality (Mann, 2003). This research design was considered optimal as this research aims at contributing to conceptual clarity in a research field that is still very much in development.

As the data used in this research originates from a great variety of sources, the quality of the data may vary per case. The selection of information is of great importance for the value of this research and therefore a great responsibility of the researcher. Sources are therefore judged case by case. When possible, information from multiple sources (triangulation) is used in determining a score for a specific variable.

3.3 Operational variables

For every initiative, basic information regarding the name, goals and first (and when applicable, last) year of collaboration is described, followed by the variables described in the theory section. As the information is transformed from text into a score, an operationalization scheme and scoring system was developed (see Appendix II).

3.4 Data analysis

After the database was completed, the data was analysed in a descriptive manner. Because of the limited sample size, the found trends are not generalizable. The analysis resulted in discovering patterns which led to the development of two typologies: a typology of private actors and a typology of private actor activities. This process was based on the four-step model of empirically grounded type construction of Kluge (2000). Typologies are constructed "to comprehend, understand and explain complex social realities as far as possible" (Kluge, 2000). By this definition, a typology is the result of an iterative grouping process wherein attributes are combined into types. This grouping process aims to reduce the number of groups that are theoretically conceivable based on the possible combination of attributes into a few relevant types. The step-by-step construction of the typologies is provided in Appendix III.

4 Data

In this section, the sources of ILIs and their involved companies are described. Additionally, a general description of the ILIs included in the sample is provided.

4.1 The sources of ILIs

The initiatives and their involved companies included in this research come from four sources. The first source is a collection of landscapes of IDH. The second source is a database constructed by Landscapes for People, Food and Nature (LPFN). The final two sources are continent-wide studies of ILIs in Africa (Milder et al., 2014) and South and Southeast Asia (Zanzanaini et al., 2017). Describing these sources serves to provide a frame of reference to these initiatives. Also, it aims to explain the influence of IDH and LPFN on the ILIs and private sector involvement. The sources provided a total of 104 companies in twenty-three ILIs (see figure 4).

4.1.1 IDH

IDH, the Sustainable Trade Initiative, is an initiative working on inclusive business models, smallholder farmers' livelihood improvements, mitigation of deforestation, living wage and improved working conditions, responsible agrochemical management and gender equality and empowerment. They especially focus on developing sustainable supply chains for commodities from the tropics including coffee, cotton and cocoa. To attain these objectives, IDH convenes companies, CSO, governments and other organizations into public-private partnerships in which they act as a neutral partner. They also co-finance projects with the private sector, for which they receive money from several donors (Dutch Ministry of Foreign Affairs, SECO, DANIDA, the Bill and Melinda Gates Foundation) and on a programme-level from foundations of companies. In 2014 they started integrating independent projects into holistic landscape-wide initiatives, using their Production, Protection and Inclusion approach. Here, they aim to combine increased sustainable production, forest conservation and livelihoods of farmers and communities depending on these forests. They state that shared dependency on a landscape and its resources demands for shared solutions. Because of their high effort for private sector inclusion, this source provided a relatively high number of seventy-two companies that are or have been active in eleven initiatives. IDH provides extensive information on their website and in the project updates of 2016 and 2017. Next to using the information provided by IDH, additional information was collected through an interview with an IDH representative and company websites. (IDH, personal communication, November 23, 2018)

4.1.2 LPFN

The Landscapes for People, Food and Nature (LPFN) Initiative is a coalition of more than seventy agriculture, environment and development organizations focused on knowledge sharing, dialogue and action for integrated landscape management. These activities are aimed at improved food production, ecosystem conservation and sustainable livelihoods. Additionally, they aim to show that integrated landscape management can solve problems that are often connected in a more effective and efficient way than with single-objective strategies. They describe integrated landscape management as a "long-term collaboration among different groups of land managers and stakeholders to achieve their multiple objectives and expectations within the landscape for local livelihoods, health and well-being" (LPFN, n.d.-a). Within their activities, there is no specific focus on involvement of the private sector. This source provided seventeen additional companies that are or have been active in seven

initiatives. As part of their knowledge sharing activities, they provide a landscape map with initiatives and descriptions on their website (LPFN, n.d.-b). The information for these descriptions is provided by representatives of the initiatives through filling in a questionnaire. This information is also included as a source to this study, combined with additional information from company websites and initiative websites when available.

4.1.3 Continent-wide studies of Africa and South and Southeast Asia

Two scientific studies on integrated ILIs in Africa (Milder et al., 2014) and South and Southeast Asia (Zanzanaini et al., 2017) served as a third source of ILIs. The definition of ILIs as stated in the introduction derives from these studies. Scanning the geospatial data and a list of initiatives provided by Zanzanaini et al. (2017) and Milder et al. (2014) respectively, led to the discovery of ten additional companies from five initiatives.

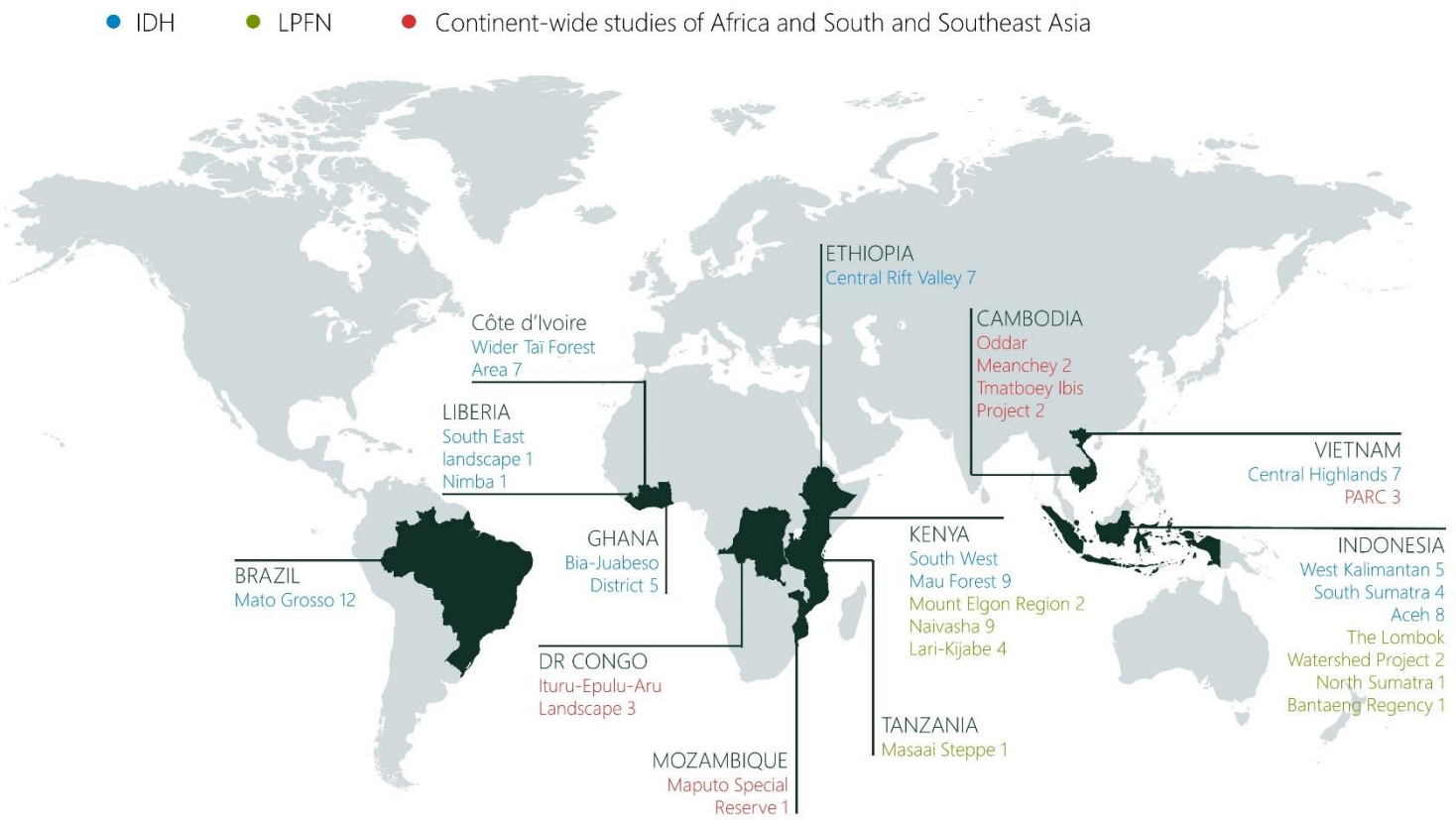


Figure 4 – Location and name of landscapes/ILIs including number of companies per initiative and its source.

4.2 Initiatives

The companies that are analysed in this research are or have been active in ILIs in Africa, Asia and Latin America (see figure 4 for the number of companies per initiative). The average size of the landscapes is a little over seven million hectares. However, sizes vary from eleven thousand hectares to ninety million hectares. Ten out of twenty-three initiatives are still operational today. The lifespan varies from three to thirty years. The most frequently mentioned ILI objectives are forest conservation and/or restoration (28%), improving livelihoods (17%), biodiversity protection (15%) and sustainable production (13%). The remaining goals are focused on peatland conservation/restoration, water flow/use, sustainable energy use, climate resilience, community development, land-use planning and food security. Alongside private actors, other actors who are often involved in ILIs include 1) governmental institutions, 2) non-governmental organizations and 3) smallholders. The first actor was involved in nineteen of the twenty-three initiatives. Through the development of laws and regulations, they can enable the private sector to change their practices (IDH, personal communication, November 23, 2019). The second actor was involved in all initiatives, and in some initiatives even multiple NGOs were involved. As neutral actors, NGOs often function as intermediaries between several actors or take away part of the risk for the private sector, thereby increasing private sector involvement (IDH, personal communication, November 23, 2018). The final actor is an actor at whom a large part of the activities is aimed to reduce the impact of their commodity producing activities on the environment and biodiversity in the landscape. Despite their impact, they often do not have the autonomy (because of product requirements of a buyer) or monetary resources to make necessary changes and are often targeted by other actors.

5 Results

In this section, the proposed typologies of private actors involved in ILIs and their activities are presented. These typologies are the result of an iterative process as described in the method section and performed in Appendix III. The typologies contribute to the research field of ILIs, mainly by providing conceptual clarity regarding private actor involvement. After the presentation of the typologies, the combination is made to describe trends in private sector involvement in ILIs. These trends are explained by means of examples deriving from the research sample.

5.1 Developed typology of private actors involved in ILIs

In this study, five types of companies have been identified based on 1) their connection to the focal landscape, 2) the sector they are active in and 3) their international activities. Two additional distinctive factors that resulted from the typology development process are 4) their connection to the commodities produced in the focal landscape and 5) their type of influence in the landscape. A visual representation of the private actor types is provided in figure 5, alongside their distinctive factors which are summarized in table 4.

The first identified type is commodity producing companies from the landscape. These companies have their head office in the landscape where the initiative takes place. This is often their only business unit. However, in some cases, companies with several business units occur within the same country. They can have a national or international focus. Examples of produced and/or processed commodities are palm oil, tea, wood, energy and basic metals. As the production of commodities is often labour-intensive work, the companies in this category are likely to be medium to large. The second type is commodity producing multinationals, who are connected to the landscape through a production unit. They produce (and possibly process and commercialize) commodities. Through their head office abroad and the downstream steps in the supply chain they might own, they perform supply chain and international influence in the landscape. This means that decisions taken abroad impact the actors' activities and presence in the focal landscape. The third type is commodity sourcing companies, who source commodities from the focal landscape and then process (and possibly commercialize) them or they source final products which they then commercialize. As they can formulate commodity/product requirements, they exercise supply chain influence in the landscape. The fourth type is service providers, who are connected to the landscape because they provide services related to commodities or ILIs (e.g. professional, financial, legal and technical services). Through their services, they exercise (international) influence in the landscape. To prevent that actors who are involved in ILIs but have no connection to the commodity are omitted, a fifth type was created to include as many actors a possible and provide a complete perspective. This fifth type is therefore defined as other companies. These companies support the initiative and thereby influence the landscape, driven by a desire to contribute to the good cause of the landscape initiative.

Figure 5 – Private actor types visually represented by their embeddedness in the landscape.

Table 4 – Distinctive factors of the five private actor types.

	Connection to commodity	Located in landscape	Sector *	International activity	Supply chain influence/ international influence in landscape
1	Producing (processing and commercializing) the commodity	Yes	1 (1.1 & 1.3), 4 (4.3), 6 (6.1) Primary, supply chain integration possible	*Irrelevant*	No
2	Producing (processing and commercializing) the commodity	Connected to landscape through production unit	1 (1.1 & 1.3), 4 (4.3), 6 (6.1) Primary, supply chain integration possible	Multinational	Supply chain/ international influence
3	Sourcing the commodity	*Irrelevant*	1 (1.1, 1.2), 5 (5.1) Secondary, tertiary possible	*Irrelevant*	Supply chain influence
4	Providing knowledge on the commodity	*Irrelevant*	5 (5.2), 3 (3.1) Secondary	*Irrelevant*	(International) influence
5	No connection to the commodity	*Irrelevant*	*Irrelevant*	*Irrelevant*	(International) influence

* These number correspond to the sector classification of the ILO as provided in the operationalization table in Appendix II.

5.2 Developed typology of private actor activities in ILIs

The analysis of company activities in the researched ILIs has led to a typology specifying the role of private actors in ILIs. In this section the extended model for the typology of private actor involvement in ILIs is presented and explained (see table 5).

Table 5 – Roles and activities of private actors in ILIs.

Beneficiary	*Receiving financial support*	for activities in the landscape (e.g. improving business operations, implementing plans and programs).
	Receiving knowledge	from other companies on field-level experiences. Takes place between private actors in pre-competitive platforms or other actors in a landscape initiative. Contributes to the learning aspect of ILIs.
	Being contracted	for their expertise (e.g. on certification schemes or carbon credits) or other abilities (e.g. construction).
	Enabled business environment	through improvement in current business environment (e.g. increased security or sustainability of its supply chain) or emerging business environment (e.g. tourism companies or companies exploiting the added value of more sustainable business operations).
Reformer	*Improving business operations*	towards more sustainable business models in terms of social, economic and environmental impact inside or outside company grounds. Often referred to as 'responsible', 'sustainable' or 'best production practices'. Also includes complying with specific certification schemes.
	Preparing to improve business operations	by showing interest in improving business operations in the future or by developing plans.
	Modifying land use	by attributing part of their land to set-aside areas for forest conservation, biodiversity (e.g. wildlife corridor), reforestation (e.g. tree nursery), or local community development projects.
Resource provider	*Providing financial support*	for specific causes (e.g. forest/biodiversity protection, research, community development projects, improved production methods and certification procedures), or for the project in general (the money is then attributed to specific causes by another landscape actor). Financial resources can be provided at once, as regular contributions or as a part of the company's benefits.
	Preparing to provide financial support	through developing plans, de-risking deals or business cases.
	Providing knowledge	from their field of expertise (e.g. construction, certification requirements and legal advice), training or through conducting research (e.g. impact and census research). Other than the contracted companies, these companies provide their services without being financially rewarded for it.
	Providing materials	to other actors in the landscape initiative, most likely to farmers whom they provide with agro-inputs or technical solutions. This can be their supplying farmers, or farmers that are not connected to the company.
Participant	*Leadership*	by initiating collective action or providing initiative leadership.
	Participating in governance structure	with clear members and interaction between them (e.g. responsibilities and regular meetings).
	Participating in pre-governance activities	like discussions and dialogues on landscape-related subjects, or companies showing interest in future participation in a governance structure.
	Participating in external landscape projects	that are separate from business operations, like (often project based) reforestation, forest and biodiversity protection and local community development activities.
Target	Companies at whom the initiative is targeted and that execute activities in the landscape. This role has no underlying activities.	

This extended typology presents several additions to the model of the role of the private sector in development cooperation (OECD, 2016), which are explained here. Being contracted is the first addition. It was added because, in contrast to the other companies, these companies are contracted to provide their services and not because they want to or must make a change in the landscape. The activity enabled business environment is included in a more specified form: it includes both the improvement of the business environment of a company and the emergence of a business environment. The latter was added because several companies emerged from the ILIs. It was considered to best fit in this category because the landscape initiative enabled the business environment to be created. Throughout the typology, several activities were added that include the preparation of an actual activity. These were added because it was frequently mentioned and indicates the willingness and first steps towards performing an activity in the future. Despite the absence of on-the-ground action at this moment, the collective acknowledgement of a need for action and carefully preparing measures can be considered a victory in itself in the context of ILIs (IDH, personal communication, November 23, 2018). The role of participant was specified into four underlying activities which indicate the level of involvement in the ILI. In this research, companies were selected based on their involvement in an ILI. Therefore, this role would otherwise not be informative as it would count for all companies. Providing leadership is considered the activity that asks the highest level of involvement of a company because of its need for proactivity. However, performing this activity does not come natural to companies for two reasons. The first being that, to be able to bring about real changes in the sector, extensive collaboration is necessary. As a company, however, collaboration with competitors can be complicated due to competition law. The second reason is that being a company always generates "some kind of suspicion" when it comes to interaction with governments and local communities because of the assumption that companies solely act out of self-interest (IDH, personal communication, November 23, 2018). Therefore, companies often wait for a neutral party like a government or non-governmental organization to take initiative, or they explicitly ask these neutral organizations to start a landscape initiative since they are able to facilitate the required pre-competitive collaboration. As a result, this activity might be executed more often than it appears in the documentation around ILIs. The pre-governance activities indicate a lower level involvement than the governance structure. The final activity in this role, external landscape projects, was added because these are often project-based elements within a landscape initiative. In some cases, companies are only involved in one of these projects. This is a way of distinguishing these companies from companies who are involved for a longer period. The role of target, although this role has no underlying activities, was still included as it provides a clear distinction between companies at which the activities are aimed at and the other companies and will be linked to the activities they perform in the landscape. Activities that were described too vaguely like 'supporting', 'scaling-up' and 'promoting' where excluded from this research.

5.3 The role of the private sector in ILIs

Now that the private actor typology and the typology of private actor activities have been described, the combination is made to describe what type of companies perform which activities. This results in the distribution as provided in table 6. In the rest of this section, the three most frequently performed activities are described per private actor type, accompanied by examples from the research sample.

Table 6 – Activities performed by the five private actor types

These values are calculated by dividing the number of companies that performed an activity by the total amount of companies from that type. As companies often perform multiple activities, the sum of the percentages per private actor type does not equal 100%. The absolute number of each of the company types, roles and activities are presented between brackets.

			Type 1 Commodity producing companies from the landscape (26)	Type 2 Commodity producing multinationals connected to the landscape (12)	Type 3 Commodity sourcing companies (38)	Type 4 Service providers (18)	Type 5 Other companies (9)
Role	*Activity*						
Beneficiary (16)	*Receiving financial support*	(3)			5.3	5.6	
	Receiving knowledge	(5)			10.5		
	Being contracted	(3)				16.7	
	Enabled business environment	(5)			10.5		22.2
Reformer (46)	*Improving business operations*	(28)	42.3	33.3	26.3	11.1	11.1
	Preparing to improve business operations	(13)	19.2	16.7	15.8		
	Modifying land use	(5)	15.4		2.6		
Resource provider (64)	*Providing financial support*	(45)	26.9	58.3	50.0	27.8	77.8
	Preparing to provide financial support	(8)	7.7		7.9	16.7	
	Providing knowledge	(10)	7.7		13.2	16.7	
	Providing materials	(1)			2.6		
Participant (69)	*Leadership*	(6)		16.7	5.3	11.1	
	Participating in governance structure	(33)	26.9	50.0	36.8	16.7	33.3
	Participating in pre-governance activities	(10)	7.7	25.0	13.2		
	Participating in external landscape projects	(20)	38.5	16.7	7.9	16.7	22.2
Target (38)							

5.3.1 Commodity producing companies from the landscape

Twenty-six companies fall within this category including companies from Indonesia, Kenya, Ethiopia, Vietnam, Brazil, Liberia, Côte d'Ivoire, Congo and Ethiopia (the countries where the ILIs take place). They mostly have a national focus (58%) but there are also some companies with an international focus (23%). Most of these companies are solely focused on the production of commodities (50%). These include palm oil, forestry, tobacco and beef companies. 43% of the companies show supply chain integration through taking responsibility of the processing of the commodities as well. These include companies producing and processing flowers, palm oil, wood, beef and tea. There was one company showing full supply chain integration: an Ethiopian fruits and vegetables company who also processes and sells their own produce. The size of these companies ranges from small to large, although the majority is medium to large (50%). As described earlier, all commodity producing companies from the landscape are a target of that ILI.

Figure 6 – Activities performed by commodity producing companies from the landscape, from most frequently (dark green) to least frequently (light green) performed activity.

Improving a company's business operations is one of the many ways in which the sustainability of a landscape can be increased. They can be improved from within, or with help from other actors. From the 27 companies in this category, 11 companies *improved their business operations* and it is therefore the most performed activity by this private actor type. These include several medium to large palm oil companies, who improve by implementing a Fire-Free Village toolkit or complying with RSPO standards and Brazilian beef companies who commit to responsible production and intensify their cattle production. One of these Brazilian beef companies even extends these activities to outside their own farmland to increase the number of 'responsible' farms they can source from, as a way of preparing for increased demand for traceable and deforestation-free beef in the future. Other commodity producing companies from the landscape improved their business operations through sustainable timber production, forest and wildlife management on their concession. For example, this was done by a Congolese wood products company and an Ethiopian rose farm who now uses integrated pest management, waste water treatment and recycles of artificial wetlands.

The second most executed activity by this group is *external landscape projects*. For the commodity producing companies who are from the landscape this can hold several things. One of them is contributing to forest protection of part of a reserve or forest block adjacent to the company's concession. Additionally, they help with reforestation activities or help by participating in surveillance activities or building tracks for surveillance. For example, the latter activity was performed by an Indonesian palm oil company within their own concession to monitor fires, illegal logging or hunting activities. These tracks can additionally be used for tourism purposes in the future which can help the local community with alternative livelihoods. Another external landscape project

performed by this type of companies is local development projects. Improving the situation of the local communities is often one of the goals of ILIs because, by providing alternative livelihoods, their dependence and therefore the pressure on the forests and its biodiversity decreases (IDH, personal communication, November 23, 2018).

The third most executed activity, *participate in a governance structure*, often means they are involved in a coalition. This eases the process of communication between project partners. Sometimes, these governance structures are put in place with a special goal, like the development of verified sourcing areas in the coalition where an Indonesian palm oil company is part of. Although these companies are the target of ILIs, some companies provide money for projects outside their farm or concession. Examples of this are financially supporting the restoration of degraded communal areas, co-finance a fence installation around a forest area or providing money for the project in general.

Some final interesting activities performed by this private actor type are modifying the land use, generating knowledge and preparing for financial support and improving business operations. The *land use* of companies in this category is *modified* through set-aside areas on the company's own farm or concession for tree nurseries or to protect peatland and mangrove swamps. One Indonesian palm oil company even acquired extra land to secure a wildlife corridor that was at risk of being interrupted because of the unwillingness of one company to collaborate. The palm oil company then acquired this concession as a response. The *knowledge generating activities* include conducting census research or HCV (high conservation value) assessments. *Preparing for financial support* for this category includes presenting proposals for forest protection to impact investors and developing de-risking reals. *Improving business operations* often means developing plans or endorsing the importance of developing responsible production plans.

Exploring the field 1 - Sustainable change: locals only

The Bumitama Biodiversity and Community project started in 2016 on the initiative of Indonesian palm oil company Bumitama Agri in collaboration with local and national governments, IDH, Aidenvironment (who manages the project) and International Animal Rescue Indonesia. The goal of the project was to tackle deforestation, improve landscape connectivity through creating wildlife corridors and protection of set-aside areas inside and around Bumitama's plantations in West Kalimantan, Indonesia. The aim was to prove that "plantations, communities and biodiverse ecosystems can coexist". To reach this goal, Bumitama Agri acknowledged that collaboration with other companies and governments would be essential, as the value of their activities would be limited if they would limit their focus to their own land. This is particularly true for forest fires caused by slash and burn techniques used by neighbouring plantations that easily spread to other concessions. Bumitama Agri was driven by a multitude of motivations to start this project. In the past, the company has experienced pressure from environmental groups like Greenpeace and Friends of the Earth because of their link to deforestation, forest fires and, consequently, shrinking habitats for endangered species. It was estimated that around a quarter of Indonesia's forests has been cleared since 1990, and palm oil is considered one of the important drivers. Starting this project therefore contributes to ensuring their license to operate, maintain the loyalty of key customers and meet sourcing standards. As they are a verified sourcing area (VSA) for sustainable palm oil, they can meet increasing demands for deforestation free palm oil and attract new buyers. In the project, they performed multiple activities, including acquiring a company to expand the wildlife corridor, co-fund the project with IDH, set aside part of their land for a tree nursery to rehabilitate the corridor, build jungle tracks for patrolling for fires, illegal logging, hunting and for research and tourism purposes. They additionally support a partnership for sustainable commodities and landscapes, together with palm oil companies EKL, KLIA, PAS, forestry company BSN, national government representatives and Norwegian and Dutch ambassadors. Some of these other companies changed their operation plans as well to secure the wildlife corridor and worked on social conflict management with surrounding villages.

5.3.2 Commodity producing multinationals connected to the landscape

Twelve companies fall within this group. In contrast to the previous company type, the companies in this category predominantly have their headquarters in Europe: in the UK, the Netherlands, Belgium, France and Luxemburg. The remainder is located in Singapore and China. They regularly combine the production of commodities with processing them (75%) or additionally include commercialisation (25%). The commodities they focus on are tea, rubber, cocoa, palm oil, wood, steel, tobacco and grapes for wine. The commodities they produce are often one of the many commodities they use to produce some of their many products. For example, a company in this category can simultaneously produce palm oil that is used for multiple products and cocoa that is processed into several products. They are large companies (83%), with the exception of a few medium companies (17%).

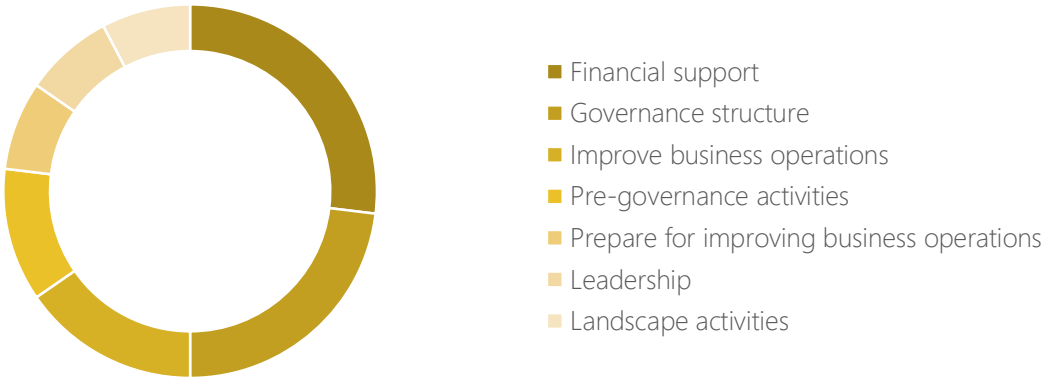


Figure 7 – Activities performed by commodity producing multinationals connected to the landscape, from most frequently (dark yellow) to least frequently (light yellow) performed activity.

For commodity producing multinationals connected to the landscape through a production unit, *providing financial support* is, with 64% of the multinationals performing this activity, the most performed activity. The money is in some cases provided for the project in general, as done by several large European multinationals. In other cases, the money is provided to be spent on specific subjects. A large Singaporean palm oil, rubber and sugar cane company provided money for the certification (RSPO) of 183 independent smallholders. Other examples include money provided for fence installations around and surveillance flights in forested areas and financing a consultancy company to carry out a feasibility study on the use of geothermal energy for drying tea. These activities were carried out by two large British and Dutch companies producing tea in the landscape.

Participating in a governance structure is the second most performed activity by this type of companies. Some of these companies even provide leadership in this governance structure, like a large steel company from Luxembourg that leads a biodiversity and conservation program and a large British tea company that, as chairman of the board, represents the interests of commercial growers in the area.

Although the commodity producing activities of these multinationals makes them a target of the landscape initiative, only four companies *improved their business operations* and two were in preparation. Furthermore, compared to the previous category the share of companies improving their business operations is much lower. When the companies in this group improve their business operations, they do this through implementing the RSPO certification scheme, as done by a large Singaporean palm oil, rubber and sugar cane company or through intensification and diversification of cocoa farms. This was done by a medium-sized French cocoa company and provides benefits on several fronts as intensification decreases the land that is needed for the same yield. This

increases the available land for conservation and increasing company efficiency which decreases costs. The same counts for diversification, which increases both the climate-resilience of cocoa farms and wildlife habitat.

Some other interesting activities for this company type include their participation in external landscape projects and participating in pre-governance activities. These *external landscape projects* are diverse. For example, it can mean the replanting of degraded forest blocks as done by the earlier mentioned two large British and Dutch companies producing tea in the landscape. Another example is a large French wine company that helps the local community with improving their livelihoods through allotting an enclosed area for grass to grow so the local community can sell it during the cut-and-carry season. Regarding the *pre-governance activities*, several large palm oil companies with sustainability commitments perform these activities. This means they are part of discussions around the sustainability of the ecosystem or focused at delinking deforestation from their commodity production. The fact that these companies have these kinds of commitments is important here, as this can be an important motivation for companies to get involved in an ILI. For this company type, this motivation can come from two ways. From the landscape, as a commodity producing company located in the landscape, they can feel the pressure from the local community in which case the responsible business operations are a license to operate. From the other end of the value chain, as a multinational company known by consumers or sells directly to end-users, they can feel the pressure to improve their business operations in order to fulfil the demand for responsibly produced goods (IDH, personal communication, November 23, 2018).

Exploring the field 2 - The textbook example of an ILI

This project, that started in 2014, focuses on forest conservation, improved water flow and access, sustainable energy and alternative livelihoods. It is one of the largest initiatives of IDH as more than 23 actors (governmental, non-governmental organization and businesses together) are involved. The initiative is centred around the South West Mau forest, Kenya where tea, timber and energy production take place. The forests surrounding the tea estates create a microclimate that is profitable for tea production, but the increased timber extraction puts this effect at risks. This brought tea, timber and energy producing businesses together. Collaboration between actors in this area is not new: several producing businesses have attempted to collaborate before in smaller projects and the tea producing businesses attempted to, together, manage the landscape sustainably. However, due to a focus on individual value chains and the limited coordination between actors, these attempts had no impact on the sustainability of the landscape. Only after the involvement of IDH, sufficient resources were collected and the tea producing businesses were enabled to collaborate with the non-private sector after which positive effects were generated at the scope of the landscape. Although almost all private actors in this initiative are from Kenya, the connection with the global market is clear: the world's largest tea packer Unilever and global tea producer James Finlay with produce tea in this landscape. These two large multinationals contributed to the project through providing financial resources for the project in general, but also for specific causes including a fence installation around a forest block and contracting a consultancy company to do research on using geothermal energy to dry tea. Additionally, they participated in a tree planting exercise and they participate in the ISLA Kenya platform, a platform that brings business representatives, CSOs and government together.

5.3.3 Commodity sourcing companies

With thirty-eight companies, commodity sourcing companies are the largest category. They are from all over the world, but mainly from Europe (42%), North America (24%) and Asia (21%). Almost all companies of this type have a multinational focus, with the exception of a few international companies and a few national companies among which several British supermarkets. Their connection to the landscape is diverse. Some companies are located in the landscape (24%), including, among others, companies that process and commercialise milk into dairy products, wood into pulp and paper and coffee beans into coffee. Some are connected to the landscape through a production unit (26%), including large palm oil and soy processing companies. Yet another group is located in or connected to the country in which the ILI takes place (21%), including coffee exporters, large chocolate companies and a pharmaceuticals company. A remaining group is not connected to the landscape at all (29%). This last group contains several European food producing companies and supermarkets, who source commodities from the landscape to commercialise, and sometimes process as well.

Figure 8 – Activities performed by commodity sourcing companies, from most frequently (dark orange) to least frequently (light orange) performed activity.

The most frequently performed activity by this private actor type is *providing financial support* and is done by half of the companies. Also in a relative sense, this private actor type most frequently provides financial support. For several companies, including a large Italian coffee company and several large British, Swiss, German and Austrian supermarket chains it is their only activity in the landscape initiative. While the supermarkets mostly provided their financial support to the project in general, a German/Austrian supermarket funded a research done by a university on natural water filtration, which would improve the company's business operations when found effective. Through providing financial support, one Kenyan dairy company even improved its direct business environment: their money was used to provide technical assistance to farmers increasing their yields, resulting in a more secure supply chain of the dairy company. A small Cambodian rice company experienced the same effect. This company emerged from a landscape initiative because of the following structure: they provide a premium price to rice farmers who stick to no-hunting practices. Consequently, they can sell the rice for a premium price as consumers are willing to pay for no-hunting rice.

After providing financial support, *participating in a governance structure* is the second most performed activity. This often means that the companies can meet pre-competitively and discuss how to improve their impact on the landscape. For two large Vietnamese coffee producers, one large European coffee producer and a Vietnamese coffee exporter, these pre-competitive meetings include sharing lessons from the field and discuss

challenges in their business operations with local authorities. To the large European coffee producer, this is even considered one of the primary benefits of participating in such a governance structure.

Although this private actor type is not involved in the production of commodities, it is possible to have a positive impact on the commodity production through *improving business operations* of the companies or smallholders they source from with farmer-focused projects. Examples of this are the development of a verified sourcing areas (VSA), in the case of a medium-sized Brazilian trading company, and projects focused on increasing farmers' climate resilience.

Exploring the field 3 - Linking a landscape to the value chain

The landscape in Aceh, Indonesia, is centred around the production of palm oil. As this industry is causing deforestation, IDH started a landscape initiative focused on forest conservation, sustainable agricultural production and improved livelihoods to decrease pressure on the forests. IDH is working together with the Indonesia government, local, provincial as well as national, and several NGOs including the Rainforest Action Network. Additionally, interest was raised mong palm oil plantation companies Musim Mas and Pati Sari to get involved in their PPI compacts in Tenggulun and Peunaron. Several palm oil buyers located in the region, who already defined sustainability commitments, were discussing environmental sustainability within the ecosystem, which is the water source of four million people. Through collaboration with several global players, including Mars, Unilever and PepsiCo, a link with the value chain was established. They showed interest in supporting the concept of VSA in Aceh. IDH describes the VSA as a way for palm oil buyers to secure a steady and responsibly produced supply, while the concept functions as an incentive for the government and palm oil producers to improve their production methods.

Exploring the field 4 - How European supermarkets influence Kenyan landscapes

Lake Naivasha, a freshwater lake in Kenya, experienced increased pressure on its ecosystem's services. Because of the abundance of freshwater, the lake attracted settlement and development, including slash-and-burn agriculture and a rapid growth of a new flower industry. In 1996, the Imarisha Naivasha public-private partnership was established on the initiative of the government of Kenya. With help of the Prince Charles International Sustainability Unit, essential stakeholders were convened to participate in the collaboration. The goal of this initiative was to find integrated solutions for deforestation, water quality, sustainable agriculture and pasture health. Several European supermarkets are involved in the initiative, including British supermarkets ASDA, Tesco, Marks & Spencer and Sainsbury's, German-Austrian supermarket REWE and the Swiss Coop. The four British supermarkets provide financial support annually for Imarisha activities in general, although continuation is no certainty. They state that their commitments "are based on recognition that risks to their businesses based on reputational exposure and reliability on sourcing of products procured from an unsustainable environment are very real and worth mitigating" (Kissinger, 2014). The other two supermarkets also provided financial support, but only for specific purposes: research on natural water filtration techniques and sustainable water usage. This is linked to their purchase of Max Havelaar roses. Through their activities, European supermarkets influence a landscape in Kenya they may have never visited.

5.3.4 Service providers

This diverse group of companies can be roughly divided into companies who are involved in the ILI because of their landscape-related knowledge and companies who are involved because of their subject-related knowledge. In the sample, this first group includes a floriculture association, a timber manufacturers association and a horticulture companies group. They are located in the landscape or the country where the initiative takes place. Through their involvement, these companies often represent a group of companies from the landscape conserning the landscape initiative. The second group includes construction specialists, consultants and financial institutions, located in Europe (39%), Africa (28%), Latin America (17%) and Asia and North America (both 6%). The size of these companies can vary greatly, as this type can include small consultancy bureaus as well as global legal firms and local construction companies as well as associations.

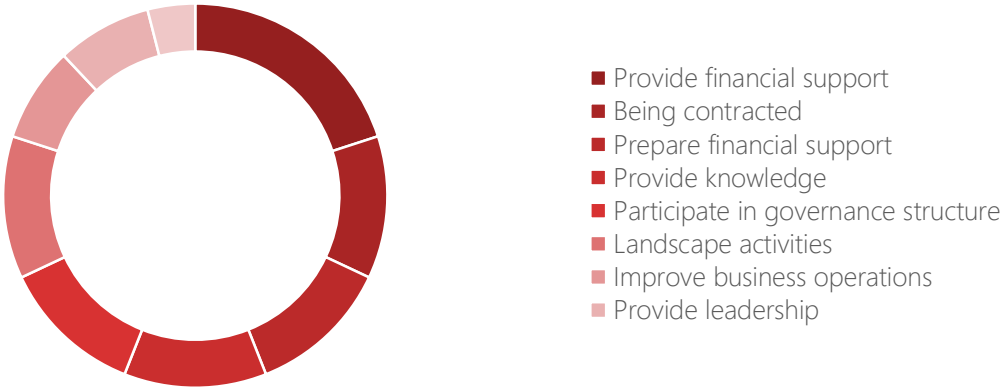


Figure 9 – Activities performed by service providers, from most frequently (dark red) to least frequently (light red) performed activity.

This diverse group of companies also performs a diverse set of activities as shown in the figure above. They mostly *provide financial support* for specific projects like large scale projects on multiple farms, as was done by a small British private fund. Other ways of providing financial support is through financial constructions including paying a tax to a town based on acreage that can specifically be used for infrastructure problems, or through providing beneficial loans for farmer groups.

Their second most performed activity is *being contracted*, simply referring to companies being paid for their services. This contrasts with some other companies of this type that provide their services without being financially rewarded for it.

An activity that is closely related to providing financial support is *preparing financial support*, which is their third most performed activity. In contrast to the other private actor types, for whom this activity is mainly focused on showing interest in providing financial support or making plans to do this, for service providers this activity often implies the development of specific financial constructions including de-risking deals, business cases, and matching investors to investable projects. They thereby support the preparation phase of providing financial support of other companies. The companies that focus on this activity can be from the landscape, like a large Brazilian financial institution, or they can be external, as is the case of several European investors.

5.3.5 Other companies

This company type includes a broad range of companies. Following from the research sample, the companies can roughly be divided into two groups: tourism companies from the landscape where the ILI takes place (56%), and companies that are from the country where the landscape initiative takes place (44%). The latter includes companies focused on telecommunication services, medicine production and beer production.

Figure 10 – Activities performed by other companies, from most frequently (dark blue) to least frequently (light blue) performed activity.

Providing financial support is the most performed activity by this company type. For the tourism companies this means they contribute part of their revenues to conservation efforts, which in return provides them with an enabled business environment as they heavily depend on the quality of the landscape for revenues. An example of this is a small Cambodian tourist accommodation company that provides funding for the protection of birds, including the critically endangered white-shouldered and giant ibis. The presence of these species is one of the reasons for tourists to visit the area. Another small Mozambican tourist accommodation company provides financial support to the nearby nature reserve, consequently being able to advertise themselves as a responsible tourist destination. In both cases, the tourism companies were a result of the landscape initiative, by which new economic opportunities were created for the local community. The remaining companies, including a small to medium-sized Kenyan medicine company, a medium-sized Kenyan beer brewer and a medium Kenyan telecommunication company, provide money for purchasing seedlings used for reforestation, but also for the project in general.

Participating in a governance structure is the second most performed activity by this group, meaning they contribute to scaling up field-level projects.

One final interesting activity is performed by a Tanzanian tour operator, who *improved* its *business operations* by only sourcing local products and services and contributing to *external landscape projects* by assisting in anti-poaching activities.

Exploring the field 5 - Businesses emerging from ILIs

In some cases, new businesses were established as a result of an ILI. In Mozambique, the government asked Peace Parks Foundation to develop a strategy to aid sustainable community development around the Maputo Special Reserve in 2005. As a result, the joint venture between the newly established Chemucane Tourism Company and the Bell Foundation (a philanthropic trust established for this initiative) started the Anvil Bay beach camp. The tourism accommodation provided the community with skills regarding construction and hospitality, created jobs and provided a sustainable income in a community with little economic opportunity in the past. Their sustainability focus is clear as their aim to minimize the ecological footprint of the camp is clearly communicated to their guests. A win-win situation was created in which the beach camp, which is located in the reserve and therefore highly dependent on the state of the reserve, contributes their benefits to the reserve. Both parties describe this coexistence as one of the solutions to nature conservation.

Another example is the way in which Wildlife Conservation Society (WCS) uses a Payment for Ecosystem Services (PES) method to improve rice producing methods in the Kulen Promtep Wildlife Sanctuary and Peah Vihear Protected Forest in Cambodia. While farmers previously were farming rice without any legal land rights, a collaboration between WCS, the Cambodian government and the newly established Ibis Rice company provided the farmers with these rights. This enabled them to think about the long term and incentivised them to use more environmentally friendly production methods. Examples are following existing land-use plans that limit deforestation and stop poaching. Through selling their rice to Ibis Rice, the farmers receive a premium price and are connected to an international market, while Ibis Rice is able to sell Wildlife Friendly certified rice worldwide that is organic to European and USA standards. Alongside Ibis Rice, an ecotourism enterprise was established with the goal of providing sustainable livelihoods, keeping them away from the forest and hunting. Through this ecotourism approach, their livelihoods no longer depend on hunting animals but on conserving the biodiversity in the area.

Exploring the field 6 - ILIs as charity?

While ILIs are aimed at providing integrated solutions to interconnected problems, the private sector is not always following this trend. In the Lari-Kijabe landscape in Kenya, a landscape initiative was started in 2007 to enhance biodiversity conservation at the farm level, diversify livelihood alternatives and empower the community in decision making. The collaboration between the Kenya Forest Service, Kenyan ministries and several CSOs and NGOs (including UNEP, Canada World Youth and EcoAgricultural Partners) attracted private actors as well. However, in contrast to the companies in other initiatives, Phillips pharmaceutical company, several banks, Kenya Breweries and the Safaricom Foundation are not located in or connected to the landscape. They provided money to purchase seedlings to contribute to the forest conservation efforts in the landscape. As they are Kenyan companies supporting a local project, it seems like these companies consider the landscape initiative as a charitable cause.

6 Discussion

The objective of this study is to provide an answer to the following research question: What types of private actors are involved in ILIs and what activities do they perform in this context? Publicly available information was collected on 104 companies involved in 23 initiatives in the tropics. Two typologies were developed to provide conceptual clarity regarding private actors involved in ILIs and their activities.

Considering the private actors involved in ILIs, a typology was developed based on attributes including sector, product, connection to commodity, connection to landscape, international activity and company size. Five types were identified that range on a scale of high to low connection to commodity production in the focal landscape: commodity producing companies from the landscape, commodity producing multinationals connected to the landscape, commodity sourcing companies, service providers and other companies.

When looking at the involvement of the private sector in ILIs, their most performed activities are providing financial support, participating in a governance structure and improving their business operations. The results suggest that companies mostly perform activities that do not directly affect their business operations. Analysing the activities of the individual private actor types, a different distribution is visible. It was found that all company types often play multiple roles, as they often execute multiple activities. The commodity producing companies from the landscape always have the role of target in ILIs because of their business activities in the landscape. Then, they mostly have the role of reformer because of their improved business operations activities. Thereafter, they mostly play the role of participant by participating in governance structures like coalitions and committees and participate in external landscape projects like reforestation and forest protection activities. Despite their role as target, they also occasionally provide financial support to other actors or the landscape initiative in general, and it is thereby the only private actor type for which this is not the most performed activity. For the commodity producing multinationals connected to the landscape this activity is followed by participating in a governance structure and improving their business operations. The commodity sourcing companies show the same top three, although their activities in total are more diverse. This also applies to the service providers who, after providing financial support, are being contracted for their services, prepare financial support, provide knowledge, participate in governance structures, participate in external landscape projects, improve business operations indirectly (of other companies in the landscape initiative) and provide leadership in governance structures. Finally, the other companies mostly provide money, followed by participating in a governance structure and ILIs and are the group that most experience the positive effect of seeing their business environment enabled or improved because of the landscape initiative.

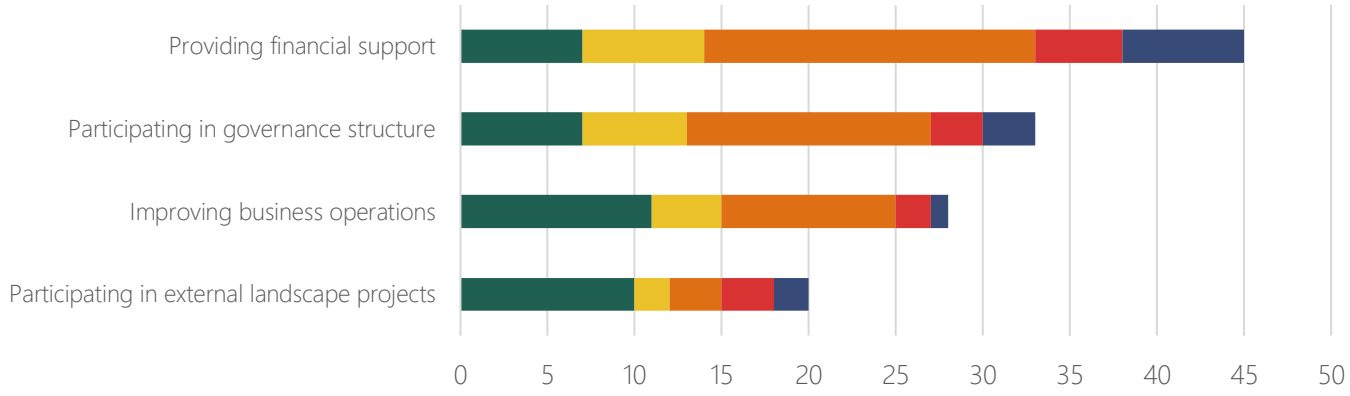


Figure 11 – Number of companies per private actor type performing the most performed activities.

6.1 Implications

Two important implications have been identified. The first concerns the importance of private and external actors in ILIs. The second focuses on the question whether companies act out of self-interest when they get involved in a landscape initiative or that they are limited by their sphere of influence. Both implications are discussed below.

6.1.1 The importance of private and external actors

The results on the activities of the types of private actors provide the insight that, when ILIs with private sector involvement are concerned, the influencing factors on the landscape transcend the borders of that landscape. This is in contrast to how Ostrom illustrates her SES framework as an interaction between users of a resource within a resource system to prevent a 'tragedy of the commons' (Ostrom, 2009). First, one important external influence is that of companies that in this research fall within the company type service providers. This type of companies performs diverse and essential tasks including preparing financial support through developing business cases and de-risking deals, provide expert knowledge to other actors in the landscape and participate and provide leadership in governance structures. Especially these latter activities are considered essential in ILIs (Estrada-Carmona et al., 2014). Second, all private actor types can be considered important. The fact that for all but the first type providing financial support is their most executed activity, confirms the belief that the problem of a lack of sustainable and local financial resources can be reduced (and potentially solved) by private actor involvement (Milder et al., 2014). For the commodity producing multinationals, commodity sourcing companies and other companies, even more than half of the companies executed the activity of providing financial support. In some cases, it is even embedded in the programs by means of yearly contributions. This can significantly increase the sustainability of ILIs.

During the research, a third type of actor, that was not the focus of the research, was found to have an important role in (the involvement of private actors in) ILIs: neutral organizations (these can be private or civil society organizations) that focus on gathering all relevant stakeholders into collaborations. In this research, this role was fulfilled by IDH. As the focus of this NGO in ILIs is to increase private sector participation, the number of companies in their landscapes was relatively very high. Although companies mostly provided money in the initiatives, the shared investment with IDH that reduces the risks associated with involving in this kind of projects seems an important entry point for constructive participation in ILIs (Estrada-Carmona et al., 2014). Additionally, as described by Scherr et al. (2017), "companies cannot easily assess if they can or cannot solve sustainability risks around climate, social conflict, deforestation, and water on their own (for example through product certification), to determine clearly the need for a broader landscape strategy". NGOs are in a good position to meet this need for reliable knowledge and risk assessment. The presence of this kind of organization is therefore considered an important driver that brings the private sector and other actors involved in ILIs together (Zanzanaini et al., 2017).

6.1.2 What drives private actors to get involved in ILIs?

Private sector involvement in ILIs is important, although it is not intuitive for a company to try to solve problems that are prone to free riders and prisoner dilemma's (Ostrom, 2009). Additionally, as mentioned in the previous section, assessing whether their problems should be solved in an ILI or individually is considered a challenge by companies (Scherr et al., 2017). From this research it is apparent that there are companies that prefer integrated solutions over individual programs and projects. However, the question remains what drives them to get involved in ILIs. Two suggestions are explored here.

Concerns have been expressed that companies may co-opt landscape initiatives to serve their own ends, thereby undermining the effectiveness of ILIs (Milder et al., 2014). A first follow-up question to be asked is: to what ends? Considering the drivers that bring all the actors together to start a landscape initiative, the top three is quite similar as reported in the continent-wide studies: natural resource conservation/protection, followed by biodiversity conservation and improved livelihoods/farmer incomes. No special focus on motivations that specifically benefit private actors' activities inside and outside the landscape was found. Besides, the ends Milder et al. (2014) are referring to may be different for every company type. While the commodity producing companies from the landscape might be driven internally by maximizing agricultural yields and thereby economic returns (as they (almost) fully depend on this landscape), they might additionally experience external pressure from local governments and communities to reduce their impact on the landscape as a license to operate. Being involved in a landscape initiative could, through increasing the sustainability of its production, serve both ends at the same time. Commodity producing multinationals, who are often more widely known by the public, might experience a combination of local and consumer pressure. This might also explain why these companies, who also could change their business operations, prefer to provide financial support: they indirectly make a change in the landscape, which contributes to their license to operate, while simultaneously being able to proclaim to consumers that they are contributing to sustainable landscapes. Companies sourcing from the landscape who often process and commercialize these commodities are even closer to the consumer, which increases the pressure from this side of the supply chain. Service providers are often driven by their company mission, as these companies are often specifically focused on providing landscape in development related services. For the other companies a driver could be to create a good image around the company name, or to support their local community (when it is from or located in the landscape or country). Because of these differences, differentiating between the several company types is important and the developed private actor typology thereby enables a more informed and therefore nuanced discussion around these questions.

This distribution provides a certain level of distance of the company types to the commodity producing activities and the landscape where this takes place. This relates to the statement of Zanzanaini et al. (2017) saying that "those more involved in the landscape are able to make better decisions about where to invest financial resources as they might have a more realistic understanding of the time scales and investments". In this research, this is not considered to only be applicable to financial resources, but for any resource that is provided. It implies that companies being more involved in the landscape, namely the first two types (and possibly the fifth type when located in the focal country) are able to contribute to the landscape in a more targeted way. This could include improving business operations, providing money for specific activities, governance structures and external landscape projects. For companies that are less involved, providing financial resources to the project in general, thereby enabling a more involved actor to attribute these resources to specific activities, would make more sense. Although the private sector provides money which is very important, it is still relevant to consider to what extent they are using their influence in the landscape in an optimal way or that they are focusing on the low-hanging fruit.

Next to being limited by knowledge, the sphere of influence of a company in the landscape provides a limitation in itself. This can be illustrated by the expected effect of private actor taking leadership in (setting up) ILIs (Ostrom, 2009). Despite their entrepreneurial mindset, private actors are limited to perform this activity due to competition law among other reasons. It is additionally visible for the activity improving business operations. For the commodity producing companies this is their most performed activity. They are the most involved in the landscape: they are from the landscape and this may be their only business unit. Their influence in the landscape is therefore substantial, but so is their dependence on this particular landscape. This may explain the high number of companies improving their business operations and may imply that improving business operations is an example of an effective activity to improve the impact of a company on a landscape. The larger the distance from the commodity production, the less this activity is performed. This makes sense as for the companies not related to commodity production, this activity is outside their sphere of influence (Zanzanaini et al., 2017). Of the

other company types that can positively influence the landscape in this way, commodity producing multinationals and commodity sourcing companies, a third and a quarter of the companies executed this activity respectively. However, providing financial resources and participating in governance structures were still preferred over improving their business operations. From the data no definitive conclusions can be drawn on this matter and multiple scenarios remain open for consideration. The first is that they have the knowledge that providing money is the optimal way of increasing the sustainability of the landscape by giving it to another organization who can best attribute it so specific activities or give it to specific activities. Secondly, it could be possible that it would also be best for the first type of companies to provide money but that they lack these financial resources and therefore improve their business operations. Lastly, multinationals may choose the activity that least impacts their business operations. Another perspective on this is that if a company's business operations are the source of the problem in a landscape, not changing these business operations but providing money can be considered a sub-optimal and temporary solution. Especially in the case of the commodity producing multinationals connected to the landscape providing money for the general project can be considered as sub-optimal, as they also could have given it to a specific activity or carry out that activity themselves.

6.2 Limitations

Because this research was designed as a descriptive characterization of private sector involvement in ILIs, this study prioritized breadth and data availability over in-depth analysis of individual private actors or ILIs. This design presents a few caveats for interpretation of the results. First, the 103 analysed private actors involved in the 23 initiatives may not represent all private actors involved in ILIs in the tropics now and in the past. Rather, they represent those that we were able to identify through internet sources and already researched initiatives in overview studies of Africa and South and Southeast Asia, leading to a high dependence on private actors and initiatives with online presence and comprehensive documentation. This could have biased our sample towards initiatives that are more developed and are associated international institutions. Thereby, this research might underrepresent initiatives that lack these features. A second caveat is that the publicly available sources used in this research are for the greater part not-scientific and based on self-reporting. Subsequently, the information is limited to the knowledge of the company or initiative representative and can be biased. We attempted to mitigate this by using reports from non-governmental organizations as it is expected that these would have less interest in portraying the information in a more positive way. Additionally, to the greatest extent possible we triangulated the information from initiative websites, company websites, reports from non-governmental organizations and other sources. However, information might still be biased intentionally or unintentionally. Finally, the results identify only whether or not a particular activity was performed, it does not provide a normative interpretation of each activity in terms of effectiveness regarding increased sustainability of the landscape. It is therefore possible that performing a single activity is more effective than executing multiple activities, that one activity is more effective than another and that a single activity is executed more effectively by one company than by another company. Despite these caveats, the data provides an exploration of the role of the private sector in ILIs in the tropics.

6.3 Directions for future research

By providing a typology of private actors and their activities in ILIs in the tropics, the results presented here can help practitioners in the field to interpret the role of the private sector in ILIs in a more constructed manner. However, further study is needed. Two priority needs for evidence on ILIs are suggested: 1) the effectiveness of private sector involvement, and 2) what motivates private actors to get involved. These needs for evidence are

proposed here to enable everyone involved in the field of landscape initiative to more efficiently attribute their resources to get private actors involved in ILIs and to what activities specifically, should it be effective.

We suggest two research approaches that could help meet the first need for evidence identified above. The first is comparative research between ILIs with and without private sector involvement focused on ILI outcomes, using the same method of identifying and rating ILI outcomes as used in the earlier mentioned continent-wide studies on ILIs in Africa (Milder et al., 2014), Latin America and the Caribbean (Estrada-Carmona et al., 2014) and South and Southeast Asia (Zanzanaini et al., 2017). Second, a deeper understanding of what it is that makes private sector involvement effective or ineffective can help private and other actors involved in ILIs attribute their resources more efficiently towards private sector involvement and specific activities. The typology of activities provided by this research can form the basis of describing the relative effectiveness of every activity in different situations. This connects to the earlier discussed normative interpretation of activities. The relative effectiveness of activities could be rated based on input and output, thereby identifying low-hanging fruit relevant for companies with limited resources or influence and more constructive long-term activities for more involved and influential companies.

For the second need of evidence, a research approach based on anonymized interviews is proposed to prevent limited data quality that is limited by the knowledge of the respondent and may be biased. It makes it easier to use a snowball method to identify more initiatives, which proved to be useful in the continent-wide study in Africa (Milder et al., 2014). The anonymization is considered essential as private actors might not provide information that could impact their competitive position. For example, companies might not easily want to admit a large dependence on a landscape, as others could take advantage of this information. Similarly, being involved in a landscape initiative for the sole purpose of improving the company image is not something companies will easily admit. Gaining a deeper understanding of the drivers can help actors involved in ILIs attribute their resources more efficiently as well, as they know what situation and entry point should be facilitated to attract private actors, should private sector involvement turn out to be effective.

In conclusion, the main contribution of this research is providing conceptual clarity through the development of typologies regarding private actors and their activities in ILIs, enabling a better understanding of the topic and a starting point for future research.

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Appendix I The first and second-tier variables of the SES framework

Here, the first and second-tier variables of the SES framework are provided (McGinnis & Ostrom, 2014).

Social, Economic and Political Settings (S)			
S1 – Economic development, S2 – Demographic trends, S3 – Political stability, S4 – Other governance systems, S5 – Markets, S6 – Media organizations			
Resource System (RS)		Governance System (GS)	
RS1	Sector	GS1	Government organizations
RS2	Clarity of system boundaries	GS2	Nongovernment organizations
RS3	Size of resource system	GS3	Network structure
RS4	Human-constructed facilities	GS4	Property-rights system
RS5	Productivity of systems	GS5	Operational-choice rules
RS6	Equilibrium properties	GS6	Collective-choice rules
RS7	Predictability of system dynamics	GS7	Constitutional-choice rules
RS8	Storage characteristics	GS8	Monitoring and sanctioning rules
RS9	Location*		
Resource Units (RU)		Actors (A)	
RU1	Resource unit mobility	A1	Number of relevant actors
RU2	Growth or replacement rate	A2	Socioeconomic attributes
RU3	Interaction among resource units	A3	History of past experiences
RU4	Economic value	A4	Location
RU5	Number of units	A5	Leadership/entrepreneurship
RU6	Distinctive characteristics	A6	Norms/social capital
RU7	Spatial and temporal distribution	A7	Knowledge of SES
		A8	Importance of resource (dependence)
		A9	Technologies available
Interactions (I)		Outcomes (O)	
I1	Harvesting	O1	Social performance measures
I2	Information sharing	O2	Ecological performance measures
I3	Deliberation processes	O3	Externalities to other SESs
I4	Conflicts		
I5	Investment activities		
I6	Lobbying activities		
I7	Self-organizing activities		
I8	Networking activities		
I9	Monitoring activities		
I10	Evaluative activities		
Related ecosystems (ECO)			
ECO1 – Climate patterns, ECO2 – Pollution patterns, ECO3 – Flows into and out of focal SES			

Appendix II Operationalization and scoring of research variables

Factor	Operationalization	Score
General initiative information		
Location (RS9)	Geographical location of landscape categorized by country	*Country*
Governmental organizations (GS1)	Number and kind of governmental organizations (no division is made between higher or lower governmental bodies)	*(number)/name(s)*
Non-governmental organizations (GS2)	Number and names of non-governmental organizations	*(number)/name(s)*
Characterization private actors involved in ILIs		
Sector (RS1)	Sector is operationalized by three indicators: sector and subsector as described by the International Labour Organization (ILO, n.d.), whether it falls within the primary, secondary of tertiary sector, and the product is specified. Only the sectors that were necessary to describe the companies from the research sample are provided here. While many of the ILO sectors speak for themselves, a few sub-sectors demand for some explanation: Chemical industries: companies active in chemical, pharmaceutical, rubber and tire industries. Financial and professional services: companies that provide their services including contractors, consultants, mortgage banks, credit cooperatives, insurance and pension funds, cash management firms and other firms engaged in financial intermediation or asset management.	*ILO:* *1 Agriculture, plantations and other rural sectors (1.1 Agriculture, drink and tobacco; 1.2 Food, drink and tobacco; 1.3 Forestry, wood, pulp and paper)* *2 Manufacturing (2.2 Chemical industries; 2.5 Textiles, clothing, leather and footwear)* *3 Infrastructure, construction and related sectors (3.1 Construction)* *4 Public service, utilities and health (4.1 Health services; 4.3 Utilities)* *5 Private services sectors (5.1 Commerce; 5.2 Financial services, professional services; 5.3 Hotels, catering and tourism; 5.5 Postal and telecommunication services)* *6 Energy and mining (6.1 Mining)* *Primary/secondary/tertiary* *Product*
Location (A4)	Geographical location of the head office (or another office of the private actor in the focal landscape), categorized by country	*Country*
Company size (A2)	Number of employees	SME = <100 / small/medium = 100-999 / medium = 1000-9999 / large = >10000
Located in landscape (X1)	Whether the private actor has a head office or other office/business activities in the focal landscape	*From landscape/connected to landscape/from country/connected to country/not from or connected to landscape or country*
International activity (X3)	National, international, multinational	
Describing private sector involvement in ILIs		
Leadership/entrepreneurship (A5)	Whether the private actor has taken initiative in starting a project/the ILI	*Yes/no*
Role (X6)	The role is determined based on the descriptions in Table 3 in the theory section	*Beneficiary/implementer/reformer/resource provider/target*

Appendix III Developing typologies of private actors and their activities in ILIs

This section provides a description of the development of the typology of private actors and the typology of private actor activities in ILIs using the model of empirically grounded type construction of Kluge (2000). The construction of both typologies is described using the four steps provided in this model.

1 Development of relevant analysing dimensions

First, the relevant analysing dimensions were developed. For the typology of private actors these dimensions partly originate from the variables discussed in the theory section on the characterization of private actors (including sector, location, located in landscape, international activity and company size) and were partly identified and developed during the analysis by means of the collected data (including connection to commodity and supply chain/international influence in landscape). For the typology of private actor activities, the descriptions of the activities falling in the roles as described in the theory section on the characterization of private actor activities were summarized and separated into the actual activity (e.g. providing money, planting trees, receiving knowledge etc.) and to what end these activities were executed (e.g. for production intensification, for reforestation, on on-the-ground experience).

2 Grouping the cases and analysis of empirical regularities

Second, the companies and activities were grouped to analyse existing empirical regularities. For the typology of private actors, this iterative grouping process was based on the analysis of the descriptive statistics of individual and combined variables as presented below. These include product and sector, location and connection to landscape and company size and international activity. For the typology of private actor activities, this grouping process was based on a bottom-up analysis of the activity descriptions.

2.1 Product and sector

The business activities in the landscapes mostly resolve around commodities including palm oil, wood, cocoa, coffee, rubber, tea and beef, but also around energy, corn, cotton, sugarcane, cashew, pepper, wine, flowers, steel, tobacco, dairy, beer, vanilla and rice. Other companies are active around consultancy, construction, trading, financial products and medicine. For the variable 'sector', the classification of the International labour Organization (ILO) was used. As some companies show supply chain integration and therefore fall within multiple sectors, the number of companies in a sector is described here.

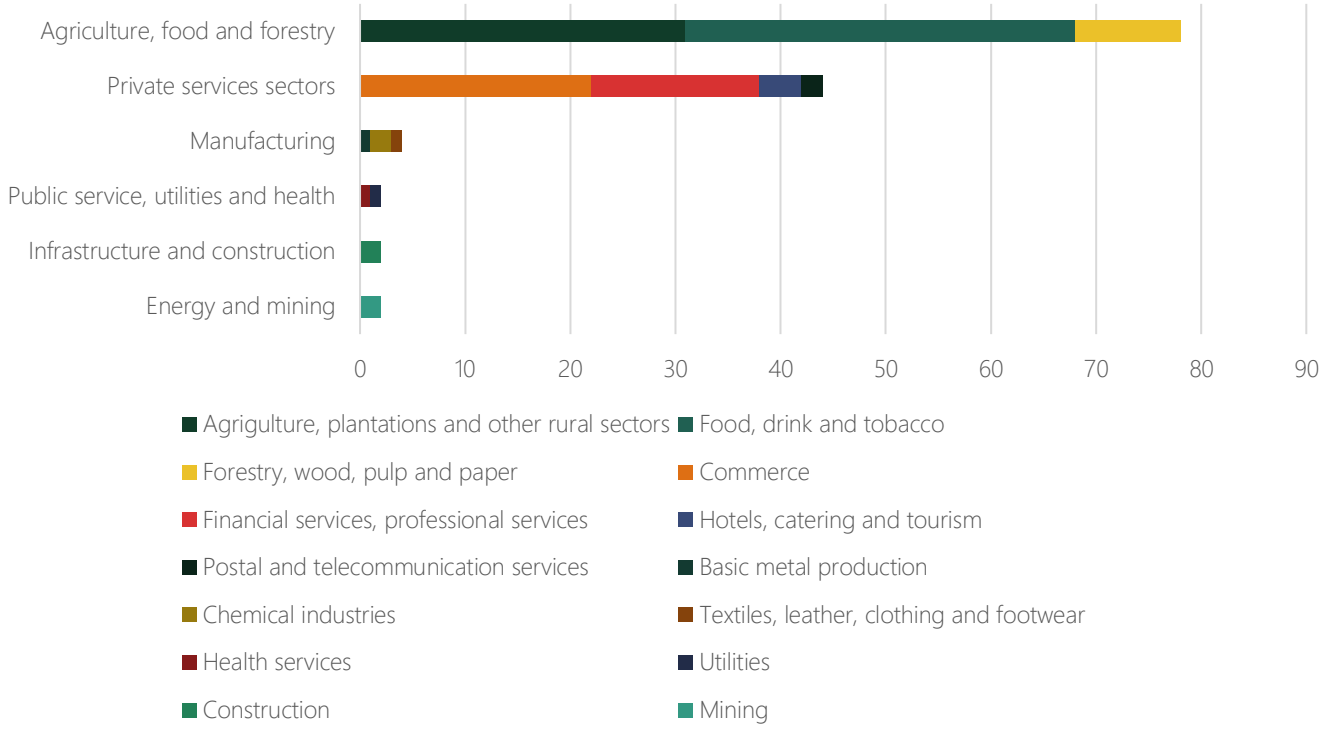

Figure 12 – Number of companies per sector as defined by the ILO. As companies can fall in multiple sectors as a result of supply chain integration, the sum of sector totals does not equal the total amount of companies (104).

The Agriculture, food and forestry sector is the most represented sector. In this sector, most companies are active in the Food, drink and tobacco sub-sector, followed by Agriculture, plantations and other rural sectors and Forestry, wood, pulp and paper. In the Agriculture, food and forestry sector fifteen companies focus only on the production of commodities, seventeen focus on processing these commodities into consumable products and eighteen companies combine these activities through supply chain integration. This implies the companies have a plantation or farmland as well as a production facility or mill. Twenty-three companies combine commodity processing and the commercialisation process and therefore also fall in the Commerce sub-sector.

The second most represented sector is the Private services sector. Within this sector, most companies fall within the Commerce sub-sector, followed by Financial services and professional services, Hotels, catering and tourism and Postal and telecommunications services. This sector includes companies that are fully focused on tertiary activities including consultancy, financial products, management, tourism, telecom, trading, export and supermarkets.

The other, least represented, sectors include Manufacturing, Public service, utilities and health, Infrastructure and construction and Energy and mining.

Summarizing, most companies involved in the ILIs in the research sample produce, process or commercialise a commodity. This is, therefore, one of the most important distinctive factors in the typology of private actors.

2.2 Location and connection to landscape

Analysis of the location of the private actors involved ILIs from the sample shows that the companies are not only from the landscape, or even the country, where the initiative takes place, but from all around the world. This means that there is a clear external and often international influence in the ILIs, and therefore in the landscapes. The following five ways in which a company can be related to the landscape have been identified: 1) from the landscape, 2) connected to the landscape, 3) from the country, 4) connected to the country, and 5) not located in the landscape or country. This distinction of companies is made based on the location of their head office and to a certain extent described how invested they are in the landscape, which is summarized in Figure 13.

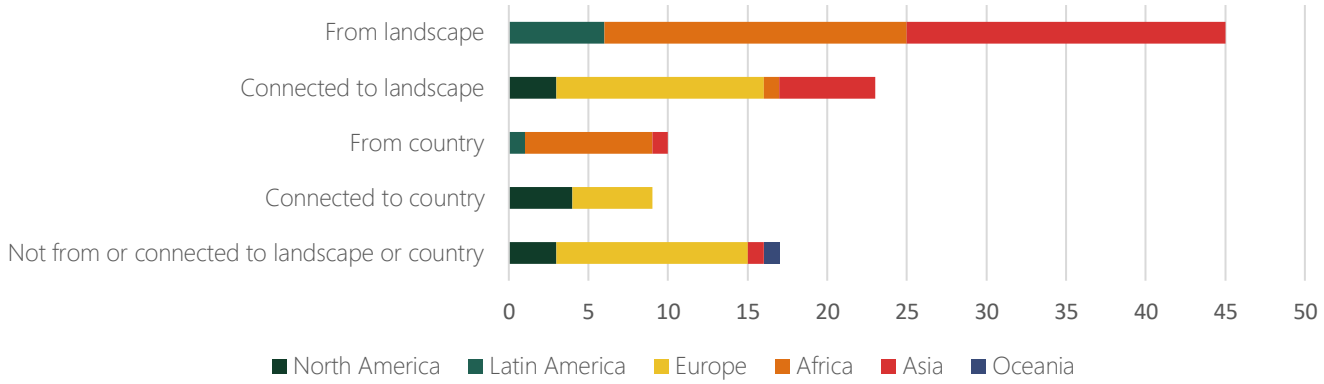

Figure 13 – Location (continent) of companies and their connection to the landscape.

The first group is from the landscape where the initiative takes place. With 43% this is the largest group in the sample. As this research focuses on the tropics, these companies are from Asia (19%), Africa (18%) and Latin America (6%). Examples of companies that fall within this first group are companies of whom their only business unit is in the focal landscape (e.g. Indonesian palm oil companies with one production facility), or companies with several business units but with their head office in the focal landscape (e.g. Brazilian beef producers with production units all over the country). These companies are highly invested in the focal landscape, and often have advanced knowledge of the local situation. The second group, with 22% also the second largest group, includes companies that are connected to the landscape through a production unit, sub-office or subsidiary but have their head office abroad in Europe (13%), Asia (6%) or the USA (3%). Because of this connection with a head office abroad, they often do not have full autonomy but do have landscape specific knowledge. The third group, with 10%, is smaller and includes companies that are from the country of the focal landscape. This group was identified as a separate group as they are not located in the landscape itself but can still have advanced knowledge of the local situation. The same counts for the fourth group (9%), which includes companies that are connected to the country of the focal landscape through a production unit, sub-office or subsidiary but have their head office abroad In Europe (5%) or North America (4%). The final group (17%) includes companies that are not located or connected to the focal landscape and have their head office in Europe (12%), the USA (3%), Oceania (1%) and Asia (1%). Summarizing, this means that 59% of the companies who are involved in ILIs are not from or connected to that landscape.

2.3 Company size and international focus

Analysis of company size shows that large companies are most represented and small companies least represented in the researched ILIs. Regarding their international focus, 30% of the companies has a national

focus, 16% has an international focus, and 53% has a multinational focus. Combining these characteristics (as shown in table x), it becomes clear that large multinational companies are by far the most represented category: 39% falls within this category. These large multinationals are often very influential, and the commodities used for their products are often just one of the many commodities they use for one of the many products they produce.

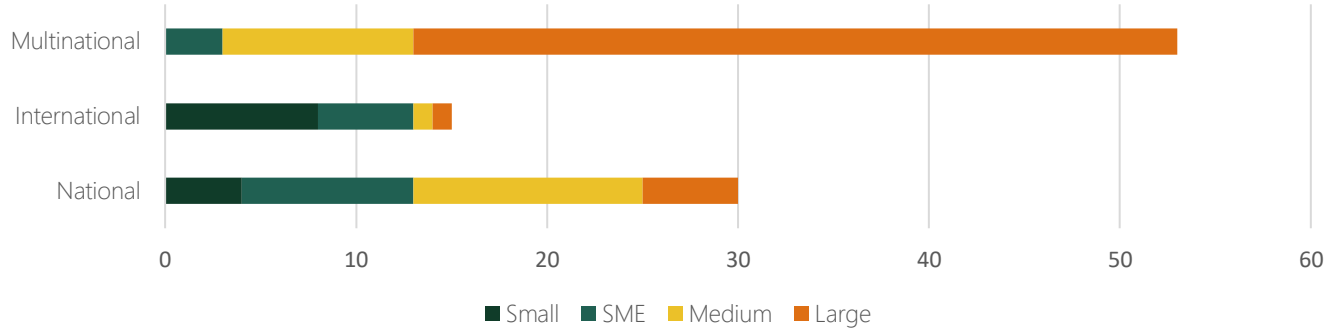

Figure 14 – International focus of companies per company size.

Based on these analyses, the companies were grouped multiple times until four groups were found that showed internal homogeneity (the companies within the groups showed a large extent of resemblance) and external heterogeneity (the groups contained sufficient variation). A final group still showed a large diversity regarding these attributes.

2.4 Bottom-up analysis of activity descriptions

The same process was executed for the activities through merging the separate activities until no further combinations could be made without losing a necessary level of detail and no overlap between activities was identified. This process was executed for all activities performed by the 104 companies. An example of this process is presented below for the most performed activity: providing financial support.

Table X – Bottom-up analysis of activity descriptions

Activity description	Summary of activity description	Purpose of activity
About 50% of the fence installation budget has been raised based on commitments from [the private sector]	Financially support	*Forest protection*
With a total budget of EUR 1.1 million for the first phase, the project is jointly funded by IDH and [the private sector] Annual contributions of €100,000 each from [private actors] (IDH secured €1.6 million in co-funding, mainly from private-sector partners	Financially support	*General project*
We proved it can be done, and it is the first step towards certifying all their smallholders. This will be done by [private actor] via its own funding.	Financially support	*Certification procedure*
[private actors] were convened by IDH in a PPP coalition, all jointly co-investing with IDH on projects outside their farms to help restore degraded land in communal areas.	Financially support	*Land restoration*

3 Analysis of meaningful relationships and type construction

Following from the grouping process of the companies, several meaningful relationships can be described. All companies from the sample that are focused on producing (and possibly additionally processing and commercializing) a commodity are located in the landscape. While about two third of these companies is from the landscape where the initiative takes place and has a national or international focus, about one third is comprised of multinational companies that are connected to the landscape through a production unit but have their head office abroad (Europe and Asia). Based in this distinction, these two groups have been identified as Commodity producing companies from the landscape and Commodity producing multinationals connected to the landscape respectively. The rest of the companies in the sample are either focused on processing and/or commercializing commodities or service-related activities. An important distinctive factor within this group is the focus on commodities. About half of this group is still focused on the commodities by processing and/or commercializing them, distinguishing them from the other half of this group. However, they do not produce them, which separates them from the first two company types. This group is therefore identified as Commodity sourcing companies. The remainder is not focused on either producing, processing nor commercializing commodities from the landscape where the initiative takes place. They provide services of produce completely different goods. The distinctive factor within this remaining group is that some companies provide services related to the commodities produced in the focal landscape and that other companies provide services or produce products that are not related to these commodities at all. These final groups are therefore identified as Service providers and Other companies respectively.

Through analysing these relations, a trend was recognized within the identified private actor types: the types are on a scale from high involvement to low involvement in commodity production in the landscape. This was therefore identified as an additional attribute.

For the private actor activities, the grouped activities were combined into an activity type with a type description as shown in the example below.

Identified activity in typology	Description activity in typology
Providing financial support (identified to fall in the role of resource provider)	for specific causes (e.g. forest/biodiversity protection, research, community development projects, improved production methods and certification procedures), or for the project in general (the money is then attributed to specific causes by another landscape actor). Financial resources can be provided at once, as regular contributions or as a part of the company's benefits.

4 Characterization of the constructed types

Here, the constructed private actor types are characterized through a diagram showing its relative position to the focal landscape, a characterization table and type descriptions.

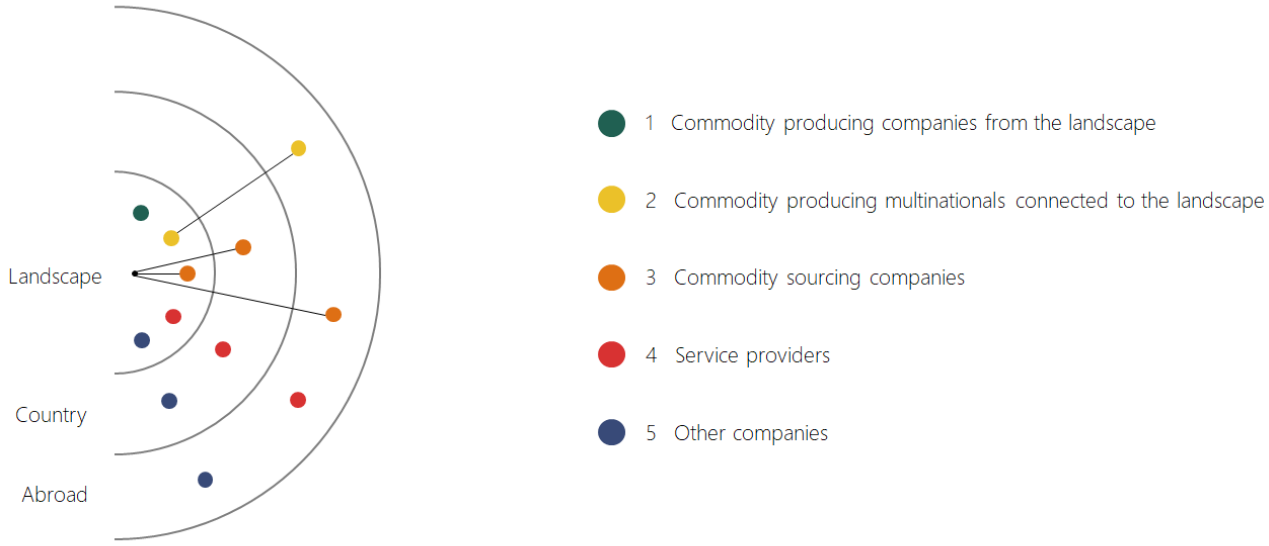

Figure 5 – Private actor types visually represented by their embeddedness in the landscape.

Table 4 – Distinctive factors of the five private actor types.

	Connection to commodity	Located in landscape	Sector *	International activity	Supply chain influence/ international influence in landscape
1	Producing (processing and commercializing) the commodity	Yes	1 (1.1 & 1.3), 4 (4.3), 6 (6.1) Primary, supply chain integration possible	*Irrelevant*	No
2	Producing (processing and commercializing) the commodity	Connected to landscape through production unit	1 (1.1 & 1.3), 4 (4.3), 6 (6.1) Primary, supply chain integration possible	Multinational	Supply chain/ international influence
3	Sourcing the commodity	*Irrelevant*	1 (1.1, 1.2), 5 (5.1) Secondary, tertiary possible	*Irrelevant*	Supply chain influence
4	Providing knowledge on the commodity	*Irrelevant*	5 (5.2), 3 (3.1) Secondary	*Irrelevant*	(International) influence
5	No connection to the commodity	*Irrelevant*	*Irrelevant*	*Irrelevant*	(International) influence

* These number correspond to the sector classification of the ILO as provided in the operationalization table in Appendix II.

4.1 Commodity producing companies from the landscape

Companies within this category are from the landscape where the landscape initiative takes place. Their business activities are focused on the production of commodities that fall within the Agriculture, food and forestry sector in the case of palm oil, beef, tea, tobacco, wood, fruit and vegetables, vanilla and rubber, but also in the Public services, utilities and health sector in the case of energy, or the Energy and mining sector in the case of metals like zinc, tin, nickel and lead. They can have a national or international focus. They might show some extend of supply chain integration by executing processing or commercialization activities as well. As the production of commodities is often labour-intensive work, the companies in this category are likely to be medium to large, although this is not a requirement for a company to fall in this category.

4.2 Commodity producing multinationals connected to the landscape

The companies in this category are multinational companies connected to the landscape through a production unit producing a commodity. They can additionally focus on processing and commercialising these commodities. This category is a clear example of what supply chain influence in a landscape can look like. The commodities they produce are often one of the many commodities they use to produce some of their many products. Just as with the companies located in the landscape producing a commodity from the first category, the companies in this category fall within the Agriculture, food and forestry, Public services, utilities and health and within the Energy and mining sector and are often medium to large, although smaller companies might fall within this category as well.

4.3 Commodity sourcing companies

The companies in this category are connected to the landscape because they source commodities from it. The companies can be located in the landscape or country, or even abroad. Their focus is on processing and/or commercialising them, but not on producing the commodities. This is another clear example of supply chain influence in the landscape. They can have a national, international or even multinational focus, although it is most likely that large multinational companies make up most of this category. They fall within the Agriculture, food and forestry sector and Agriculture, plantations and Food, drink and tobacco sub-sector, because they are producing food or process commodities that could be used for multiple purposes (e.g. palm oil and cotton). They can also fall within the Private services sector, Commerce sub-sector specifically when they are solely focused on the commercialisation of the commodities or products that came out of the commodities produced in the landscape (e.g. trading companies or supermarkets).

4.4 Service providers

The companies in this category are not focused on the production of commodities but are connected to the landscape because they provide services related to commodities or ILIs (e.g. associations of commodity producing companies, consultancy companies, commodity management companies, law firms and investment institutions). Therefore, they fall within the services providing sector (Private services sector, Financial and professional services sub-sector or the Infrastructure and construction sector, Construction sub-sector in the case of construction companies). In the case of organizations like associations, they are likely to be located in the landscape or country where the initiative takes place. They are involved in the landscape initiative because of their landscape-related knowledge on the companies that are active in it. Regarding the rest of the companies in this category, they are more likely to be located in the country or abroad. They are involved because of their

subject-related knowledge (on law, management of ILIs, business/production practices, financial constructions). This category shows (international) influence in the landscape, in contrast to the previous two categories that show supply chain influence in the landscape. The size of these companies can vary greatly, as this category can involve small consultancy bureaus but also worldwide law firms or local construction companies or associations. Regarding international activity, there is no prerequisite to fall within this category.

4.5 Other companies

This final category is made up of companies that are involved in a landscape initiative but are not producing or even connected to a commodity. They are involved because they are from the landscape (e.g. in the case of tourism companies) or want to be involved because they want to contribute to the good cause of the initiative, which implies this category can be very broad: from small local companies who want to have a positive impact on their surroundings to large multinationals for whom it is one of the many subjects they contribute to through their company foundation. It is another example of influence in the landscape, although this influence can be local, as well as national and international.

4.6 Typology of private actor activities

The typology of private actor activities is characterized in the table below.

Table 5 – Roles and activities of private actors in ILIs.

Beneficiary	*Receiving financial support*	for activities in the landscape (e.g. improving business operations, implementing plans and programs).
	Receiving knowledge	from other companies on field-level experiences. Takes place between private actors in pre-competitive platforms or other actors in a landscape initiative. Contributes to the learning aspect of ILIs.
	Being contracted	for their expertise (e.g. on certification schemes or carbon credits) or other abilities (e.g. construction).
	Enabled business environment	through improvement in current business environment (e.g. increased security or sustainability of its supply chain) or emerging business environment (e.g. tourism companies or companies exploiting the added value of more sustainable business operations).
Reformer	*Improving business operations*	towards more sustainable business models in terms of social, economic and environmental impact inside or outside company grounds. Often referred to as 'responsible', 'sustainable' or 'best production practices'. Also includes complying with specific certification schemes.
	Preparing to improve business operations	by showing interest in improving business operations in the future or by developing plans.
	Modifying land use	by attributing part of their land to set-aside areas for forest conservation, biodiversity (e.g. wildlife corridor), reforestation (e.g. tree nursery), or local community development projects.
Resource provider	*Providing financial support*	for specific causes (e.g. forest/biodiversity protection, research, community development projects, improved production methods and certification procedures), or for the project in general (the money is then attributed to specific causes by another landscape actor). Financial resources can be provided at once, as regular contributions or as a part of the company's benefits.
	Preparing to provide financial support	through developing plans, de-risking deals or business cases.
	Providing knowledge	from their field of expertise (e.g. construction, certification requirements and legal advice), training or through conducting research (e.g. impact and census research). Other than the contracted companies, these companies provide their services without being financially rewarded for it.

	Providing materials	to other actors in the landscape initiative, most likely to farmers whom they provide with agro-inputs or technical solutions. This can be their supplying farmers, or farmers that are not connected to the company.
Participant	*Leadership*	by initiating collective action or providing initiative leadership.
	Participating in governance structure	with clear members and interaction between them (e.g. responsibilities and regular meetings).
	Participating in pre-governance activities	like discussions and dialogues on landscape-related subjects, or companies showing interest in future participation in a governance structure.
	Participating in external landscape projects	that are separate from business operations, like (often project based) reforestation, forest and biodiversity protection and local community development activities.
Target	Companies at whom the initiative is targeted and that execute activities in the landscape. This role has no underlying activities.	