

THE QUALITY OF PRIVATE SUSTAINABILITY STANDARDS IN THE DUTCH GARDENING SECTOR

MASTER SUSTAINABLE BUSINESS AND INNOVATION

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EXECUTIVE SUMMARY

This thesis focuses on identifying the measures Tuinbranche NL should take in order to promote sustainability in the Dutch gardening sector. This research concludes that the Dutch gardening sector is lacking a horticulture standard of high quality and a holistic approach to corporate sustainability. The recommended task for Tuinbranche NL is to reduce the amount of standards to two high quality standards: one performance standard to ensure all firms meet the legal minimum, and a process standard that allows firms to choose their own level of improvement, as well as their focus topics. If this proves to be too complex, the organisation could choose to endorse two existing standards, one stringent and one accessible, while working with them to improve their practices. Tuinbranche NL should guide both retailers and growers in the implementation of the standard(s), streamlining demands and building capacity to comply. Lastly, Tuinbranche NL is advised to bring together all actors in the sector to create a comprehensive, holistic sustainability strategy for the entire sector.

Firms are increasingly addressing sustainability in their supply chain (Maloni & Brown, 2006; Seuring & Müller, 2008). As an alternative for the ineffective (inter-)governmental efforts private sustainability standards are proposed. These are ‘a set of voluntary predefined rules, procedures, and methods to systematically assess, measure, audit and/or communicate the social and environmental behaviour and/or performance of firms’ (Reinecke, Manning, & von Hagen, 2012, p. 793). Due to their popularity, standards are proliferating, which creates confusion and leads to high costs for firms. To avoid this firms require a framework that helps assess the quality and suitability of a standard. This thesis aims at answering the following question: *Which factors determine the quality of the private standards applicable to the Dutch gardening sector?*

According to von Geibler (2013), quality of standards comprises of two elements: effectiveness and legitimacy. This thesis adds a third element: the management context. Adding to the complexity of private standards is the variety of products that a sector has to manage. To illustrate this aspect, this thesis focuses on two product groups in the Dutch gardening sector: horticulture, and wooden products. The assessed standards are Groenkeur, Milieukeur, MPS-ABC, MPS-GAP, MPS-SQ, FFP, NL Greenlabel and Organic, and PEFC and FSC. A multi-criteria decision analysis was performed (Figure 1). It demonstrates that wooden products standards are of a higher quality than the standards in the horticulture sector. Although, Milieukeur, FFP, Organic are close, they score lower than FSC and PEFC on several relevant criteria. Three criteria determine the differences in quality between the standards: stakeholder participation, transparency, and the management criteria. It can be concluded that, currently, the gardening sector is lacking a proper horticulture standard that can offer high quality sustainability impact reduction, strong transparency assurance that meets the demands of the growers. To fill this gap, Tuinbranche NL is recommended to implementing the suggested changes.

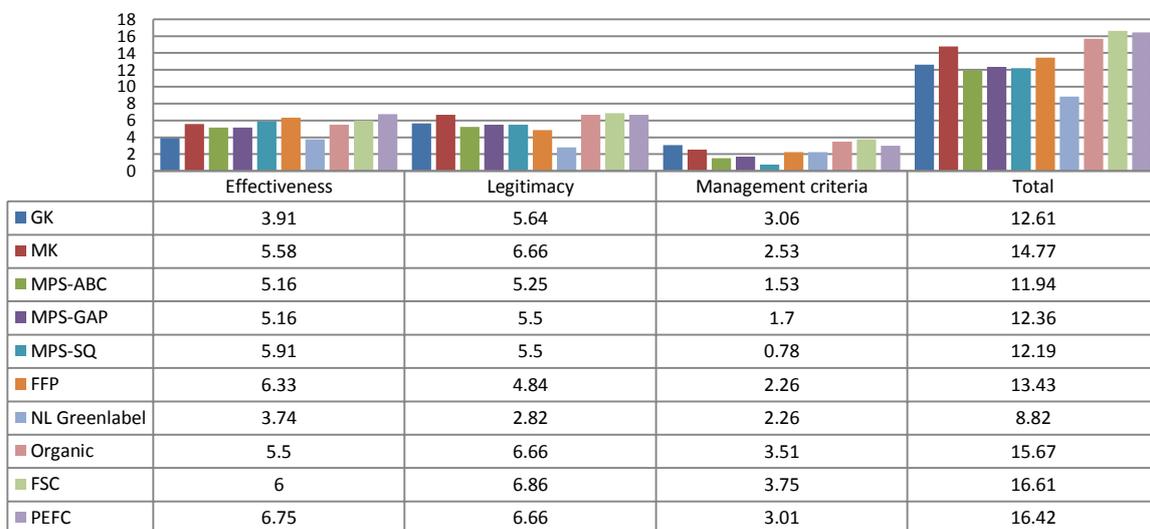


FIGURE 1 - SCORE OF THE MCDA FOR ALL STANDARDS

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ABBREVIATIONS

ASI	Accreditation Services International
CS	Corporate sustainability
ENDS	Environmental Data Services
FFP	Fair Flowers Fair Plants
FIAN	Food First Information and Action Network
FNV	<i>Federatie Nederlandse Vakbeweging</i> , Dutch labour union
FSC	Forest Stewardship Council
GLOBALG.A.P.	Global Good Agricultural Practices
HBAG	<i>Hoofdbedrijfschap voor de Agrarische Groothandel</i> , organisation of agricultural wholesalers
IAF	International Accreditation Forum
ICC	International Code of Conduct
IDH	<i>Initiatief Duurzame Handel</i> , Sustainable Trade Initiative
IFC	International Flower Coordination
ILO	International Labour Organisation
ISO	International Organisation for Standardisation
ITC	International Trade Centre
IUF	International Union of Food workers
LCA	Life-cycle assessment
LTO	<i>Land- en Tuinbouworganisatie</i> , sector organisation of the agricultural sector
M&E	Monitoring and evaluation
MCDA	Multi-criteria decision analysis
MPS	<i>Milieu Programma Sierteelt</i> , Environmental Programme Horticulture
MPS-ABC	The registration system, or process standard, of MPS, with a ABC-tiered performance measure
MPS-ECAS	Auditing body, mainly of the MPS standards
MPS-GAP	MPS standard based on GLOBALG.A.P.
MPS-HCS	Consultancy and training organisation, part of the MPS-group
MPS-SQ	MPS standard, Socially Qualified
MSC	Marine Stewardship Council
NGO	Non-governmental organisation
OLAA	<i>Organisatie Latijns Amerika Activiteiten</i> , Organisation of Latin-American activities
PEFC	Programme for the Endorsement of Forest Certification
RHDHV	Royal Haskoning DHV
RSPO	Roundtable on Sustainable Palm Oil
RvA	<i>Raad van Accreditatie</i> , Dutch accreditation board
SGS	Auditing body, e.g. of Groenkeur and Milieukeur
SKAL	Auditing body of Organic in the Netherlands
SMK	Standard setting organisation for Milieukeur
SSCG	Sustainable supply chain governance
SSCM	Sustainable supply chain management
VHG	<i>Vereniging Hoveniers en Groenvoorzieners</i> , sector organisation of garden professionals
WWF	World Wildlife Fund; also known as WNF, <i>Wereldnatuurfonds</i>
ZLTO	<i>Zuid LTO</i> , The southern branch of LTO

1. INTRODUCTION

Corporate sustainability (CS) is a topic that has gained major attention worldwide (Crews, 2010; Lozano, 2013; Maloni & Brown, 2006). Over the last decades, firms have been experiencing a clear call from their stakeholders to incorporate sustainability into their policy and practices (Dunphy, Griffiths, & Benn, 2003; Gupta, 2012; Vermeulen, 2013) and address their economic, social and environmental responsibility (Seuring, Sarkis, Müller, & Rao, 2008). One of the problems that has led to the rise of CS is inadequate supply chain management (Pedersen, 2009). Therefore, firms are increasingly looking across their firm's boundaries and are addressing sustainability in their supply chain (Maloni & Brown, 2006; Seuring & Müller, 2008).

In order to tackle sustainability along global supply chains, firms are in need of new international sustainable trade systems (Giovannucci & Ponte, 2005). The traditional (inter-)governmental efforts are considered to be ineffective at managing global production systems (Schmitz-Hoffmann, Schmidt, Hansmann, & Palekhov, 2014; von Geibler, 2013). Market-based governance is a suitable alternative to public initiatives (Reinecke et al., 2012; Schmitz-Hoffmann et al., 2014; von Geibler, 2013). One non-governmental tool often used to help ensure sustainable practices along a supply chain, is the private sustainability standard. A private sustainability standard can be defined as 'a set of voluntary predefined rules, procedures, and methods to systematically assess, measure, audit and/or communicate the social and environmental behaviour and/or performance of firms' (Reinecke et al., 2012, p. 793). Two well-known examples are the Forest Stewardship Council (for sustainable forestry) and The Rainforest Alliance (for tropical crops). Private standards have increased in popularity among firms (RESOLVE, 2012; Vermeulen, 2013). This increase in popularity has resulted in significant improvements in sustainable production and consumption (ISEAL Alliance, 2014d). However, it has also caused a proliferation of standards, creating confusion and a great deal of expenses for the users for assurance and contribution fees (Jaffee & Masakure, 2005; Nadvi & Waltring, 2004; Reinecke et al., 2012). This leaves firms with the difficult task of choosing a high-quality standard that fits their business, from the many available options.

Due to their complex nature and similarity, it is often difficult to distinguish between the different standards and determine their quality (Reinecke et al., 2012). Von Geibler (2013, p. 40) states that a private standard is of high quality if it meets two requirements: firstly, fulfilling the initiative's objectives, which in most cases means reducing negative social and ecological impacts (effectiveness) and secondly, the achievement of acceptance of the approach itself (legitimacy). Sustainable supply chain governance (SSCG) literature has identified general elements of a high quality standard based on effectiveness and legitimacy. However, von Geibler as well as the SSCG field ignore the uniqueness of supply chains and their respective sustainability issues (Harms, Hansen, & Schaltegger, 2013; Maloni & Brown, 2006). The firm-specific context can demand the formulation of management requirements from a sustainable supply chain management (SSCM) perspective. Firms require of strategies or systems that consider situation specific preferences, means and motives, while ensuring both effectiveness and legitimacy. What makes adopting a standard even more complex is that, while most scientific literature focuses on a single standard or product group, firms often deal with the complexity of various products and their respective standards (Agrawal, Smith, & Tsay, 2002). This thesis illustrates how a sector could tackle these problems and ensure a uniform and efficient approach to private standards use.

Given these problems, sectors require a strong change agent. This is emphasised by von Geibler (2013), who states that firms cannot effectively address sustainability challenges in their supply chain on their own; change requires the cooperation of several supply chain actors. A sector organisation could act as a change agent to manage this cooperation. This theory is employed in this thesis. The thesis was written in collaboration with Tuinbranche NLⁱ, the sector organisation of the Dutch garden centres and their suppliers. The sector has been experiencing both internal and external pressure to adopt more sustainable practices; in particular their use of

ⁱ The term 'Tuinbranche NL' refers to the organisation, not the sector itself. For the sector the term gardening sector is used.

harmful crop protection products has been criticised (Greenpeace, 2014a). This has triggered a movement for sustainability in the sector (Trommelen, 2014). As a part of this movement, the sector wants to re-evaluate their policy regarding the use of private standards. The aim is to implement the use of a standard across the entire sector that could help ensure sustainable practices along their value chain and across Europe¹. Currently, the sector has multiple standards at their disposal, ranging from standards with an industry-wide scope to very narrow product specific standards (see Appendix A & B). Each firm adheres to a different set of standards. A coherent stance concerning certification is lacking, preventing progress for the sector as a whole. This also burdens firms with unnecessary high costs and a confusing, or even contradicting, set of rules to comply with. The aim of this thesis is to formulate recommendations for Tuinbranche NL on the implementation of private standards. A framework has been developed to assess the quality of standards. This research focuses at answering the following research question:

Which factors determine the quality of the private standards applicable to the Dutch gardening sector?

Several sub-questions need to be addressed in order to answer this research question. In the first part of this thesis a framework is needed to assess the quality of private standards (chapter 0). This framework has been constructed from criteria that are deemed essential to the quality of a standard by scientific and industry literature, leading to sub-question 1:

SQ1: What criteria of effectiveness, legitimacy and management context of private sustainability standards are used to assess their quality?

In the second part of this thesis, the author assesses standards applicable to the Dutch gardening sector. In order to do so the gardening sector needs to be mapped (chapter 3). This is sub-question 2.

SQ2: What are the characteristics of the gardening sector and its sourcing?

By answering SQ2, the most important product groups of the sector are also determined. For these product groups the applicable private standards are identified. Subsequently, the chosen methods for data collection and analysis are further specified (chapter 4). To assess their quality, the standards are described in detail, which leads to sub-question 3 (chapters 5 & 6). Interviews provide an insight on the current practices regarding private standards in the sector, which leads to sub-question 4.

SQ3: Which private standards are applicable to the gardening sector and what are their characteristics?

SQ4: What is the current practice of application of standards in the sector and their experience with standards?

The answering of the research question results in an assessment of the standards currently in use in the sector (chapters 8 & 9). The assessment is discussed (chapter 10), and concluded (chapter 12), from which recommendations rise on the adoption of private sustainability standards in the Dutch gardening sector (chapter 13).

2. THEORY

The key challenge of this thesis lies in formulating a strategy for the Dutch gardening sector to address the sustainability issues in its supply chain. To do so, one first needs to know more about supply chain sustainability, identifying actors are involved, what challenges are they facing and how can they approach these challenges best. Special attention is given to the role of the sector organisation, a possible change agent. This thesis proposes the use of private sustainability standards as a suitable tool for sustainable supply chain management. The second part of this chapter therefore focuses on the benefits and concerns of this type of tool. As we are currently experiencing a proliferation of standards (Dehue, Meyer, & Hamelinck, 2007), it is important to have criteria to distinguish between all available options. The last section of this chapter gives an overview of the criteria identified in both literature and business practice.

2.1. ADDRESSING SUSTAINABILITY IN THE SUPPLY CHAIN

In the production of a product, a large number of firms are involved, often dispersed across the globe (Seuring & Müller, 2008). This is the so-called supply chain of a product, as visualised in Figure 1. The supply chain is defined as ‘the series of firms, including suppliers, customers, and logistics providers that work together to deliver a value package of goods and services to the end consumer’ (Maloni & Brown, 2006, p. 36). Each firm in the supply chain of a product executes several processes that have a social, economic and environmental impact. Figure 1 demonstrates several examples of sources of these impacts. The sustainability of an end product is therefore determined by its production processes and after-life (Seuring & Müller, 2008). Supply chains have become an important topic in the CS movement (Maloni & Brown, 2006; Pedersen, 2009). Supply chains have received notable attention from consumers (Reinecke et al., 2012; Vermeulen & Metselaar, 2015). Therefore, firms are increasingly addressing their impact beyond the traditional approach, throughout their entire supply chain; this has been followed by an equally increasing interest from academics in sustainable supply chains (Seuring et al., 2008).

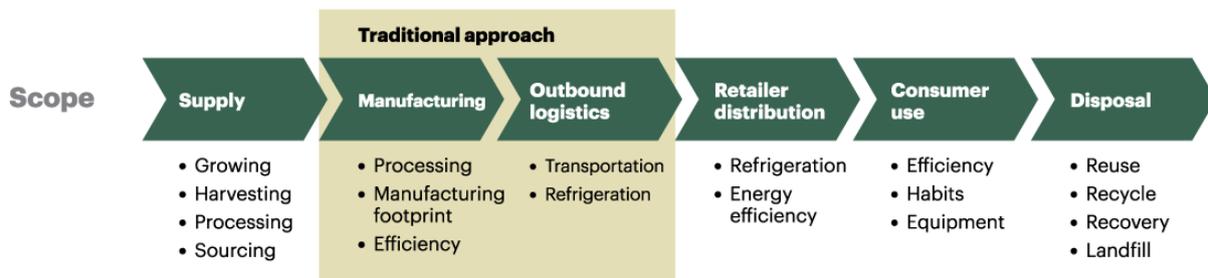


FIGURE 1 – EXAMPLE OF A PRODUCT'S SUPPLY CHAIN AND THE MOST IMPORTANT PROCESSES INVOLVED. ALL THESE PROCESSES HAVE AN IMPACT ON THE ENVIRONMENT (A.T. KEARNEY, 2010)

Most academics focus on the sustainability of a supply chain from a systems perspective. This field is named sustainable supply chain governance (SSCG). According to Vermeulen (2010), SSCG can be studied as a system consisting of different levels, shown in Figure 2, where the unit of analysis is the supply chain. SSCG deals with the combined efforts of firms in an industry to improve the practices along their supply chains. Another field occupied with the study of supply chains is sustainable supply chain management (SSCM). In contrary to SSCG, SSCM focuses on a single firm's management policies, actions taken and relations formed to improve the sustainability of the design, acquisition, production, distribution, use, reuse, and disposal of the firm's goods and services in order to achieve a sustainable competitive advantage (Seuring & Müller, 2008). This thesis examines sustainable supply chains from both perspectives to provide complete picture of sustainable supply chains in the Dutch gardening sector.

Most SSCG literature addresses the supply chain of one product group, such as coffee (Giovannucci & Ponte, 2005; Ponte, 2004; Reinecke et al., 2012) palm oil (Ponte & Cheyns, 2013; von Geibler, 2013) or food (Jaffee & Masakure, 2005; Maloni & Brown, 2006). SSCG studies have demonstrated that supply chains are very complex

(Seuring & Müller, 2008). As shown in Figure 2, SSCG acts on several levels. The firm level considers the individual firms and analysis their interactions with each other and the other stakeholders of one product or commodity. Each of the firms has an impact on its (social) environment. On a higher aggregation level, the global chain level, the complexity of supply chain systems becomes evident. The global supply chain of one product contains many actors spread across the globe, ranging from producers, to distributors to the retailer who eventually brings the product to the consumer. In practice, most firms do not focus on one product supply chain, but manage an extensive product portfolio, consisting of a diverse array of products and their respective supply chains. In all these supply chains, a firm is only one single actor in a large network of actors, that operates on a transnational level and is influenced by global market dynamics (Lambert & Cooper, 2000). Therefore, SSCM can be an overwhelming task for firms.

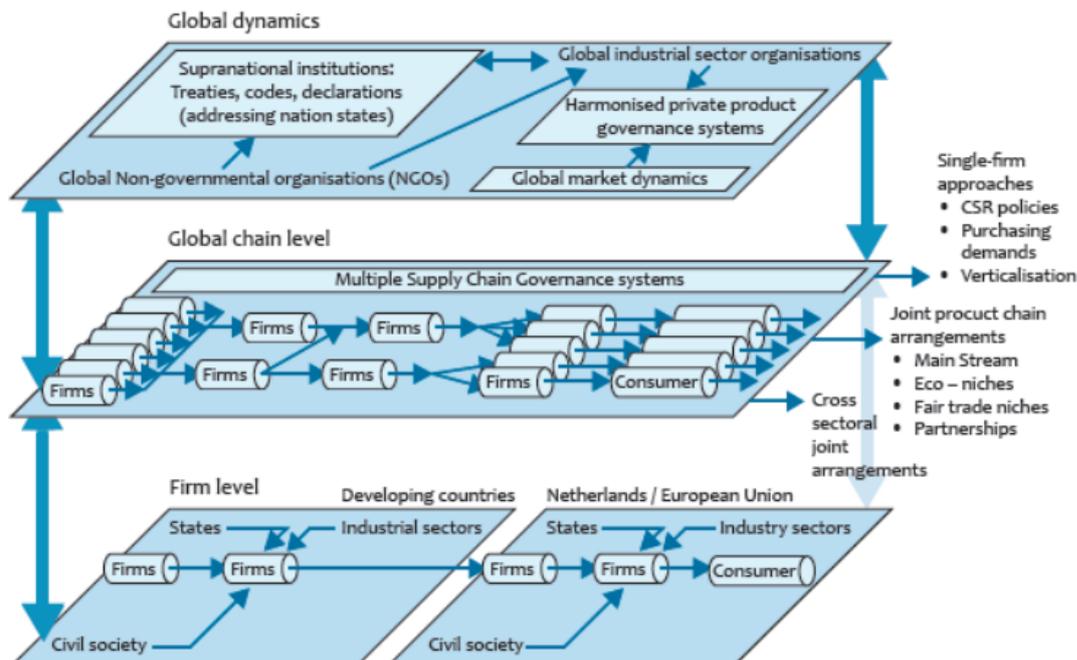


FIGURE 2 - GLOBAL SUPPLY CHAIN GOVERNANCE SYSTEMS: THREE LEVELS OF ANALYSIS (VERMEULEN, 2010).

Considering this complexity, firms could choose to rely on public tools and structures to address their supply chain. However, literature indicates that in order to transform a market, governmental methods are insufficient. (Inter-)Governmental efforts are considered to be ineffective at managing global production systems, due to their transnational and complex nature (Vermeulen & Metselaar, 2015; von Geibler, 2013). Moreover, the capacities and expertise of state institutions are insufficient to develop the sophisticated tools required for sustainable trade. Market-based governance is therefore considered a more suitable approach than public initiatives (Reinecke et al., 2012; Schmitz-Hoffmann et al., 2014; von Geibler, 2013). Reinecke et al. (2012) state that private methods have proven to fill the gap left by weak states. Schmitz-Hoffmann et al. (2014) add that they are more flexible and can be set up much faster than the typically slow-paced public legislation, making them better suited for regulating highly innovative sectors and quickly developing topics.

However, this does not mean that firms must operate individually. In fact, it is often argued that this task cannot be efficiently executed by one single supply chain actor (Braga, Ionescu-Somers, & Seifert, 2010; von Geibler, 2013). Firms are increasingly entering cooperation projects like joint arrangements, which can increase the efficiency of the SSCG efforts of a sector (Vermeulen, 2013). Uncoordinated attempts to become more sustainable can leave gaps, or even negate the efforts made. The corporate world needs more change agents to help an entire sector uniformly make the transition towards a more sustainable way of doing business (Dunphy et al., 2003). While this thesis proposes that sector organisations are a suitable actor to adopt this role, the literature describing their role in the transition to sustainability is sparse. However, innovation theory

can be used to demonstrate the importance of a sector organisation in this transition. Dieleman (2007) states that major innovations are often not immediately adopted. He uses innovation theories by Callon (1987) and Latour (1987) to explain that people need time to adjust to new ways of working. Pedersen (2009) confirms that managers in firms act according to existing priorities, strategies, ideologies and principles. These regimes have become institutionalised in the organisation, or often even in the entire industry. Ideally, for an industry to become more sustainable, a majority of the sector has to break out of the old regime and adopt the new sustainable practices, as is explained by the diffusion theory of Rogers (Dieleman, 2007). To reach this majority, change agents are incredibly important. A sector organisation can fulfil this role, as they are in a unique position to inform, mobilize and support firms. Moreover, the change has to be implemented along the entire supply chain to reduce its overall sustainability impact. As an umbrella organisation, sector organisations have connections throughout the supply chain. Therefore, they can facilitate and streamline adoption of a policy or tool, creating uniformity across the industry. This thesis proposes the use of private sustainability standard as this tool. Potts et al. (2014) list several reasons why private sustainability standards are a suitable method for firms to increase the uptake of sustainable practices in their supply chain. Standards offer a systemic method for ensuring sustainable practices in a production cycle. Moreover, they have the unique ability to be applied across an entire sector or market. Therefore, private standards are a very suitable tool for CS.

2.2. PRIVATE SUSTAINABILITY STANDARDS

Standards provide information on the characteristics of the product and/or its production and processing methods (such as origin, safety or socio-economic conditions) (Ponte, 2004; Waide & Bernasconi-Osterwalder, 2008). Standardisation of commodities is common phenomenon in global trade (Guthman, 2007; Rosenberg, Eckstein, & Brett, 2009). They serve to correct market information failures and ensure product quality (Waide & Bernasconi-Osterwalder, 2008).

Some standards are set by the government in the form of regulation (Ponte, 2004). Another, increasingly popular option is the private sustainability standard (also known as voluntary sustainability standard). The adoption of a private standards is intended to be voluntary, as they are not required by legislation or otherwise enforced by government regulation (Schmitz-Hoffmann et al., 2014). The use of private standards is a major trend in SSCM (Schmitz-Hoffmann et al., 2014; Vermeulen, 2013). They have become an important subject for research by the academic world, the industry and NGOs. Two important initiatives focus on these private sustainability standards are the ISEAL Alliance and the RESOLVEⁱⁱ report.

The ISEAL Alliance, the global membership association for sustainability standards, is an important authority on the quality of private standards (ISEAL Alliance, 2014a). This non-profit organisation was set up in the late 1990s by several well-known certification organisations to enable collaboration and coordination between standards (ISEAL Alliance, 2014f). The ISEAL Alliance aims at increasing the impact of standards through enhancing their effectiveness (ISEAL Alliance, 2014b). Hereby, focus lies on the entire standard system. To that end, they have developed several Codes of Good Practice: the Standard Setting Code (2004), the Impacts Code (2010), and the Assurance Code (2012) (Schmitz-Hoffmann et al., 2014). To become a member of the ISEAL Alliance the standard system needs to meet the Codes (ISEAL Alliance, 2015b). An important definition of quality is captured in ISEAL's ten Credibility Principles. Published in June 2013 the principles lists ten requirements for credible standard systems that capture the essentials for a positive impact (ISEAL Alliance, 2013; Schmitz-Hoffmann et al., 2014).

Firms adopting standards have also mapped the important criteria a standard system should meet, often in collaboration with NGOs and/or consultancies. An extensive report on the matter was written by the RESOLVE initiative. The David and Lucile Packard Foundation, the Walton Family Foundation and Mars, Incorporated

ⁱⁱ Technically, RESOLVE is a non-profit mediation and facilitation organisation that served as the Secretariat for the assessment. For convenience, the report is from here on referred to as the RESOLVE report.

joined forces to establish ‘an independent, robust assessment of the state of knowledge regarding voluntary standards and certification systems that promote product sustainability’ (RESOLVE, 2012, p. i). This report describes the state of knowledge on the performance and potential of standards, and which knowledge is still lacking. The report aims at answering two questions: ‘What is known about the environmental, social, and economic impacts of certification and labelling?’ and ‘What is known about whether standards and certification systems are effective tools for promoting sustainability, and if so, under what conditions?’ (RESOLVE, 2012). Impact is here defined as ‘performance, i.e. their achievement of intended outcomes, as well as their influence and potential to leverage large-scale change’ (p. ES-5). They distinguish between direct impact on the triple bottom line, and indirect impacts such as learning effects, institutional effects, and interaction effects. The very detailed and extensive report ends with several recommendations to standard systems related to their effectiveness.

A private sustainability standard can be defined as ‘a set of voluntary predefined rules, procedures, and methods to systematically assess, measure, audit and/or communicate the social and environmental behaviour and/or performance of firms’ (Reinecke et al., 2012, p. 793). If a firm seeks to meet a standard, they are assessed, often through auditing, to determine whether they do comply with all criteria set by a certain standard, and subsequently the firm gets certified (RESOLVE, 2012; Schmitz-Hoffmann et al., 2014). Often these certifications are displayed on products in the form of an (eco-)label, informing the consumer and allowing them to compare products based on sustainability (RESOLVE, 2012). However, before this audit can occur, the firm has to adopt a certain set of rules, and monitoring and compliance methods (Getz & Shreck, 2006). If the firm is not at the beginning of the supply chain of a product, it must make sure its suppliers also meet the rules of the standard. This requires mapping and managing the entire supply chain for their product. In firms with a large, varied product portfolio, this is a complex task (Lambert & Cooper, 2000).

2.1. THE STANDARD SYSTEM

A standard is at the heart of a larger standard-system (Schmitz-Hoffmann et al., 2014). A standard system can be defined as ‘the group of organisations responsible for the activities involved in the implementation of a standard including standard-setting, capacity building, assurance, labelling and monitoring’ (ISEAL Alliance, 2013, Chapter Appendix 1).

STANDARD-SETTING

A standard is (ideally) constructed by experts and stakeholders in the field. The standard describes the objectives and principles it upholds, the criteria one needs to meet to get certified, compliance indicators, and application guidance. Private standards are often set up by multiple non-governmental parties including industry and NGOs, although public actors do get involved at times (Potts et al., 2014; Schmitz-Hoffmann et al., 2014; von Geibler, 2013).

There are various different types of standards; they can be categorised based on different features. Firstly, standards can be distinguished based on their focus. Often standards address a combination of environmental, social, and/or economic topics (Potts et al., 2014). Examples are producer profitability, business development, livelihood and labour conditions, community development, or protection of the environment (International Trade Centre (ITC), 2011). Most standards put the emphasis on a certain combination of topics, for example environmental performance (e.g. Marine Stewardship Council (MSC)), or socio-economic issues (e.g. Fair Trade) (MSC, 2015; Potts et al., 2014).

Secondly, standards differ in their approach. Meidinger (2001) distinguishes between performance and process standards. Performance standards set specific criteria firms have to meet, whereas process standards leave firms free to set their own performance level, but demand firms to adopt a specific environmental management system. Meidinger states that the assumption underlying process standards is ‘that a management system will achieve superior environmental performance over time, while facilitating greater

efficiency and adaptability than [performance] standards' (2001, p. 10,163). Performance standards, on the other hand, ensure that all certified firms are at or above the same standard. Dendler (2014) addresses a third type of standard: the meta-standard. This type of standard acts as an overarching standard, specifying what a more sustainable product implies and which procedures are considered necessary for private sustainability standards to follow.

Another way standards can be categorised is by which part of the supply chain they focus on. Schmitz-Hoffman et al. (2014) states that in order to substantiate sustainability claims, most standards systems offer an additional standard specifically to enable traceability; these standards are also known as 'chain of custody' standards. These standards differ from regular production standards in that they aim at processors, distributors, and other actors further down the supply chain. They thus entail different demands than production standards.

CERTIFICATION

The certification body is concerned with assuring firms' compliance with the standard. The assurance is provided through an inspection by a qualified auditor of the firms aiming to get certified. The forms of auditing available differ in detail, stringency, and independence. Schmitz-Hoffmann et al. (2014) add that, traditionally, the assurance body is a third-party organisation; however, new approaches are emerging. Often certification bodies are certified themselves, referring to international (ISO, ISO/IEC) and European (EN) standards, such as ISO/IEC 17065:2012 (Almeida, Sousa, Dias, & Branco, 2015).

ACCREDITATION

Auditing is crucial to the quality of the standard. Therefore, the competence of the auditing body must be ensured by oversight and training by an accreditation body (RESOLVE, 2012). Historically, the accreditation has been done by the standard-setting organisation themselves, or by a National Accreditation Body (Schmitz-Hoffmann et al., 2014). In the Netherlands the main authority for accreditation is the *Raad van Accreditatie* (RvA) (RvA, 2015a). This accreditation body was previously governmental, but is currently private. It monitors organisations on the quality of their operations, in the broadest sense. For standard setting organisations the RvA assures their expertise, impartiality, independence and continuous improvement (RvA, 2015b). The RvA is a member of the International Accreditation Forum (IAF), the world association of accreditation bodies and other bodies interested in conformity assessment (IAF, 2015a, 2015b).

More recently, standard-setting organisations have started to appoint independent, international accreditation bodies to monitor the certification bodies, such as IOAS, Social Accountability Accreditation Services (SAAS) or Accreditation Services International (ASI), ensuring better global consistency in the performance of certification bodies (Schmitz-Hoffmann et al., 2014).

GOVERNANCE AND FINANCE

The organisation of a standard is generally managed by one of two types of governance bodies: a membership-elected governance body, or an appointed, representative governance body. The revenue streams are composed of donor funding, fees for services involved in certification, accreditation fees, membership fees, and stakeholder education or training schemes, as well as licensing fees from eco-labels.

2.2. BENEFITS AND CONCERNS

Private sustainability standards are becoming increasingly popular as a market mechanism for driving sustainability (Potts et al., 2014). They have been proven to have a significant impact on sustainable production and consumption by creating a demand for sustainable products, and a supply to meet that demand (ISEAL Alliance, 2014d; Schmitz-Hoffmann et al., 2014). On top of the sustainability effect, private standards can have a plethora of benefits to individual firms. Table 1 lists the beneficial effects of standards per supply chain actor. On the buyer-side standards act as a tool for both consumers and firms to identify sustainable practices

(Schmitz-Hoffmann et al., 2014). Labels and claims are appealing to buyers and customers, creating demand for higher standards, which can give certified suppliers a competitive advantage (Giovannucci & Ponte, 2005; Schmitz-Hoffmann et al., 2014). In the supply chain, standards can help structure the purchasing policy of firms by formulating detailed performance requirements their suppliers have to meet (Schmitz-Hoffmann et al., 2014; Vermeulen, 2013). Standards are an influential coercion tool, as competition amongst suppliers increases the likelihood of compliance (Vermeulen, 2013). On the supply-side, they guide a firm to more sustainable practices, which can have multiple beneficial effects on efficiency, and thus revenue streams (Rosenberg et al., 2009; Schmitz-Hoffmann et al., 2014). For all firms in the supply chain, adopting a standard can improve its reputation (Vermeulen, 2013) and thus, attract environmentally or socially aware customers, creating a competitive advantage (Haake & Seuring, 2009).

TABLE 1 – BENEFITS OF ADOPTING A PRIVATE STANDARD PER SUPPLY CHAIN ACTOR VERSUS NO CERTIFICATION (¹RESOLVE, 2012; ²KESSLER & SIMONS, 2013; ³REARDON, CODRON, BUSCH, BINGEN, & HARRIS, 1999; ⁴VERMEULEN, 2010; ⁵PONTE, 2004).

<p>Producers</p> <ul style="list-style-type: none"> • Improved product quality^{1,2} • Access to preferred customers^{1,4} • Improved net income^{1,2} • Better environmental and working conditions¹ • Greater on-farm efficiency^{1,4} • Reduced input supply² • Improved yields² • Long-term protection of natural resources¹ • Potential for price premiums^{1,2,4} • More stable market access^{1,2} • Access to training/support^{1,4} <p>Manufacturers and processors</p> <ul style="list-style-type: none"> • Assured sustainable raw material supply¹ • Quality improvements¹ • Alternative to formal regulation¹ • Compliance with customer demands¹ • Company norms¹ • Supply chain transparency/efficiency¹ • Company/brand reputation¹ <p>Brokers and wholesalers</p> <ul style="list-style-type: none"> • Improved product quality¹ • Better organised producers¹ • More stable markets¹ • Preferred supplier status^{1,4} <p>Retailers</p> <ul style="list-style-type: none"> • Social license to operate¹ • Company/brand reputation^{1,3} • Supply chain transparency/efficiency¹ • Increased customer loyalty¹ • Improved product quality¹ • More stable supply¹ • Reduced supply and reputational risks^{1,3} • Increased market access^{1,3} • Product niche definition³ <p>Customers</p> <ul style="list-style-type: none"> • Improved product quality^{1,3} • Better food safety⁵ • Healthier product^{1,3,5} • Alignment with personal values on social and environmental issues^{1,5}
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Due to these benefits, governments and firms are increasingly committing themselves to certification based on private standards (ISEAL Alliance, 2014d). For nearly all agricultural commodities some form of standardisation of sustainability has taken place (Rosenberg et al., 2009). However, there are concerns regarding the increasing popularity of private standards. The trend has resulted in a proliferation of private sustainability standards (Figure 3), potentially causing more confusion than progress amongst their users (Dehue et al., 2007; Dendler, 2014; Reinecke et al., 2012). Schmitz-Hoffman et al. (2014) express concerns regarding the increasingly high costs, both time and monetary. These costs are related to the investments to achieve compliance and the costs of auditing to demonstrate compliance, which is often at the expense of the company wishing to get certified. Although these costs will in some cases earn themselves back through increased sales, not every firm has the resources to make the initial investment. This could lead to exclusion of the less affluent firms, particularly smaller firms in the developing world (Schmitz-Hoffmann et al., 2014).

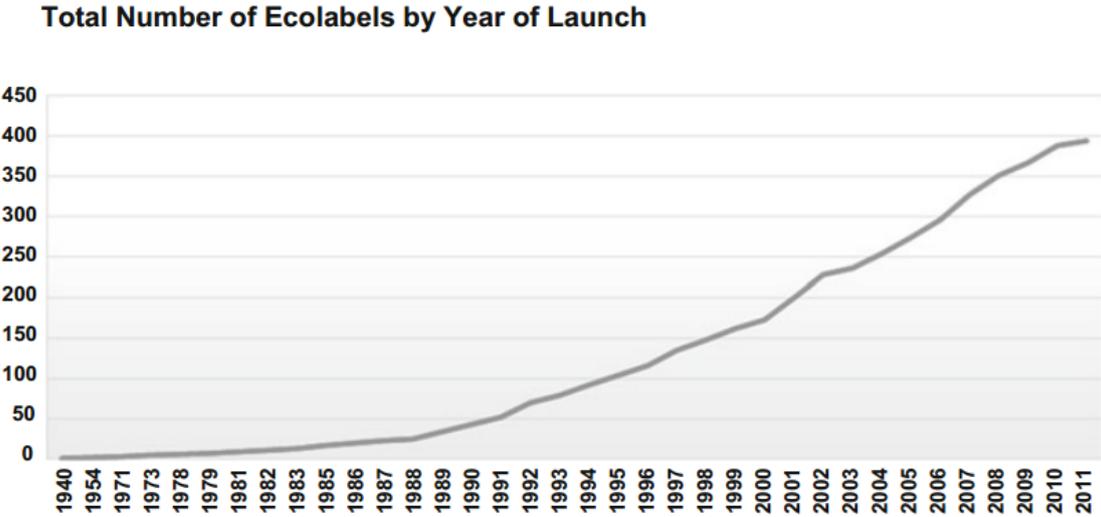


FIGURE 3 - GROWTH IN LABELLING INITIATIVES OVER THE LAST DECADES (SCHMITZ-HOFFMANN ET AL., 2014)

Another concern the Schmitz-Hoffmann et al. (2014) voices relates to the impact of private standards and the claims made concerning that impact. With the increased use of standards by firms to fulfil their corporate sustainability, stakeholders are asking for evidence that the standard is in fact improving the practices in the supply chain. This requires stronger monitoring systems and meticulous measuring of data. A related concern is green washing, the act of engaging in symbolic communications of environmental issues without substantially addressing them in actions (Walker & Wan, 2012, p. 227). As Schmitz-Hoffman et al. (2014) state some critics worry that standard systems and/or their users are making false or exaggerated claims. These false claims can be simply untrue or too vague or difficult to verify. Similar concerns are voiced in the State of Sustainability Initiatives Review by Potts et al. (2014). As they point out, the assurance process of a standard might have imperfections, allowing for non-compliance to be communicated as ‘compliant’ in the marketplace.

TABLE 2 - CONCERNS REGARDING THE USE OF PRIVATE STANDARDS (¹VERMEULEN, 2013; ²SCHMITZ-HOFFMANN ET AL., 2014; ³REINECKE ET AL., 2012; ⁴GETZ & SHRECK, 2006; ⁵GUTHMAN, 2007; ⁶POTTS ET AL., 2014)

<p>Impact related concerns</p> <ul style="list-style-type: none"> • Bias towards the first links of the supply chain¹ • Neglecting of transport impacts¹ • Bias towards well-known sustainability issues¹ • Focus on developing world⁶ • The global standard principles criteria being inappropriate for local conditions and systems⁶ • Not legally binding² <p>Assurance concerns</p> <ul style="list-style-type: none"> • Difficult to measure improvements² • Imperfections in assurance processes allowing for non-compliance to be communicated as 'compliant' in the marketplace⁶/No measurement or false claims² <p>Organisational concerns</p> <ul style="list-style-type: none"> • High initial investment^{2,3,4,6} • Little flexibility⁴ • Complex and difficult process⁵ • Disturbance of local society, its socio-economic situation and social norms⁴

These concerns reveal two fundamental problems in the field of sustainability standards. Firstly, there is an excess of standards available. Standards were originally conceived to simplify SSCM (Ponte & Cheyng, 2013). Buyers use them as way to distinguish between suppliers based on sustainability performance. However, with too many standards available, that it has become nearly impossible for both consumers and suppliers to make a meaningful distinction. This relates to the second problem, namely the fact that not all standards are of equal quality. As stated above, some standards only partially address the existing sustainability impacts of a supply chain and may even entice green washing. On the other hand, some standards may be of high quality, but do not fit the firm's vision and mission and, thus, not applicable. In the light of these concerns (Table 2), it becomes clear that firms should carefully select which of the available standards to adopt. This proves a difficult choice to make, as the competing standards are often overlapping in design, content and intentions (Reinecke et al., 2012). Therefore, a comprehensive assessment framework is developed in this thesis.

2.3. THE QUALITY CRITERIA OF PRIVATE STANDARDS – THE GOVERNANCE PERSPECTIVE

For a firm to make a sound decision on which standard(s) to adopt, it first needs to assess the quality of the available standards. This requires a definition of what is understood by good quality (Schmitz-Hoffmann et al., 2014). This is necessary to make informed comparisons of findings and methodologies and choose a standard that will provide the competitive advantage sought by the firm. The definition of quality of private standards used in this thesis originates from von Geibler (2013). He has proposed that a private standard is of high quality if it meets two requirements (2013, p. 40): firstly, it should fulfil the initiative's objectives, which generally means reducing negative social and ecological impacts (i.e. effectiveness); secondly, the approach itself should achieve general acceptance (legitimacy).

EFFECTIVENESS

For a standard to make a difference its effectiveness is essential (ISEAL Alliance, 2014c). An effective standard brings about more sustainable production practices and drives long-term improvements (ISEAL Alliance, 2014e, 2015a). Private sustainability standards are a relatively new tool for SSCM and dealing with several challenges. According to the ITC (2011) many of these revolve around measuring their impact: what is measured, why it is measured, how is it measured and how does it compare to other alternatives?

It is important to consider the difficulty of measuring effectiveness due to the causal link between the changes that are caused through the compliance with a standard and the long-term impacts on society and the environment (Schmitz-Hoffmann et al., 2014). Moreover, it is often difficult to disentangle the role of a

standard from other factors, such as governmental regulation and the broader political and economic context (Kalfagianni, 2010).

LEGITIMACY

Von Geibler (2013) emphasises that, although the discussion on private standards tends to focus on effectiveness, legitimacy is equally important. It ensures acceptance of the standard by the sector as appropriate and justified. Von Geibler argues that as private standards lack the automatic legitimacy of state actors, the standard system depends on the perception of their stakeholders and audience. Hereby procedural aspects such as transparency and stakeholder participation, as well as the performance of the standard are taken into account. Von Geibler refers to the input and output legitimacy by Scharpf (1999), where a distinction is made between procedural aspects such as transparency and participation (input legitimacy), and the acceptable, positive and effective performance of the standard (output legitimacy). Therefore, the legitimacy of a standard is partially based on (the perception of) its effectiveness.

Various studies and reports on the quality of private standards do discuss both effectiveness and legitimacy, often in the form of one comprehensive definition. ISEAL uses credibility (ISEAL Alliance, 2014b); RESOLVE and Vermeulen discuss performance (RESOLVE, 2012; Vermeulen, 2013), while Kalfagianni (2010) considers effectiveness as a sub-variable to legitimacy. This thesis uses the definition of von Geibler and addresses legitimacy and effectiveness separately in order to build an assessment framework that assesses strictly delimited criteria. The following section lists the criteria that have been identified.

EFFECTIVENESS: CLARITY OF STANDARD FORMULATION

The first criterion considered in the literature is having a clear and precise description of the standard (Vermeulen & Metselaar, 2015). The way a standard system defines sustainability can have a high impact on the results of the use of the standard, as clear definitions prevents misinterpretation (ISEAL Alliance, 2013). A mission and vision statement along with, clearly formulated objectives, explicit methods to achieve set goals, with clear criteria, operationalised and preferably quantified, and timetables ensure the system is aimed at sustainability and does not stray (ISEAL Alliance, 2013; von Geibler, 2013).

EFFECTIVENESS: RELEVANT OBJECTIVES

A standard cannot tackle all global sustainability issues (Epstein & Buhovac, 2014). Therefore, certain sustainability objectives are set. An effective standard only encompasses criteria that are relevant to achieving these objectives, to avoid unnecessary costs and barriers (ISEAL Alliance, 2013). However, the selected objectives should be relevant and all-inclusive. As stated above, Vermeulen (2013) has identified several deficiencies in current standards. According to the author the ideal standard is all-inclusive, addresses the relevant links in the chain, and should 'be implemented with clear rules and regular independent compliance control' (2013, p. 11). Von Geibler (2013) confirms this view, stating that a standard system needs to cover the whole value chain and its links, and focus on the key sustainability concerns, while accounting for local variance to ensure relevance to local conditions. This was also stated by Potts et al. (2014), who argue that global criteria may constrain the appropriateness of a standard for local conditions. Moreover, von Geibler stresses the importance of taking the indirect effects of the standard into account when formulating how to achieve the set objective. The chosen methods may cause impacts of a different nature in the same or even other supply chains. To prevent shifting the problem elsewhere, these effects need to be considered carefully. This makes the standard-setting process very difficult due to the high complexity of the cause-and-effect chains. An appropriate method to set the standard, scientifically based and executed by experts, involvement of stakeholders, and regular revision can contribute to a higher relevance (ISEAL Alliance, 2013).

EFFECTIVENESS: A STRONG MONITORING AND EVALUATION (M&E) SYSTEM

As the system is aimed at (continuous) improvement, a strong monitoring and evaluation system is needed to (scientifically) establish whether the chosen approach of the standard is leading to the desired outcomes (ISEAL

Alliance, 2013; von Geibler, 2013). Ideally, the measurement of performance of the standard system is done both internally, for the purpose of learning and continuous improvement, and externally, to avoid conflict of interest (RESOLVE, 2012).

EFFECTIVENESS: A BROAD REACH

To have a significant impact, the standard systems needs to be adopted by as many organisations as possible, both SMEs and large corporations (RESOLVE, 2012). In order to motivate firms a positive cost-benefit ratio is highly beneficial (von Geibler, 2013). Flexibility of methods, whereby the focus lies on outcome, not a specific method, as well as cultural sensitivity also contributes to a broad reach (ISEAL Alliance, 2013).

EFFECTIVENESS: ACCESSIBILITY

Closely related to having a broad reach, is the accessibility of the standard. The standards should not pose unnecessary (entry-)barriers, such as high costs or overly complicated requirements (ISEAL Alliance, 2013). However, this should not come at the expense of the rigour of the assurance process (Schmitz-Hoffmann et al., 2014). Kalfagianni (2010) states that stringency and comprehensiveness can heavily influence the accessibility of a standard. High stringency and comprehensiveness might increase the probability of compliance, but lower participation. A very stringent standard might only attract those firms who already meet the set criteria. In those cases, the standard primarily serves as a marketing tool rather than a tool for behavioural change. In setting the requirements a balance should be struck between stringency and practicability (von Geibler, 2013). For those firms that struggle to comply with the set rules, the standard system should provide help to build capacity for achieving better outcomes (RESOLVE, 2012; Schmitz-Hoffmann et al., 2014).

EFFECTIVENESS: COORDINATION WITH OTHER STANDARDS

As stated in section 2.2, the number of private sustainability standards is increasing rapidly. To avoid fragmentation, inconsistencies and incompatible certification systems, it is important to have some form of coordination between the competing standards (ISEAL Alliance, 2013; von Geibler, 2013). Coordination also has the advantages of i.e. a shared auditor registration and economy of scale (RESOLVE, 2012).

EFFECTIVENESS: EFFICIENCY

A standard system is expected to perform as efficient as possible to keep delivering improvements. This requires streamlined decision-making, collaborating with other standards, a business model that optimises sustainability impact, while minimizing costs and effort, and regular progress measurement (ISEAL Alliance, 2013).

EFFECTIVENESS: CONTINUOUS IMPROVEMENT AND LEARNING

Important to all management systems is continuous improvement and learning (Crews, 2010). Examples of mechanisms that ensure learning are building or joining a community such as the ISEAL Alliance, feedback mechanisms for stakeholders, and forums for exchange of expert information (von Geibler, 2013).

LEGITIMACY: TRUSTWORTHY ASSURANCE

Assurance is an important part of the standard system. To have a measurable impact, certified organisations need to perform above a specified level (ISEAL Alliance, 2013). That performance is captured by the criteria set in the standard. Only when compliance with the criteria can be verified, the standard can prove its effectiveness (Kalfagianni, 2010; RESOLVE, 2012). Standards can differ in the stringency of requirements (Kalfagianni, 2010). Depending on the aspirations of the standard the stringency may range from entry-level to best-practice level (ISEAL Alliance, 2013). To prove its effectiveness, a legitimate standard has a reliable assurance system in place that ensures compliance with the set criteria and has formulated consequences for non-compliance (von Geibler, 2013). A reliable assurance system entails third-party auditing, by properly trained professionals, performing audits at least once a year (ISEAL Alliance, 2013).

LEGITIMACY: IMPARTIALITY

Credibility is essential for the success of a standard system. In order to be credible, the standard system, and especially the assurance body, should to be impartial (ISEAL Alliance, 2013). Therefore, a standard system needs mechanisms to prevent and address conflicts of interest (RESOLVE, 2012). Clear procedures and rules can function as such mechanisms (ISEAL Alliance, 2013). In order to avoid conflict of interest, it is recommendable to avoid having a standard system in which one actor occupies several or all posts (von Geibler, 2013). As stated above, a standard system consists of several components, each responsible for a specific task. Several of the components, most notably the assurance and accreditation, are responsible for assuring impartiality and truthfulness. These control systems can only perform their task well if they are done by an independent, external entity (ISEAL Alliance, 2013; von Geibler, 2013).

LEGITIMACY: TRUTHFULNESS

Claims made by the standard system need to be correct, and not misleading. This is especially true for consumer products in the case of eco-labels. The benefits of a certified product needs to be clear, otherwise the standard might be seen as a form of green washing (Dahl, 2010). A standard can facilitate truthfulness by having the following mechanisms in place: controllable claims and statements; correct referencing; comprehensive and impact of the standard; a traceability mechanism for the certified products; a sanction mechanism for incorrect use of the standard; comparable performance data of the certified firms available; proper accreditation (ISEAL Alliance, 2013).

LEGITIMACY: TRANSPARENCY

Transparency is another crucial condition for a standard system to be perceived as legitimate. This builds trust and understanding (ISEAL Alliance, 2013). The system needs to be transparent in decision-making, implementation, and evaluation (RESOLVE, 2012). ISEAL (2013) points out several ways a standard must be transparent:

- In standard setting, the standard itself, as well as information on the standard system, should be freely and publicly accessible online. This also applies to a database of certified firms;
- In assurance, information made available includes, at minimum, the status of certification assessments, stakeholder input and how it was addressed, decisions on assessments, the names and status of certified enterprises, the scope of the certificate, as well as those whose certificates have been withdrawn or suspended, and the name of the assurance provider;
- In M&E of the standard, information made available includes indicators being measured, sources of data, outcome and impact evaluation reports, and resulting changes to the system.

LEGITIMACY: STAKEHOLDER ENGAGEMENT

A standard system needs support from its stakeholders. Stakeholder engagement can foster buy-in, increase efficiency, and lend their strengths to achieve a greater impact (RESOLVE, 2012). Stakeholders can act as advocates, experts and participants, but also opposition (ISEAL Alliance, 2013). Therefore, it is recommendable to include the stakeholders in the standard system. This can often be quite difficult as stakeholder may have conflicting interests. A good standard system tries to find a balance between these interests, and aims at consensus and trust (von Geibler, 2013).

LEGITIMACY: FINANCIAL SUSTAINABILITY

The RESOLVE report (2012) states that, as with any other organisation, financial sustainability of the standard system is important. In order to promote sustainability the standard system itself should also have set up a financially sustainable business model. This means the standard should be financially independent and should not rely on subsidies or other external finances.

LEGITIMACY: COMPLIANCE WITH LEGAL REGULATIONS.

As von Geibler (2013) states, compliance with national, regional, and local legislation is a necessity for a standard system to be effective. Non-compliance with the legal regulations may create unnecessary complexity.

IS THIS ENOUGH?

The previous section has focused on quality criteria from a governance perspective. However, in practice, the success of implementation at a firm equally depends on its suitability to the specific supply chain (Epstein & Buhovac, 2014; Mainville, Zylbersztajn, Farina, & Reardon, 2005). This suitability is determined by qualities that are often sector- or even firm-specific (Maloni & Brown, 2006). Although general quality criteria can be useful to distinguish between standards, it is being stressed that the standards are also defined by their approach and how these approaches differ from one another (Vallejo & Hauselmann, 2005). This accounts for differentiation in the set of requirements, certification methodologies, as well as target customers. This implies that the quality of a standard does not only depend on general, but also on management criteria.

2.4. THE QUALITY CRITERIA OF PRIVATE STANDARDS - THE MANAGEMENT PERSPECTIVE

The field of SSCM focuses on the management of the supply chains by a single firm. As stated, the way firms deal with sustainability can influence the suitability of a private sustainability standard, and thus its quality. Therefore, it is important to map which criteria in the management context impact a firm's choice for a standard. The Sustainable Trade Initiative (*Initiatief Duurzame Handel* (IDH)) is a Dutch institute involved in 'accelerating and up-scaling sustainable trade by building impact oriented coalitions of front running firms, civil society organisations, governments and other stakeholders' (IDH The Sustainable Trade Initiative, 2015). They have published several reports on case studies in the field of SSCM. The case studies focus on the lesson to be learned from firms who applied SSCM in practice. The following section is a summary of the most important problems that firms have faced when implementing private standards and what a firm needs to consider in their choice of a standard to avoid these issues.

FOCAL FIRMS

Seuring & Müller (2008) state that often the so-called 'focal firms' (ought to) take responsibility for a product's life cycle impact. They define 'focal firms' as the firms that usually (1) rule or govern the supply chain, (2) provide the direct contact to the customer, and (3) design the product or service offered (2008, p. 1699). These firms are most often the subject of public scrutiny.

MATCHING TO EXISTING SUSTAINABILITY ISSUES

As stated, on a governance level it is important that a private standard addresses a relevant sustainability issue. On a management level, the addressed sustainability issue should not only be relevant; it should be beneficial to the firm. A standard can do much for a firm's reputation, or reduce supply chain risks (see Table 1). In order to maximise benefits from the standard, the chosen standard preferably addresses a major sustainability issue in the firm's supply chain. Focusing on a minor issue will have little impact on the sustainability of the supply chain, and thus gain little attention or benefits.

ECONOMIC BENEFITS

An issue mentioned frequently is the fear that active CS management will be at the expense of the firm's profit margin (Lozano, 2012). Although nowadays the majority of firms do see the business case for sustainability (Kitzmueller & Shimshack, 2012), it is being argued that in practice firms still have reservations regarding certified trade (Braga et al., 2010). Van Hoeven (2009) refers to a 2009 survey amongst procurement directors that demonstrated that cost reduction has the highest priority in sourcing. This mind-set appears incompatible with more sustainable sourcing policies as the initial costs of certification are high (Rosenberg et al., 2009).

Especially SMEs typically lack the necessary resources for this investment (Pedersen, 2009; Vos & Aalbers, 2009).

Braga et al. (2010) discuss Unilever's effort to certify their tea supply chain according to the Rainforest Alliance standard. The authors state Unilever, the focal company, feared that the additional costs in the supply chain would not be recovered. Certifying only one product line or brand, and thus creating a niche market, rarely results in a large change as the average consumer continues to purchase the uncertified, cheaper product. The author stresses this fact by the following quote: 'according to market research, 60% of consumers in Western Europe declare that they consider social and environmental factors into when deciding what products to buy. However, they are often discouraged by price and availability' (2010, p. 18). Certifying an entire product group while keeping the prices at the same level, eliminates the risk of customer loss, but requires higher up-front investments. Unilever feared that if a significant share of producers switched to certified tea, their competition could benefit from their investment, effectively reducing Unilever's profit from the certification scheme (Braga et al., 2010).

For a focal company considering certification, these investments are an important discriminating factor between similar standards. It is important to them that the adoption of a standard does not lead to a decrease in revenue. A standard could even present a business opportunity for the firm, as was addressed in Table 1. SSCM literature confirms this (van Hoeven, 2009). Van Hoeven (2009) argues that the chosen standard can help revenues to grow, reduce costs, and build intangible assets. Unilever experienced growth in market share as a result of their move to a certified sustainable brand, offsetting the investment costs (Braga et al., 2010). In order for a firm to gain a significant competitive advantage from certification, it addresses (one of) its principal product group(s), as this can generate most profit.

APPEAL TO THE CONSUMER

For the focal company to benefit from the standard, the certified product has to appeal to the consumer (Braga et al., 2010). In the most basic terms this means that the product should be of similar or higher quality than non-certified products. Another important condition for consumer attraction is visibility. Eco-labels on the exterior packaging of a product are an effective method to increase awareness and demand for certified products (Schmitz-Hoffmann et al., 2014). Braga et al. (2010) state that credibility is crucial for a label to be successful; consumers must buy into the sustainability claims made by the label. They suggest support and endorsement from third parties as a possible solution to this issue. This implies that the ideal standard system for a firm is well-known or openly supported by trustworthy sources, as this can increase customer recognition.

Not only visibility itself, but also the method of familiarising the consumer with the eco-label can be crucial. This was illustrated by the Unilever case study (Braga et al., 2010). Unilever adapted its communication strategy to suit the target market; in more traditional markets, they slowly phased in the certification label on their tea brand, whereas in more progressive markets they immediately placed it on the front of the pack. It is important that the chosen standard can be implemented in a manner that fits the target consumer. Promotional campaigns for the eco-label are a helpful tool to accompany the certification process; it will introduce the eco-label to the consumer, convey the vision and mission behind the product, and persuade the consumer to purchase the product.

APPEAL TO THE PRODUCERS

For producing firms adopting a standard can be a daunting task. A common barrier to sustainability initiatives is fear of change (Lozano, 2012). The IDH case studies exemplify this fact. Braga et al. (2011) consider how farmers were reluctant to cooperate in the early stages of Unilever's effort to certify their tea brand. They perceived the necessary changes as extra work, and were unsure about the benefits. However, in some cases a standard may improve yields and quality, lower costs, and increase revenue (Rosenberg et al., 2009). In order to convince these actors, a standard should allow for gradual build-up of the requirement's stringency, while

being accompanied by a training system (van Hoeven, 2009). Producers have to get familiar with the new practices, experience the work load, and witness real results to get on board (Braga et al., 2011). Experience and a proven concept can be instrumental characteristics of a standard to the certification of smaller firms. They can help overcome barriers posed by size, such as lack of resources, bargaining power or organisation skills (Vos & Aalbers, 2009).

MATCH WITH THE FIRM'S CONTEXT

Besides being a match with the customer, the standard should match the firm and its values, vision and mission. In the Unilever case it was stressed that in their choice for a fitting standard it was important that the standard's message would not overshadow Unilever's message (Braga et al., 2010). Other criteria considered are flexibility, scale, personal involvement, and stringency (Braga et al., 2010; Vos & Aalbers, 2009).

2.5. THE NEXT STEP

In conclusion, SSCM is a difficult and complex task, considering the extensive product portfolio firms manage and the management tools that are available to them. It was established that private sustainability standards are a very suitable tool to adopt, but there are still many options on how to implement such a standard. A firm can choose to organise its SSCM individually, adopt several standards independently, or formulate its own standard. However, as effectiveness and actual impact on the sustainability of the sector is the end goal, this is not a recommendable strategy. As stated, working together as a sector to formulate a uniform strategy increases effectiveness. The sector organisation could provide guidance in this process. The next chapters focus on formulating a concrete strategy for the Dutch gardening sector to steer its supply chain to a more sustainable state.

3. THE DUTCH GARDENING SECTOR

The Dutch gardening sector is occupied with the production, distribution and sales of indoor and outdoor garden articles; this includes living and non-living materials (Hassel & Heins-Mouwen, 2014). As stated in the theory section, primarily the focal firms are working on CS. Focal firms are often retailers, who manage an extensive and diverse product portfolio (Seuring & Müller, 2008; Thonemann & Bradley, 2002). In the gardening sector the garden centres are the focal firms. The Netherlands has about 550 garden centres; however, this number is decreasing (CBS Statline, 2014). Sales in the sector vary throughout the year (Rabobank, 2015). Sales respond strongly to seasonality (Christmas articles, fireworks) and the weather (bad weather conditions leads to less sales on outdoor articles) (Hassel & Heins-Mouwen, 2014; Rabobank, 2015). Garden centres' strongest competitors are flower shops and supermarkets for the living products, and hardware stores and pavement retailers for the heavy maintenance (Rabobank, 2015).

As the literature states, the garden centres have a large variety of garden related products in their portfolio. This includes both living products such as plants, and non-living products such as tools and furniture. It also encompasses other products associated with gardens such as pet animal supplies and Christmas articles. Figure 4 shows that about a third of the garden centres' revenue originates from living products. As can be seen in Table 3, heavy maintenance is also an important source of income. Another observation from Table 3 is that garden centres hold the largest market share for several products in the sector, such as outdoor plants, small maintenance, and tools.

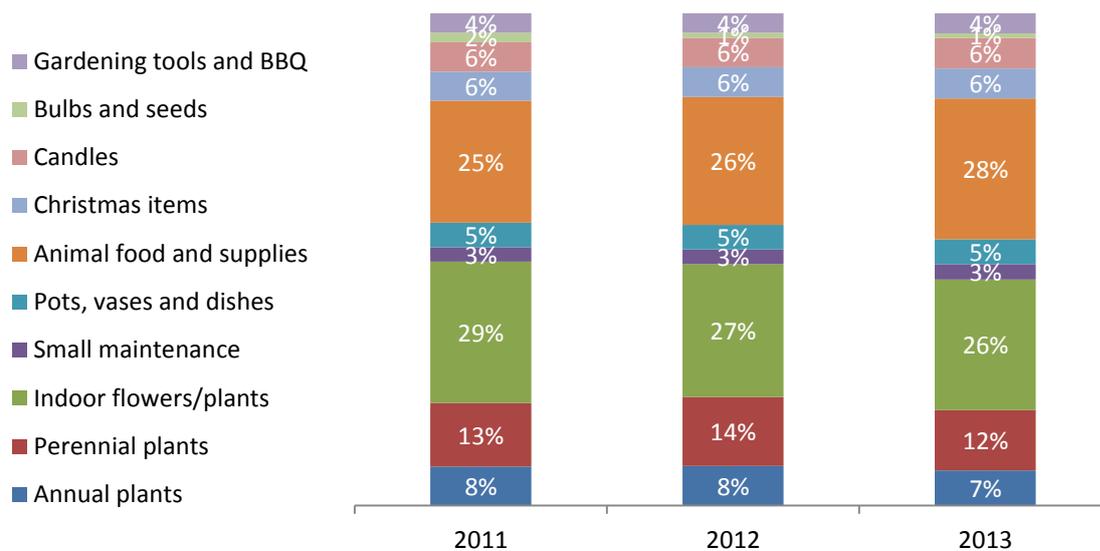


FIGURE 4 - SHARE OF PRODUCT GROUPS IN TOTAL REVENUE, EXCLUDING FURNITURE, LIGHTING, AND HEAVY MAINTENANCE, OVER THE LAST THREE YEARS (ADAPTED FROM HASSEL & HEINS-MOUWEN (2014))

TABLE 3 – TURNOVER OF THE GARDENING SECTOR PER PRODUCT GROUP, PLUS THE TURNOVER OF THE GARDEN CENTRES AND THEIR MARKET SHARE, IN 2013 (HASSEL & HEINS-MOUWEN, 2014; HEINS-MOUWEN, 2014).

PRODUCT GROUPS IN THE DUTCH GARDENING SECTOR	TURNOVER (IN €, X 1,000)	TURNOVER GARDEN CENTRES (IN €, X 1,000)	MARKET SHARE OF GARDEN CENTRES (BASED ON TURNOVER)
Total	2,186,429	650,848	30
Living	996,514	380,925	38.2
Annual plants	154,933	94,435	61.0
Perennial plants	269,564	185,683	68.9
Indoor flowers and plants	572,017	100,807	17.6
Non-living	2,647,821	-	22.7*
Small maintenance (soil, pest management, & fertilisers)	76,460	36,348	47.6
Soil	~46,000 ⁱⁱⁱ	-	-
Pest management and fertilisers	~31,000	-	-
Pots, vases and dishes	111,574	49,529	44.4
Outdoor	~32,000	-	-
Indoor	~80,000	-	-
Candles	138,120	11,312	8.2
Bulbs and seeds	32,737	17,607	63.8
Bulbs	~23,000	-	-
Seeds	~10,000	-	-
Gardening tools and barbeques	89,454	33,000	38.9
Gardening tools	49,184	16,866	34.3
Barbeques	40,270	16,134	40.1
Animal food and supplies (excl. sales via supermarkets)	603,174	58,482	9.7
Christmas items	138,396	63,645	48.0
Garden furniture	552,003	89,972	16.3
Furniture	455,523	71,062	15.6
Accessories	96,480	18,910	19.6
Garden lighting	102,432	19,667	19.2
Heavy maintenance	804,474	86,448	10.8
Decorative paving	344,597	47,210	13.7
Wood and fencing	196,958	12,802	6.5
Playground equipment	13,340	1,187	8.9
Sheds and greenhouses	166,769	7,838	4.7
Ponds	64,172	16,685	26.0
Garden decoration	1,638	726	44.3

* excluding Furniture, lighting and heavy maintenance

As a firm offers more product groups, its range of suppliers increases and its supply chain becomes more complex (Agrawal et al., 2002). This also applies to the garden centres. Figure 5 presents a simplified schematic of the supply chain of the garden centres. As can be seen, the supply chain is quite complex, with many suppliers and intermediary firms.

ⁱⁱⁱ Due to the methods of data presentation by GWK, some of the numbers are rounded up/down.

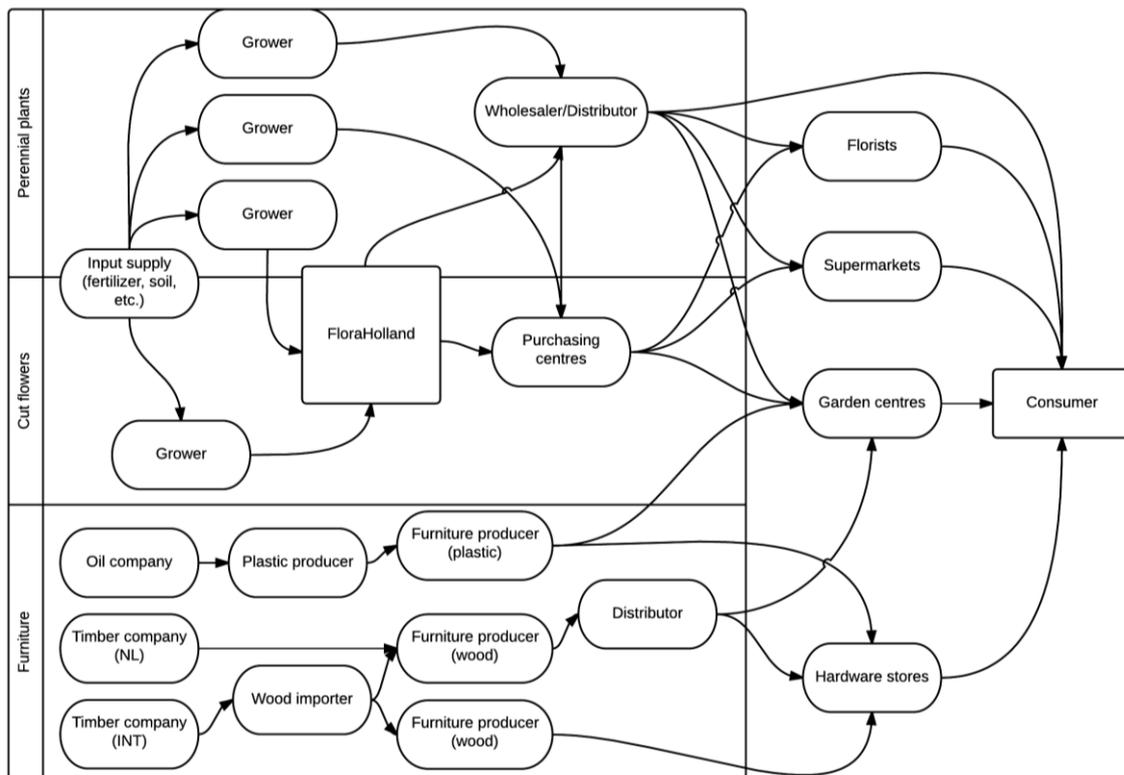


FIGURE 5 – SIMPLIFIED SCHEMATIC OVERVIEW OF THE SUPPLY CHAIN OF THE GARDENING SECTOR. THE FIGURE DEPICTS THE ROUGH OUTLINES OF THE SUPPLY CHAIN OF THREE PRODUCT GROUPS SOLD IN GARDEN CENTRES. IT INCORPORATES THE GARDEN CENTRES' COMPETITORS, THE ACTORS IN THE SUPPLY CHAIN AND THEIR RELATIONS.

3.1. IMPORTANT ACTORS IN THE DUTCH GARDENING SECTOR

There are various actors that are important in the Dutch gardening sector. In order to understand how the sector operates, these are introduced in this paragraph.

- **Tuinbranche NL.** Tuinbranche NL is the sector organisation for the entire gardening sector in the Netherlands. They look after the interests of their approximately 500 members by lobbying, promotion, representation, education and advising (MKB Nederland, 2015; Tuinbranche Nederland, 2015b). Their members include both the suppliers in the sector (growers, importers and wholesalers), as well as the retailers (the garden centres and green centres) (MVO Nederland, 2015). They have a guiding role in the transition to sustainability in the sector, as they represent the interests of the production and the sales side.
- **FloraHolland.** FloraHolland is the Dutch flower auction. This is a marketplace for flowers and plants (FloraHolland, 2015). It is a cooperative, owned by the producers of horticultural products; approximately 8,000 growers trade products through FloraHolland (Dat, 2010). FloraHolland does not become owner of the product at any point in the sales process; they only act as a facilitator for the sales, by bundling sales streams and centralising all product sales².
- **LTO.** *De Land- en Tuinbouworganisatie* (LTO) Nederland is the sector organisation of the agricultural sector; it is a collaboration of LTO Noord, ZLTO en LLTB and represents almost 50,000 firms (LTO, 2015).

3.2. MARKET TRENDS

Rabobank (2015), Productschap Tuinbouw (2011) and Hassel & Heins-Mouwten (2014) have identified several current trends in the sector:

- **Dependency on local weather patterns and economy.** Over the last few years, the total revenue of the gardening sector has been declining. In 2013, the total revenue 2.2 billion euro, about 8% less than in 2012 (Rabobank, 2015). This is largely due to bad weather conditions, leading to a decreased spending in the living product groups (Hassel & Heins-Mouwten, 2014). The sales of the gardening sector depends highly on the local weather conditions and unstable consumer behaviour; plants are a luxury product that is often bought on impulse (Rabobank, 2015).
- **Blurring of the distinction of sectors.** Supermarkets and other firms from outside the sector are increasingly including garden products into their portfolio. This has led to an overcapacity in the market and increasing competition. The market share of the garden centres has decreased, largely because of this phenomenon (Rabobank, 2015).
- **Supply chain integration.** Wholesalers are cutting out retail by offering products directly to the consumer.
- **Increased demand for low-maintenance plants.** Consumers look for convenience and, as stated, plants are a luxury product. Thus, although some enjoy garden maintenance, for many consumers low-maintenance is a preference (Productschap Tuinbouw, 2011).
- **Increase of online sales for non-living products.** In the first half of 2014, 12.3% of non-living products were purchased online, compared to 8% in 2011 (Hassel & Heins-Mouwten, 2014). Similar to the previous point, online sales facilitates the purchasing process, increasing convenience for the customer.
- **Sustainability amongst consumers.** A main trend is the increased interest in sustainability in the sector. Consumers are expressing increasing interest in local and sustainable products; the consumer wants to know more and more details on the processes their products went through and if possible control these processes, as can be seen by the popularity of Do-It-Yourself, or home-grown vegetables, fruit and herbs (Rabobank, 2015). Interestingly, the interest in sustainability only appears to apply to edible plants.
- **Sustainability in the sector.** The sector itself is also interested in sustainability. Tuinbranche NL states that sustainability is an important condition for their work (2015b). This is demonstrated by their 'Green Sector plan' (Tuinbranche Nederland, 2015a). This strategy plan stresses the role of firms in the sector in the sustainability debate and their responsibility towards their customers. The statement suggests that Tuinbranche NL perceives their role as both proactive and reactive; they proactively want to take their responsibility in the sector, as well as react to the demands of their customers and other stakeholders. As a part of this strategy, Tuinbranche NL is considering the adoption of one or more private sustainability standards for the most important product categories.

3.3. CHALLENGES AND CHANCES

Considering the current trends, the gardening sector is facing several challenges. Firstly, the high competition in the sector challenges the garden centres, to distinguish themselves from their competitors. They have to define their target customer and adapt their strategies to reach these customers (Rabobank, 2015). Private standards are a suitable tool to establish the sector as the 'sustainable choice'. This acts as an added value to the product, which attracts customers. A private standard also helps the garden centres to protect their position by strengthening their supply chain. Securing supply relations can decrease the threat from wholesalers. In tackling the current challenges, communication is vital. Communicating the sustainability efforts to the customers satisfies their demand for information on the product they buy. As stated in the theory, an eco-label is a suitable tool to communicate these efforts. The trend of online sales could prove an opportunity for the garden centres to provide the customer with detailed information on their certification policy (Rabobank, 2015).

4. METHODS

This thesis aims at formulating recommendations for the Dutch gardening sector on how to promote sustainability in their supply chain by the means of private sustainability standards. To get to these recommendations, a descriptive study of the use of standards in the sector has been conducted. The descriptive study consists of a desk study, interviews with actors in the sector, and a multi-criteria decision analysis (MCDA). The desk study provides the objective data on the standard systems. The interviews provide access to the subjective information on the standards: the opinions of standard setting organisations, the relations between the standards, and experiences of their users. The MCDA is executed to analyse the data from the desk study and the interviews based on the criteria, identified in the theory, and objectively compare the standards based on numerical scores.

The study was done in several phases. The first phase aimed at the delimitation of the research. A selection of certifiable product groups was made from the sector's product portfolio. Subsequently, the possible standards for the chosen product groups were selected. In the second phase, the identified criteria were operationalised. The next phase entailed data collection via a desk study and interviews. In the last phase, the data was analysed with a multi-criteria decision analysis (MCDA) to assess the selected standards, based on the criteria identified in the theory. This chapter describes the methods used in each phase.

4.1. DELIMITATION

SELECTION OF THE PRODUCT GROUPS

As stated in the theory, a firm cannot and should not adopt all possible standards. So, before choosing a standard based on quality, the firm must decide which product groups to focus their efforts on. When selecting which product groups to certify, several characteristics are important. As stated in the theory, a firm should aim for a strategy that makes business sense. This can be interpreted in several ways. SSCG theory states that a proper standard has a significant impact on sustainability issues (ISEAL Alliance, 2013). From a management point of view, this amounts to less impact on the environment, improvement of working conditions, reduced risks and secured supply streams (van Hoeven, 2009). Therefore, it is vital that the focal company is in a position to bring about change in the supply chain. As the market leader of a certain product group, a firm can exert enough influence on their suppliers to bring about that change. It was also established that certification can lead to an improved reputation and thus increased revenue. This requires a high visibility for the consumer and a significant revenue stream to offset the certification costs (Braga et al., 2010). Again, being market leader in a certain product group generates a lot of consumer attention. However, certifying a product group in which the firm is not the market leader, but does have high sales and a notable revenue stream is also a suitable option. These criteria led to the choice of horticultural products and wooden products as focus groups.

As can be seen in Table 3, horticulture (ornamental plants) makes up almost a third of the gardening sector's sales. The sector is one of the largest suppliers of ornamental plants in the Netherlands (Hassel & Heins-Mouwen, 2014). Because of their leading role in the market, the garden centres could trigger a large change in the supply chain. Therefore, the product group matches the criteria above. Another benefit of focusing on this product group is the fact that all plants, and even seeds and bulbs, can be certified by the same standard. The assessment of standards for this product group can benefit a wide range of firms. Moreover, the sector could benefit from certification of these products, for several reasons. It is a market with strong competition, so differentiation is important. In addition, the garden centres have been experiencing heavy criticism from civil society for its pesticide use in the horticulture sector (Greenpeace, 2014a), further underlining the important role standards could play in these supply chains. Therefore, this is an interesting product group to certify.

The second selected product group is that of wooden products. Wood is a material that is used a lot in products of the garden centres' product portfolio. A good example is garden furniture. This product group is a notable source of revenue for the garden centres; moreover, they are the third-largest retailer in the market, making

them an excellent choice for certification (Heins-Mouwen, 2014). Other examples are fencing, floorboards, and sheds. Therefore, this product group is also recommended for certification.

From a theoretical perspective, the combination of horticulture and wood standards is interesting, as the former sector is fairly inexperienced with certification, whereas the wood (and forestry) sector has been working with certification for two decades.

SELECTION OF THE STANDARDS

For the selected product groups, a long list of standards is available (Appendix A & B). These standards were identified through the use of the International Trade Centre (ITC) Standards Map (www.standardsmap.org). This database contains detailed information about many private sustainability standards, and tools for those looking for standards that meet their needs (Schmitz-Hoffmann et al., 2014).

Not all standards applicable to horticulture or wood products can be applied to the Dutch gardening sector. Several standards were eliminated due to geographical restrictions (several Chinese standards) or product restrictions (standards only applicable to products meant for human consumption). The standards that have been assessed for the horticulture sector are listed in Table 4. Three additional standards were included in the final selection (Milieukeur, Groenkeur, and NL Greenlabel), that are not on the ITC list, but are often used in the Dutch gardening sector³ (AgriHolland, 2015). For the wood sector two standards were selected (see Table 5).

TABLE 4 – THE SELECTED STANDARDS USED FOR HORTICULTURE PRODUCTS ACCORDING TO THE ITC AND THE SECTOR (AGRIHOLLAND, 2015; INTERNATIONAL TRADE CENTRE (ITC), 2014)

STANDARD	GEOGRAPHICAL SCOPE	TOPIC	FOCUS	TYPE OF STANDARD
Fair Flowers Fair Plants (FFP)	Global (mostly Europe)	Floriculture	Environment & social	Meta-standard
Groenkeur	The Netherlands	Arboriculture	Environmental	Performance
Milieukeur	The Netherlands	Agriculture	Environment & social	Performance
MPS-ABC	Global	Horticulture	Environment & social	Process
MPS-GAP	Global	Horticulture	Environment & social	Performance
MPS-SQ	Global	Labour/social	Social	Performance
NL Greenlabel	The Netherlands	All outdoor materials	Environment	Unclassified ^{iv}
Organic	EU	Organic	Environment	Performance

TABLE 5 - ALL STANDARDS ON WOOD PRODUCTS ACCORDING TO THE ITC (INTERNATIONAL TRADE CENTRE (ITC), 2014)

STANDARD	GEOGRAPHICAL SCOPE	TOPIC	FOCUS	TYPE OF STANDARD
FSC	Global	Forestry	Environment & social	Performance
PEFC International	Global	Forestry	Environment & social	Meta-standard

^{iv} NL Greenlabel classifies itself as a product label. They do operate as a standard, by certifying products. However, they do not set performance levels nor do they impose a management system.

4.2. OPERATIONALISATION

The standards are assessed based on the criteria identified in the theory. As stated, the quality of a standard is understood as the achievement of three factors: effectiveness, legitimacy, and the management criteria. In the second phase of this study the specific criteria have been defined corresponding to the theory. Subsequently, the definitions of the criteria are translated into measurable indicators. These indicators act as evidence of fulfilment of the criteria. The definitions and indicators are based on the ISEAL Good Practice recommendations (ISEAL Alliance, 2014b), the recommendations of the RESOLVE report (RESOLVE, 2012) and von Geibler (2013). The only criterion that cannot be based on universal indicators is the match to the firm's context criterion. It is highly dependent on the situation in the sector. The indicators determining the performance of the standards on this criterion have been identified from the sector analysis. See Table 6 for the criteria and their indicators. The full operationalisation can be found in Appendix C.

TABLE 6 –THE CRITERIA, AS IDENTIFIED IN THE THEORY, AND THEIR INDICATORS AS A RESULT OF THE OPERATIONALISATION.

CRITERION EFFECTIVENESS	INDICATORS
Clarity of standard formulation	<ul style="list-style-type: none"> - Quantitative criteria - Detailed standard document available - Description of certification process - Instructions for certification process
Relevant objectives	<ul style="list-style-type: none"> - Sustainability expert panel - Addressing main challenges - Stakeholders involved in standard setting - Regular revision
Strong M&E system	<ul style="list-style-type: none"> - Annual reports - Multi-actor system - Non-compliance system - Strong accreditation
Broad reach	<ul style="list-style-type: none"> - Usable for entire sector - Usable in many nations - Included in ITC Standards Map
Accessibility	<ul style="list-style-type: none"> - Scaled fee model in relation to firm size - Fee €1000 or lower - Several levels of stringency in certification - Group certification
Coordination with other standards	<ul style="list-style-type: none"> - Cooperation with other similar standards - Possible to use several standards combined - Complimentary to other similar standards - Benchmarking based on other standards
Efficiency	<ul style="list-style-type: none"> - External efficiency: <ul style="list-style-type: none"> - Minimised overlap with other standards - Consistency - Shared systems with other standards - Internal efficiency <ul style="list-style-type: none"> - Little overhead
Continuous improvement and learning	<ul style="list-style-type: none"> - Review of standards at minimum every five years - Complaints mechanism - Forums for exchange of expert information
CRITERION LEGITIMACY	INDICATORS
Trustworthy assurance	<ul style="list-style-type: none"> - Third-party auditing - Audits by professionals - All firms are audited every year - Full in-field audits

Impartiality	- Third-party auditing - Third-party accreditation - Balanced representation in committees - ISO/IEC 17065:2012 certified
Truthfulness	- Mechanisms to deal with conflict-of-interests - Third-party accreditation - ISO/IEC 17065:2012 certified - Data available on the performance of firm/audit summaries - Non-compliance mechanism - Traceability mechanism/ Supply chain certification
Transparency	- Regular updates of the activities of the organisation - Standard accessible online - Annual and financial reports of last 5 years online/available on request. - Database of certified organisations online - Transparent auditing process - KPIs formulated for the standard performance
Stakeholder engagement	- Stakeholders surveys - Stakeholders in standard setting committees. - Feedback mechanisms
Financial sustainability	- Self-supporting financial model: no subsidies, no donations
Compliance with legal regulations	- No history of legal issues in the Netherlands or country of production - Use or mentioning of legal regulations

MANAGEMENT CRITERION	INDICATORS
Matching to existing sustainability issues	- Addresses the most important topic an appropriate manner.
Economic benefits	- Low costs - Increased sales price of product
Appeal to the consumer	- Known with firms - Attractive product - Eco-label - Media coverage - Active promotion - Third-party endorsement
Appeal to the producers	- Flexibility - Training programme - Known by producers
Match with the firm's context	- Active promotion - Practical feasibility - Guarantee

4.3. DATA COLLECTION

The next phase is the data collection to assess the standards based on the indicators. Several data collection methods have been used: desk study, interviews with standard organisations, and interviews with standard users.

A desk study was conducted to gather information on basic indicators, like location, aim and history. The desk study was also used to assess how the standards appeal to interested firms. In other words, it is evaluated whether a standards' website provides the potential user with enough information to get a rough understanding of the standard. Ideally, more detailed information on the content and procedures of the standard can be found on the website as well.

A second source of data on the standards are the interviews with representatives of the selected standards (Table 7). The interviews were used to complement the publicly available information on the standards. Some of the addressed topics are the standard-setting process, assurance policy, stakeholder involvement and learning methods. The interviews were of a semi-structured nature, and were recorded and summarised. SKAL,

the Dutch assurance firm for the Organic standard, did not provide the opportunity to conduct an interview; they were sent the interview guideline as a fill-out questionnaire. The information from the desk study and the interviews were used to assess the standards. The transcripts of the interview, the guidelines for the interviews, and the filled-out questionnaire for the organic standard can be found in Appendix D, E & F.

TABLE 7 - LIST OF CONDUCTED INTERVIEWS, WITH THE RESPECTIVE FUNCTIONS AND ROLE IN THE CERTIFICATION SYSTEM

FUNCTION	ORGANISATION	ROLE IN CERTIFICATION SYSTEM
Director	Groenkeur	Standard setting organisation
Retail manager	MPS	Standard setting organisation
Account manager	NL Greenlabel	Standard setting organisation & auditing body
Project manager Agrofood	SMK	Standard setting organisation
Certification employee	SKAL	Auditing body
Coordinator Policy and Registration	PEFC	Standard setting organisation
Deputy Director	FSC	Standard setting organisation

For more in depth details on the user experience, several interviews were conducted with firms in the Dutch gardening sector. Interviews with actors operating throughout the supply chain of horticulture products and wooden products were conducted (see Table 8 for a list of the conducted interviews). The interviews were conducted based on a semi-structured interview guideline (see Appendix G for the guideline). The interviewees were asked about their current use of standards, their experiences with the use of these standards, and their ideal standard. The interviews were recorded, transcribed and summarised, and sent back for rebuttal (see Appendix H for the summaries). Furthermore, observations regarding discussions of success criteria were made at a stakeholder meeting with the producers in the sector.

TABLE 8 - LIST OF CONDUCTED INTERVIEWS, WITH THE RESPECTIVE FUNCTIONS AND ROLE IN THE CERTIFICATION SYSTEM

FUNCTION	ORGANISATION	ROLE IN CERTIFICATION SYSTEM
Director	Arie Bouman	Grower & wholesaler
Account manager	Griffioen Wassenaar	Grower
PR/Communications advisor	Intratuin	Retailer
Director	Groenrijk	Retailer
Contact liaison	LTO Noord	Sector organisation of the agricultural firms in the middle and North of the Netherlands.
Chairman	ZLTO	Sector organisation of the agricultural firms and the South of the Netherlands

A survey was conducted among the members of Tuinbranche NL: one survey was sent out to the growers and one to retail. Despite best efforts, the level of response was insufficient for the survey results to be incorporated in this thesis.

4.4. DATA ANALYSIS

The next phase is the analysis of the collected data, leading to the actual assessment of the selected standards. The data was analysed using a multi-criteria decision analysis (MCDA). A MCDA is a tool that can be used to help solve complex decision problems in which several points of view must be considered (Roy & Vincke, 1981; Wang, Jing, Zhang, & Zhao, 2009). It is a suitable method to structure the consideration of pros and cons of a large set of alternatives. It can consider a large variety of criteria, qualitative or quantitative. Wang et al. (2009) provide an explanation of the method. The problem can be visualised as expressed in Equation 1. Here x_{ij} is the performance of i -th alternative on j -th criteria, w_j is the weight of criteria j , n is the number of criteria and m is the number of alternatives. In this thesis, the alternatives are the selected standards listed in Table 4 and Table 5, and the criteria identified for effectiveness, legitimacy and management criteria listed in Table 6.

$$\begin{array}{c}
 \text{criteria } C_1 \quad C_2 \quad \dots \quad C_n \\
 \text{(weights } w_1 \quad w_2 \quad \dots \quad w_n) \\
 \text{alternatives} \quad \text{-----} \\
 X = \begin{array}{c} A_1 \\ A_2 \\ \vdots \\ A_m \end{array} \quad \left(\begin{array}{cccc} x_{11} & x_{12} & \dots & x_{1n} \\ x_{21} & x_{22} & \dots & x_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ x_{m1} & x_{m2} & \dots & x_{mn} \end{array} \right)_{m \times n}
 \end{array}$$

EQUATION 1- MCDA MATRIX (WANG ET AL., 2009)

The MCDA adds all the assessments on the identified criteria. To that end the criteria need to be scored. The score is expressed by the degree in which the standards meet the criteria, based on the total number of indicators divided by the number displayed by the standard. This leads to a percentage, as shown in Table 9.

TABLE 9 – SCORING SYSTEM USED IN THE MCDA, BASED ON A CRITERION WITH FOUR INDICATORS.

UNACCEPTABLE (0)	INSUFFICIENT (0.25)	ACCEPTABLE (0.5)	GOOD (0.75)	EXCELLENT (1)
Displays none of the identified indicators	Displays 25% of the identified indicators	Displays 50% of the identified indicators	Displays 75% of the identified indicators	Displays all of the identified indicators

In a regular MCDA, the scores of the alternatives are multiplied with a weight factor for importance. However, this research does aims at formulating a broad set of recommendations. It is therefore considered unnecessary or even impractical to attach a weight to the criteria as the weight might differ per actor in the sector. The MCDA has resulted in a conclusion on the quality of private sustainability standards in the Dutch gardening sector, on which recommendations are be based.

5. RESULTS - HORTICULTURE

This chapter provides an in-depth description of the selected standards for horticulture products along the criteria identified in the theory section. The assessed standards are Groenkeur, Milieukeur, MPS-ABC, MPS-GAP, MPS-SQ, FFP, NL Greenlabel, and Organic.

Organic is the oldest standard in the sector (Figure 6). According to Rigby & Cáceres (2001), the first mentioning of the term organic farming is of 1940 by Northbourne (Northbourne, 1940). The first European statute (Regulation EEC No. 2092/91) on organic agriculture was formulated in 1991. Organic agriculture is a type of farming that adheres to the Organic principles, which are further explained in chapter 5.5.

MPS (*Milieu Programma Sierteelt*; Eng. Environmental Programme Horticulture) is the oldest standard that focuses solely on horticulture products. The organisation was founded in 1993 by the Dutch horticulture sector, more specifically growers in the west of the Netherlands; they formulated the MPS-ABC standard to publicly demonstrate the sector's attempts to reduce environmental impact (MPS, 2015d). MPS has become the largest, international standard setting organisation in the horticulture sector⁶. Increasingly, firms towards the end of the supply chain demand MPS-A certification from their suppliers^{4,6}. It has slowly become the standard of the sector. However, currently there is some critique on MPS-ABC^{4,7}, which may lead to a decline in popularity in the future.

Over time, MPS has expanded their range with MPS-GAP and MPS-SQ. The prior is based on the GLOBALG.A.P standard and is largely used for sales to supermarkets. MPS-SQ is the standard for social aspects of sustainability. FFP is a standard started in 2006, as a multi-stakeholder initiative (industry, NGOs and government) to create a social standard specifically for the flower sector (FFP, 2015c). In 2011, MPS took FFP under its wing, as a result of financial struggles⁶. Although the standard setting of FFP is independent, the standard is considered part of the MPS range (MPS, 2015a).

Milieukeur (eng: Environmental Seal) is the second oldest standard for sustainable agriculture in the Netherlands. The standard was set up by the Dutch government in 1992 (SMK, 2015i). Milieukeur is a standard for various agro/food and non-food products (SMK, 2015c). They offer certificates for the arboriculture sector: one for open cultivation and one for protected cultivation in greenhouses. Several Milieukeur certified growers expressed the fear that their competitive advantage was lost as the market for certified arboriculture products was too small. They requested more active promotion of the standard; however, SMK could not honour this request lacking budget and manpower⁵. In response, Groenkeur (eng: Greenseal) formulated a new arboriculture standard in 2008 (Groenkeur, 2015i). They provide a very similar standard to Milieukeur, but focus more on promoting the label and creating a market for certified arboriculture products³. They also compete with MPS, as many of the certified firms had been previously working with the MPS-ABC, but requested a standard that was stricter and required more monitoring to be able to ensure good practices³.

NL Greenlabel is the youngest system. It was started as an initiative to promote 'greening' of our environment, from gardens to public spaces¹². Besides actual greening in the form of more plants, they also aim at stimulating people to use more sustainable products in their gardens and public spaces (NL Greenlabel, 2015c). To that end, they have developed a method to assess the life-cycle impact of a product and a label to communicate this impact to the consumer¹².

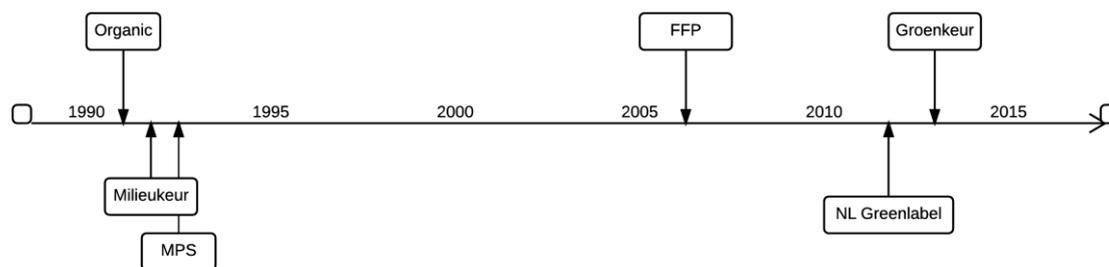


FIGURE 6 - A TIMELINE OF YEARS THE HORTICULTURE STANDARDS WERE FOUNDED. GROENKEUR AS AN ORGANISATION WAS FOUNDED EARLIER (2003); HOWEVER THE ARBORICULTURE STANDARD WAS FORMULATED IN 2013. THE DATES OF THE OTHER HORTICULTURE STANDARDS MARK THE FOUNDATION OF THE STANDARD SETTING ORGANISATION, AS THE ACTUAL DATE OF INTRODUCTION OF THE STANDARDS IS UNKNOWN.

5.1. GROENKEUR

Groenkeur was founded in 2003 (Groenkeur, 2015i). The organisation was originally a part of the *Vereniging Hoveniers en Groenvoerzieners* (VHG), sector organisation of garden professionals; it was set up to provide professionals in gardening sector, such as landscape gardeners, roof gardeners, and tree caretakers with a standard that assured the quality of their service³. Since 2012, Groenkeur is an independent organisation and acts as the standard setting organisation for 5 standards. The four main standards of Groenkeur still focus on the certification of firms, more specifically the quality of the service they provide (Groenkeur, 2015a). However, since 2014, Groenkeur also offers a product standard for sustainable production of arboriculture products (Groenkeur, 2015j) This is the so-called Assessment Guideline Sustainable Tree Nursery Products (*Beoordelingsrichtlijn (BRL) Duurzame Boomkwekerijproducten*) (Stichting Groenkeur, 2014a). Currently, they have twelve firms participating in the product standard scheme (Groenkeur, 2015g).

EFFECTIVENESS

The website of Groenkeur gives a short, but comprehensive description of what the standard entails and what type of criteria it is based on (Groenkeur, 2015k). The entire standard can also be found online (Stichting Groenkeur, 2014a). The document describes the requirements to be met by the participants. They cover the following topics: crop protection, fertiliser use, genetic quality of the plants, material use in plant pots, quality of spraying devices and fertilizing equipment, and the formulation of a sustainability plan. Several of the requirements are expressed in quantified terms, such as the maximum allowed nitrogen fertiliser per hectare per year, or the percentage of recyclable material used in plant pots. In order to ensure the product was cultivated according to the Groenkeur standard, the products have to be present at the firm for at least one growing season. The standard document also provides instructions on how to go through the necessary procedures and descriptions of non-compliance mechanisms and sanctions.

The standards of Groenkeur are set by a committee of experts (*College van Deskundigen*), existing of maximum 14 members (Groenkeur, 2015i). The committee is made up of representatives of Groenkeur certified firms, the garden professionals aiming at consumers, end-users (private and public), a knowledge institute (CROW) and others (Groenkeur, 2015c). It is supported by technical subcommittees (Groenkeur, 2015i). The technical subcommittee for the tree nursery products consists of two representatives of audit bodies and several tree nursery firms (Groenkeur, 2015c). There is little representation of the government (one individual), NGOs and experts on sustainability impact. The exact method of standard formulation is not described.

The Groenkeur standard aims at arboriculture products produced in the Netherlands; the standard defines arboriculture as the cultivation of trees, hedge plants, fruit trees, roses, conifers, shrubs, and other perennial plants (2014a, p. 1). Therefore, the reach of the standard is small. The standard is quite new (2013) and does not have many members yet. However, Groenkeur states it is expecting this number to increase, as they notice

a strong interest from the arboriculture sector³. The standard is known in the sector as one of the more stringent standards⁵.

Groenkeur has an online document that outlines the fees that apply to certified firms (Stichting Groenkeur, 2014b). They charge each firm a fee for the certificate that ranges from €300 to €1,200 depending on the size of the certified firm. A firm that grows avenue trees pays €300 for 0-20 hectare, €600 for 20-40 hectare, and €1,200 for more than 40 hectares. For all other certified firms Groenkeur differentiates between firms of 0-5 hectare, 5-10 hectare and larger than 10 hectare. Groenkeur also request an additional fee for new applicants of €400. There is no mentioning of group certification.

The product standard has been formulated in 2013; no revision has taken place yet. However, a revision of the standard is planned for 2016³. On the topic of continuous improvement, Groenkeur also offers a complaint mechanism for their users. The users are also regularly consulted to identify possible points of improvement³.

Groenkeur has integrated ISO 9001 into its guidelines (Groenkeur, 2015d). Moreover, the Groenkeur product standard can be complimented by the Fair Trees Fair Plants certificate, a label of the FFP standard, if the requirements set by FFP are met; the standard also allows firms to prove their compliance with the crop protection and fertiliser criteria with a Milieukeur, MPS-A or Organic certification (Stichting Groenkeur, 2014a).

LEGITIMACY

Groenkeur is the standard setting organisation for its standards. All certified arboriculture firms are audited yearly by SGS, a renowned independent auditing organisation. Auditing bodies must be ISO/IEC 17065:2012 certified (Groenkeur, 2015f). Moreover, the Groenkeur label is accredited by the RvA (RvA, 2015a).

Groenkeur has formulated its auditing policy in the standard document (Groenkeur, 2015f). Every firm is subjected to a field audit once a year, at the end of the growing season. New applicants are audited twice a year: at the start and at the end of the growing season. At the start of the growing season, the sustainability plan should be available. The plan should be formulated as such that it results in compliance with the Groenkeur standard. At the end of the season, the use of fertiliser and crop protection is calculated in retrospective, and a traceability audit is performed. Sample tests for residue are performed once a year. Once every three years, an additional unannounced audit is performed. If a non-conformity is found during an audit, it must be corrected within 30 days. In the case of a critical non-conformity, the certification is immediately revoked. A certificate is maximally two years valid.

Groenkeur certified products can be resold as certified products. The standard document (Groenkeur, 2015f) states a list of traceability requirements; the product needs to be recognisable as a Groenkeur certified product, and be registered as such. Moreover, the firm should keep a detailed administration of the quantity of Groenkeur products in stock, sales, production sites, separate from the non-certified products. The products need to be traceable back to the cultivation lot or the supplier of the seedlings. This is monitored during the regular audits, supplemented by unannounced audits at the firm itself and its customers.

Groenkeur is run by a board of six people, who are responsible for all activities of the organisation (Groenkeur, 2015i); the board is consists of a chairman, a representative of the VHG and four representatives of the respective sub-sectors that use Groenkeur standards (Groenkeur, 2015b). Thus, the organisation is fully run by the sector, and does not receive direct input from NGOs or the government. The board is supported by the expert committees, a PR committee, temporary project groups (at times of new standard development), and an administration office.

Groenkeur has clear mechanisms for feedback (Groenkeur, 2015h; Stichting Groenkeur, 2009). As Groenkeur does not execute the audits, possible complaints are handled by the auditing bodies according to their regulations; they do have explicit regulations and procedures for complaints concerning the content of the standard and other complaints (Stichting Groenkeur, 2014a).

Groenkeur is fully financed by certification fees of their standards³. They also explicitly mention that certified firms need to comply with all national legislation that applies to the sector (Groenkeur, 2015f). Groenkeur provides a multitude of documents on its website: the standard documents, the annual report of 2013, (internal) regulations regarding complaints, changes in the standards, finances, and all additions and decisions made by the expert committee (Groenkeur, 2015e). A list of all participants can also be found online (Groenkeur, 2015g). The financial annual report is available for participants, on request (Stichting Groenkeur, 2014c). Older annual reports are not publicly available. Interested parties can sign up for the newsletter (Groenkeur, 2015a).

MANAGEMENT CRITERIA

There is no guidance in the form of capacity building or training available. Groenkeur can be used as an eco-label for consumers (Figure 7). However, this depends on what the retailer chooses. The Groenkeur firm standards are requested for 70% of the greening and landscaping projects by the Dutch government (Groenkeur, 2015f). The approach of Groenkeur stimulated Groenkeur architects to use Groenkeur certified products. So, as the professional label has built up a good reputation in the public sector; this indirectly acts as third-party endorsement for the products as well.



FIGURE 7 - GROENKEUR
PRODUCT ECO-LABEL
(RVA, 2015A)

5.2. MILIEUKEUR

Milieukeur is the Dutch standard for environmental quality (SMK, 2015c). The standard was set up as an initiative of the Dutch Ministry of Economic Affairs (EZ) and the Ministry of Health, Spatial Planning and Environment (VROM) in 1992 (SMK, 2015i). SMK, the standard setting organisation, offers certificates for various agro/food and non-food products, and focuses on the environmental impact of the product throughout the entire life cycle (SMK, 2015c). They offer certificates for the horticulture sector: one for open cultivation and one for protected cultivation in greenhouses. Currently, there are about 50 firms certified for the open-field arboriculture standard of Milieukeur⁶.

EFFECTIVENESS

The standard for the arboriculture sector is a part of the Milieukeur standard for plant-based agriculture. The standard document outlines the criteria for certification (SMK, 2014b):

- The firm (only if size >10 fte) needs to formulate an environmental plan, signed and supported by the director(s). The plan should address the general policy and goals concerning the environment, the activities planned to reach the set goal, how the progress is monitored and evaluated, and a three-yearly revaluation.
- The firm (only if size >10 fte) needs to assign an environmental coordinator.
- Products that arrive at the firm without a Milieukeur certificate have to be present at the firm for minimum one growing season to be eligible for selling under the Milieukeur label. Moreover, there has to have been a clearly demonstrated cultivation effort and growth of the crop at the firm.

As described in the separate standard document for the arboriculture (SMK, 2014c), the sector has to comply with a long list of additional criteria that prescribe the allowed practices for fertiliser use (nitrogen and phosphate, including limits on the maximum applied quantity of active substance), crop protection (including limits on the maximum applied quantity of active substance), management of biodiversity, water use, cultivation free zone, cleaning, waste management, packaging, and labour conditions. The description of the standard criteria is very exhaustive and detailed, as well as the instructions of the certification process. All criteria are provided with clear indicators of how they are checked. The auditing procedures are stated in detail (SMK, 2014b). In general, the criteria are quite strict. SMK confirms this, stating that they largely focus on frontrunners in the sector⁵.

A unique characteristic of the Milieukeur standard is the bonus/malus system (SMK, 2014c): a firm is allowed to compensate environmentally harmful practices (using pesticides with a relatively high impact on environment, useful organisms or human health) by environmentally beneficial behaviour. This system acts outside of the practices described above. It allows firms to have some impact, as long as it is compensated, which increases the practical feasibility of the standard.

The Milieukeur standard is set by a committee of experts⁵. The committee consists of stakeholders from within the agro/food sector (the sector organisation for the greenhouse manufacturers and builders (AVAG), the Dutch Produce Association (DPA), LTO, knowledge partners (Wageningen University and Research (WUR) Greenhouse Technology, Louis Bolk Institute), governmental bodies (the union of water boards), and NGOs (*Brabantse Milieufederatie*) (SMK, 2015j). The standard is set based on the actual impact of the sector on the environment⁵; for instance, if high concentrations of toxic compound X are found in surface water by the water boards, SMK aims at lowering the use of compound X in the cultivation.

The Milieukeur agro/food plant product standard can be used for all perennial plants, cultivated in open field or in greenhouses (SMK, 2015g). From autumn 2015, Milieukeur will offer a standard for flower bulbs as well⁵. Currently, the Milieukeur horticulture standard is only used by firms in the Dutch arboriculture sector, who cultivate in open field; they have certified 50 firms that together manage approximately 1,500 hectare⁵. One firm cultivating in greenhouses is certified (SMK, 2014a), however, it is small and thus negligible in this context. Milieukeur does operate outside of the Netherlands for several of its food standards⁵. Moreover, Milieukeur's food standards are included into the ITC Standards Map in 2015 (SMK, 2015d). For now there are no certificate holders for the Milieukeur horticulture standard outside of the Netherlands⁵.

SMK charges their participant with yearly fees to finance its business⁵. The fees consist of an initial fee of €250 a yearly contribution fee of minimally €100 and a hectare fee of €10 to €35 per hectare depending on the type of plant, and €115 per hectare for indoor cultivation (SMK, 2015k). This means that SMK charges fees proportional to firm size, therefore increasing the accessibility. For groups, the initial fee is €1,000; this means that if groups apply with more than 4 group members, the individual firms save money.

SMK reevaluates its standard every year according to the following process⁵. A committee is set up, that consists of people using the standard, NGOs, government and research. Together with SMK, the committee maps the current developments in the sector and considers what changes need to be made. In case of a new development, SMK proposes a change to the committee of experts, who then have to approve the proposed change. Based on those discussion a concept of the improved standard is developed, that is subjected to a public screening. The feedback of the screening is discussed with the committee of experts, which results in the revised standard. This procedure ensures relevance and impartiality, and the stringency of the criteria is balanced with feasibility.

Additionally, if (a) firm(s) express(es) interest in a new standard, SMK explores the options, feasibility and potential sustainability impact to set up this standard (SMK, 2015a). The development of a new standard is partially financed by the requesting firms⁵. This demonstrates that Milieukeur is open to feedback from the sector. Complaints on the Milieukeur standard are managed via the certification body, that has to have a publicly available complaints procedure (SMK, 2014b). To ensure impartiality, the procedure prescribes that complaints are handled by a third party that has not been involved in the certification process. Only in case of a disagreement between the complainant and the certification body on the content of the standard, SMK is informed, who then presents the complaint to the committee of experts. Currently, SMK does not cooperate with the other standards in the horticulture sector⁵.

LEGITIMACY

The standard document of the Milieukeur standard (SMK, 2014b) has explicit guidelines for the assurance process. Firms can get Milieukeur certified by an auditing body that is accredited by the RvA, in this case SGS or

CGD. The standard, Milieukeur, itself is also accredited by the RvA (SMK, 2015c). The auditing body has to operate according to ISO/IEC 17065:2012. SMK requires the auditing body to appoint two separate persons, one for the function of auditor and one for the function of decision maker. They further demand the auditor and decision maker to have acquired a higher education degree, have experience with sustainability in the gardening sector and several years of experience in auditing. The audit reports are not available online.

All applicants are audited two times a year: one desk and field audit at the start of the growing season, one desk and field audit just before harvest, and a desk audit after the harvest. The first audit of an applicant involves a check of the cultivation plans, the probability of the firm's compliance with the standard based on these plans, and a check of the pesticide and fertiliser stocks. The second audit is designed to check whether the firm has complied with the standard. Firms that have been certified for two years in a row can choose to get audited once a year. All certified firms also get a sample taken for a residue test, which can be performed unannounced.

To ensure the product meets the Milieukeur standard throughout the supply chain, SMK has a policy, *Canalisation ('Kanalisatie')*, in place for firms in the supply chain of Milieukeur products. This is laid out in the standard document (SMK, 2014b). The policy is aimed at preventing the mixing of certified products with non-certified products during storage, transport and processing. Certification is mandatory for all firms that produce, (re)sell or process Milieukeur certified products, or distribute Milieukeur certified products that are unpacked, to maintain the Milieukeur standard. Traders only have to meet the requirements for *Canalisation* and general requirements for certified firms.

An applying firm is only rewarded the certificate if they meet the required criteria. Non-conformities are categorised in three levels of severity: minor, major and critical major. If a minor non-conformity is detected, the firm has to correct this within six months; a major non-conformity needs to be corrected in one month. A critical major non-conformity, as well as a not repaired non-conformity, leads to the revocation of the certificate. If no non-conformities are found the certificate is valid for an indefinite period.

SMK has a supervisory board and board of appeals, independent of the committee of experts and the sector (SMK, 2015j). However, the committee of experts is considered the operational decision making body⁵. SMK is predominantly financed by certification and other fees, although they still get a minor subsidy (SMK, 2014a). They also do not have a history of legal issues; they meet all legal requirements in the Milieukeur standard (SMK, 2014c).

Considering transparency, SMK has a news section on the website, a digital newsletter, and a printed magazine that issues three times a year (SMK, 2015e, 2015h). SMK has published all its annual reports of the last five years online on the SMK website (SMK, 2015f). The annual reports cover the finances of SMK as well as the general performances (SMK, 2014a). The accreditation license, as well as the list of certified firms, is available to the public through the annual report (SMK, 2014a).

MANAGEMENT CRITERIA

The Milieukeur standard can be used as an eco-label (Figure 8). No guidance or training schemes are available.



FIGURE 8 - MILIEUKEUR ECO-LABEL (SMK, 2015B)

5.3. MPS-ABC, MPS-GAP & MPS-SQ

The MPS-group is a standard organisation for the horticulture sector (Bayer CropScience, 2010; MPS, 2015o). MPS was founded in 1993 by actors from the Dutch flower sector in the Westland, amongst which growers, spokespeople, and researchers, to reduce environmental tax and improve the sector's image (MPS, 2015d). MPS has grown into the largest, international standard setting organisation in the horticulture sector; it is active in 55 counties and certifies about 4,000 firms (MPS, 2015d, 2015o). An estimated 3,100 firms work with

MPS-ABC, 350 with MPS-GAP, and 200 with MPS-SQ. The MPS-group consists of MPS-ECAS (a certification body), MPS-HCS (consultancy & training) and MPS (standard setting and management body) (MPS, 2015k).

MPS offers five certificates, of which three apply to the production of plants⁷. MPS-ABC (quantitative registration of input on ABC level) is MPS' most frequently used standard. Applicants are required to register their use of crop protection, fertilisers, energy and waste; based on this data the applicant is rewarded with an A-to-C level certification label (MPS-ECAS, 2015f). Another standard is MPS-GAP (Good Agricultural Practices). This standard is based on the GLOBALG.A.P. standard, a large European agricultural standard set up by several supermarket chains and their main suppliers (GLOBALG.A.P., 2015; MPS-ECAS, 2015g). MPS-SQ (Socially Qualified) is MPS' standard for the social aspects of sustainability. They also offer a standard for traders: Florimark (MPS, 2015b).

EFFECTIVENESS

MPS has a mission and vision statement published on its website (MPS, 2015g). Their mission is to help the international horticulture sector with positioning itself by facilitating the demonstration of sustainability and quality, and by delivering stimuli for improvement. In summary, the vision of MPS is that reporting, monitoring- and management tools are successful methods to complete this mission. Innovation, international acceptance, communication, benchmarking, and data are deemed important concepts for the success of these methods.

MPS-ABC is the main standard of MPS⁶. It is a process standard that prescribes a registration method (MPS, 2015j). The standard document describes in detail how the method works (MPS, 2013a). Every four weeks⁶, the firm digitally registers the quantitative amounts of crop protection, fertiliser, energy and water used at the firm. They also fill out a questionnaire on the amount of waste produced and the processing of waste⁶. Based on the declared usage MPS rewards points to the firm; first, for all topics a baseline is formulated, based on the average use in the sector. The declared usage is then compared to this baseline. If the usage exceeds the baseline, no points are given; in case of crop protection, points are deduced. If the usage is lower than or equal to the baseline, the firm is rewarded with points; the amount of points depends on the difference with the baseline. The total points given to a firm determines the performance level of the firm; this can be A (70 - 110 points), B (55 - 69,9 points) or C level (10 - 54.9 points), with A being to most environmentally friendly (MPS, 2015j). The idea behind the standard is that knowing the exact quantities of materials used will act as an incentive to improve.

The second standard of MPS is MPS-GAP. This standard is based and benchmarked on the GLOBALG.A.P. standard, which has been used in the food retail sector for about 20 years (GLOBALG.A.P., 2015; MPS, 2015h). The standard document describes the requirements the applicants need to fulfil (MPS, 2013b). In order to apply for MPS-GAP, the firm needs to be MPS-ABC certified. They are required to have a traceability system for their products, so the products can be traced back to their grower. Like with MPS-ABC, the firm needs to track and register various types of data as well as monitor some additional topics; the standard addresses soil type, cultivation substrate, mechanisms and processes used in the cultivation, type and quantities of crop protection, quantities of waste and processing methods, fertiliser use, storage methods, use of genetically modified organisms (GMOs), and health and safety. Although it addresses some of the same topics as the MPS-ABC standard, the criteria are more detailed. A distinction is made between the primary and secondary criteria. All the primary criteria need to be complied with, whereas the secondary criteria require a 95% compliance rate.

The last standard of MPS for horticulture firms is MPS-SQ, a standard that specifically focuses on social aspects of sustainability (MPS, 2015m). Most details are described in the standard document (MPS, 2014). The standard is benchmarked on the International Code of Conduct (ICC) for cut flowers, as formulated by the International Flower Coordination (IFC). The ICC is based on the International Labour Organisation (ILO) standards (FFP, 2015b) (Wright & Madrid, 2007). The ILO is a specialised part of the United Nations, that aims at promoting rights at work, encouraging decent employment opportunities, enhancing social protection and strengthening the dialogue on work-related issues (International Labour Organisation, 2015a, 2015b). MPS-SQ

aims at improving labour conditions, health and safety for workers, and improving the image of the sector. The standard addresses the following topics: freedom of organisation, anti-discrimination, forced labour, minimum working age, contracts and wages, working hours, annual, illness and pregnancy leave, medical care, housing, health and safety, working with chemicals.

MPS-ABC is a relative standard. This means that the standard's criteria are based on a sector average. The two other standards are benchmarked on pre-existing standards (GLOBALG.A.P. & ILO regulations). The exact standards were formulated by the committee of stakeholders (*College van Belanghebbenden* MPS) and approved by the board of MPS (MPS, 2013a). The committee of stakeholders is the advisory body of MPS with the primary task to oversee the functioning of the standards, and to assure impartiality, objectivity and independence. All market stakeholders in the horticulture sector are represented in the committee (MPS, 2015n). No stakeholders from knowledge institutes, NGOs or governmental bodies are present in the committee of stakeholders, although MPS is looking for an expert on environmental topics. Moreover, MPS does get occasional critique that, as an internationally operating standard, the board and committee does not have enough international representation⁶.

As stated above, MPS-ABC is the most used standard in the horticulture sector; it can be used for all ornamental plants, in the Netherlands or abroad. This makes it the standard with the biggest reach. MPS-ABC is also accessible for less advanced firms, due to its setup as a process standard. The firms do not have to meet certain performance criteria, but set their own improvement goals.

The standard accounts for regional differences by using different upper and lower limits for the performance levels per region. In the pricing, MPS also accounts for differences between regions. According to the tariff list (MPS, 2015f), applicants are charged a €50 administration fee. Certified firms pay a yearly standard fee, based on country; in the Netherlands this fee is €670; additionally, firms are charged a hectare fee, ranging from €85 (<2 hectares) to €1,250 (>20 hectares). MPS-GAP and MPS-SQ cost an additional €75 licensing fee, plus auditing costs; Auditing costs for MPS-ECAS are €560 for a product standard and €585 for a firm standard (MPS-ECAS, 2015h).

MPS-ABC also has a procedure for firms that want to get certified as a group (e.g. franchisers or co-operations). The performances of the individual firms are assessed. The average of the individual scores determines the group level, according to the regular measuring scale. However, the lowest performing individual firm has to perform above a set limit; this limit is lower than the regular limit necessary to be scored on a certain level. This means that an individual firm can perform at B-level, but the group as a whole is rewarded an A-level.

Continuous improvement and learning is assured by continuous feedback from their stakeholders. Feedback on MPS-ABC has resulted in the new standards A+ and Natural Protected (Figure 9). MPS-A+ requires a score of 90 points; MPS-Naturally Protected requires the firm to have MPS-A+ as well as crop protection that meets the organic criteria (MPS, 2015i). MPS-GAP and MPS-SQ have been revised frequently over the last few years, at least every two years (MPS, 2013b, 2014). This demonstrates that MPS is capable of learning from their processes and using feedback to improve.



FIGURE 9 - THE ECO-LABELS OF THE NEW MPS STANDARDS

The regular revision and possibility for stakeholders to give feedback has also resulted in the plans to start of the so-called Product Proof standard. These plans were announced at a meeting with several growers' associations organised by Tuinbranche NL⁸. The Product Proof standard will take the form of a product standard, rather than a firm standard. It will be additional to the improved MPS-ABC standard. A pilot of this project will start in the second half of 2015⁹.

MPS demonstrates no clear cooperation with other standards. They do however carry out the operational tasks and marketing for FFP. Although FFP has an independent board and organisation (FFP, 2015g), MPS does offer FFP as their consumer label to firms, as part of the marketing agreement⁶.

LEGITIMACY

The certification of MPS and the audits are executed by MPS-ECAS (MPS-ECAS, 2015e). Although part of the MPS group, it is an independent organisation, with a separate administration that is inaccessible to employees of MPS and MPS-HCP⁶. MPS-ECAS also executes audits for other standards, such as ISO and Groenkeur (MPS-ECAS, 2015c). Moreover, they have a different board than MPS.

MPS-ECAS, as well as MPS and its standards, are accredited by the RvA (MPS-ECAS, 2015a, 2015f). MPS-ECAS has qualified auditors, with an education and background in agriculture (MPS-ECAS, 2015e). They also have a committee of experts that advise the board of directors and guarantee impartiality, made up of ten stakeholders of MPS-ECAS (MPS-ECAS, 2015d). No proof can be found that MPS-ECAS is ISO/IEC 17065:2012 certified.

MPS and MPS-ECAS use several methods of monitoring the compliance of its participants with MPS-ABC (MPS, 2013a). Between the first ten and sixteen consecutive months of registration, MPS-ECAS conducts an initial audit of the data. After passing the initial audit and thirteen consecutive months of registration, a firm gets MPS-ABC certified. The performance level is reassessed every three months. Yearly, the data of all certified firms is checked through a desk check. 50% of the firms are monitored through a sample test. Additionally, 40% of the certified firms are audited every year, half of which is a full audit and the other half is audited on one topic. These audits entail an administration check as well as a visual check. An additional 10% of the certified firms undergo an unannounced audit. Lastly, MPS-ECAS monitors the correct use of the standard throughout the supply chain of the certified firms.

The monitoring of compliance of MPS-GAP participants is described in the standard document (MPS, 2013b). MPS-GAP requires a certification audit when applying for the standard. After that, yearly audits have to be performed. These audits occur during the harvest season if possible. The certificate is valid for a year and has to be renewed each year. The expiration date of the certificate refers to the original certification date; a late periodical audit will not lead to a postponed expiration date.

As described in the standard document (MPS, 2014), MPS-SQ is monitored through a three year cycle; in the first year a certification audit takes place, in the second and third year annual checks are performed. Additionally, the auditor holds confidential interviews with one or more employees (depending on the size of the firm).

To ensure compliance with the MPS standards throughout the supply chain, MPS offers standards for the actors involved in the distribution of MPS certified horticulture products (MPS, 2015b). However, it is not obligatory for firms distributing MPS products to be certified with one of these standards. Products to be sold as MPS certified, have to have spent at least four months or a third of the growing period at the firm (MPS, 2013a).

MPS has a non-compliance system in place for all its standards (MPS, 2013a, 2013b). The system provides the definition of non-compliance and the sanction mechanisms used by MPS. The mechanisms used are a written warning, correction by the certifying body, a second audit or loss of certification. MPS-ECAS has a policy regarding complaints and appeals, to ensure fair and correct auditing (MPS-ECAS, 2015b).

The board of MPS consists of six persons, of which three are independent, and three are representatives of respectively FloraHolland, *LTO Glaskracht* (LTO's department for greenhouses) and *Vereniging van Groothandelaren in Bloemkwekerijproducten* (VGB, the floriculture wholesalers' organisation) (MPS, 2015n).

The board is also qualified to change the standard if deemed necessary (MPS, 2013a). However, no representatives from outside the sector are included in the board.

MPS is fully financed by the revenue from their standards, such as certification fees⁶. This makes them a financially sustainable firm. The website of MPS also provides the financial reports of several years (although the last report is from 2011) (MPS, 2015k). MPS has no history of legal issues, and their standards go beyond national legal compliance (MPS, 2013a). MPS-SQ specifically mentions that in cases where the legal requirements go further than MPS, the law must be complied with (MPS, 2014). This is important as MPS operates internationally and the specific labour regulations differ even within Europe.

MPS sends a newsletter to those who subscribe and posts regular news messages on their website (MPS, 2015j). Both the regular standards, as their updates, are available online. A list of certified firms is publicly available, as well as cases of non-compliance and revoked certificates (MPS, 2015c, 2015e, 2015i). The most recent annual reports is of 2011; more recent reports are missing (MPS, 2015l).

MANAGEMENT CRITERIA

The MPS standards can be used as an eco-label (Figure 10); however MPS tends to use FFP for consumer communication⁶. MPS is not specifically endorsed by any authority. MPS-HCS provides services such as consultancy and training to guide the firms through the certification process (MPS-HCS, 2015).

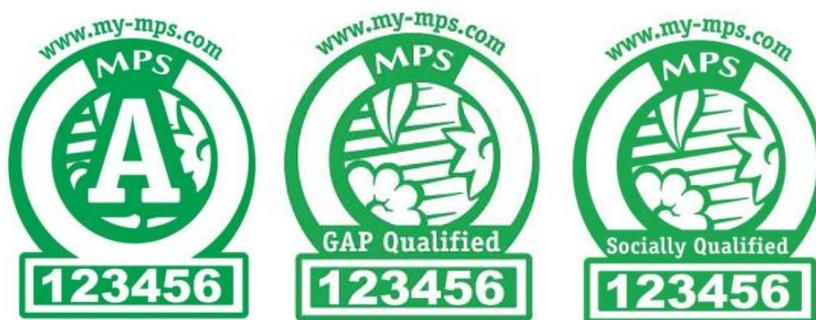


FIGURE 10 - THE ECO-LABELS OF MPS-A, MPS-GAP, AND MPS-SQ (MPS, 2013A, 2013B, 2014)

5.4. FFP

Fair Flowers Fair Plants (FFP) is a consumer label for flowers and plants (FFP, 2015d). The website of FFP outlines the history of the standard (FFP, 2015c). The standard started in 2006 and was originally an initiative from the international floriculture organisation (*Union Fleurs*) to create a social standard for the flower sector. Several (inter)national unions (IUF, IG Bau, *FNV Bondgenoten*), advocacy organisations (Productschap Tuinbouw, the Dutch Flower Auction, HBAG, OLAA), NGOs (ENDS, FIAN), MPS, the Dutch Ministry of Development Cooperation, the EU, and the Rabobank all contributed to the development of the standard.

Nowadays, FFP is run by an independent foundation (FFP, 2015g). However, it is closely cooperating with MPS (FFP, 2015c). MPS is responsible for the marketing and the operational activities⁶. On the website of MPS, the standard is presented as a part of the MPS range (MPS, 2015a). This status was confirmed by a representative of FFP¹⁰.

FFP is a meta-standard. It does not have its own standard, but requires its applicants to adopt a pre-existing environmental and social standard, that they endorse (FFP, 2015h). To assure the quality of these standards, FFP has formulated an endorsement document, which describes the requirements a standard has to meet for it to be endorsed by FFP. As benchmark, FFP uses the ICC, as formulated by the IFC (for the social standards) and the MPS registration system, category MPS-A (for the environmental standards); additionally, the standard has to meet the ICC's audit guidelines (version 2) (FFP, 2015b; Review Committee of Fair Flowers Fair Plants, 2010).

If a standard entails similar criteria as these standards, certified firms become eligible for the FFP label. Currently, over 1,200 firms are certified to produce, distribute and sell FFP products (FFP, 2015j).

EFFECTIVENESS

The mission and vision of FFP is to provide a tool that can help firms in the horticulture sector with their positioning as sustainable firms; they aim at creating and increasing the demand for Fair Flowers Fair Plants products (FFP, 2015g).

As stated, FFP does not have its own standard, but requires third party certification. Currently, applicants in the Netherlands can choose to adopt MPS-A or Groenkeur to meet the environmental part of the label, and MPS-SQ or Control Union Fair Choice for the social part. The effectiveness of the FFP label relies on the criteria set by the third party standards. Therefore, FFP has formulated a benchmarking document that standards need to comply with in order to become an FFP approved standard (Review Committee of Fair Flowers Fair Plants, 2010). The document also describes the minimal content of the endorsed standards. For the environmental standard, FFP refers to MPS-ABC, specifically the A-level. The details of this standard are described in section 5.3. The content of the social standard should match the ICC standard. This standard entails a long list of criteria covering the following topics: freedom of association and collective bargaining, equality of treatment, living wages, working hours, health and safety, the risk of pesticide and chemical use, security of employment, child labour, and forced labour. Selling a mix of FFP products and non-certified products under the FFP label is allowed, as long as 80% of the products carry the FFP label (FFP, 2015i).

The FFP standard can be used for all plants and flowers sold to the consumer market; it operates internationally (FFP, 2015h). The label is sold by several hundreds of retailers throughout the Netherlands and Germany, and a few in other European countries (FFP, 2015j).

FFP charges a yearly contribution fee, proportional to firm size: firms smaller than two hectares pay €55 a year, two to five hectare pay €110 a year, and firms larger than five hectares pay €220 a year (FFP, 2015i). This is excluding the additional costs for certification of the endorsed social and environmental standard. An additional fee of €50 plus travel expenses is charged for the FFP audits (FFP, 2010). Wholesalers pay €275 per year, and retailers pay €55 per affiliate (International Trade Centre (ITC), 2014). The availability of group certification is dependent on the chosen standards.

The benchmarking document of FFP has been revised several times; the version currently in use is of 2010 (Review Committee of Fair Flowers Fair Plants, 2010). The content of the standard is reevaluated by the standard setting body of each respective standard itself.

FFP works actively together with different standards. They allow their applicants to choose from various standards to meet the requirements for certification. Also, they share the operational activities and marketing with MPS (FFP, 2015g). FFP does add value to the field by being the only standard that aims at consumer communication.

LEGITIMACY

Assurance is organised by the endorsed standards. However, FFP does formulate minimal audit requirements in its benchmarking document (Review Committee of Fair Flowers Fair Plants, 2010) and has a specific audit protocol for the social standards available on the website (FFP, 2010). The document describes the outlines of the audit procedure, and a list of minimal requirements for the environmental and social criteria of the standard. The audit procedure must be executed by an independent body, with a proven track record on audits and a participatory multi-stakeholder approach. Moreover, the auditing body needs to assure confidentiality and have a non-compliance system. To ensure legitimacy for the social part of the standard, the IFC parties are present during the audit (FFP, 2015b). FFP monitors the correct use of the FFP label and terms and conditions of certification, via unannounced audits or 'mystery shoppers' (FFP, 2015i). Non-compliance is in accordance

with the endorsed standards (Review Committee of Fair Flowers Fair Plants, 2010). If a firm does not comply with the terms and conditions of FFP, this can lead to temporary or permanent exclusion of participating in the scheme (FFP, 2015i). Standards can lose their FFP endorsement if they do not comply with the benchmarking document (Review Committee of Fair Flowers Fair Plants, 2010); however, how this is monitored is unclear.

FFP is an independent foundation (FFP, 2015g). They work together with many other organisations such as sector organisations, standard-setting organisations, trade unions etc. (FFP, 2015a). Although they share facilities with MPS, they have an independent board, made up of representatives of producers, traders, human rights and environmental NGOs, and trade unions of both developed and developing countries (FFP, 2015g). FFP has one representative observer in the board of MPS (from *Federatie Nederlandse Vakbeweging (FNV)*, the Dutch trade union) (MPS, 2015n).

After becoming independent in 2008, FFP received subsidies until 2012 (FFP, 2015c). After the subsidies were cut, FFP outsourced their operations and marketing to MPS to reduce costs⁵. According to a representative of FFP, they are a part of MPS and therefore do not pay for these services¹⁰. They have had no legal problems in the past.

A list of certified firms can be found on the FFP website (FFP, 2015j). FFP products have a unique code, enabling the consumer retrieve information on the origin and cultivation process of the product. Therefore, not only growers must be certified to be able to use the FFP label; distributors and retailers also need to meet strict criteria. FFP does not have annual reports as they are considered a part of MPS. FFP has a newsletter and news section on the website for regular updates (FFP, 2015f).

MANAGEMENT CRITERIA

FFP is a business-to-consumer label. FFP plants and flowers carry the FFP eco-label (Figure 11). Certified firms are mentioned on the FFP website, where they can add relevant company information (FFP, 2015i). This way the certified firms can communicate their company information with their consumers. FFP has had some media coverage, albeit very little (FFP, 2015e). Various stakeholder groups are involved with the standard and provide their endorsement (FFP, 2015a). No specific guidance scheme is available



FIGURE 11 - THE FFP ECO-LABEL (FFP, 2015D)

5.5. ORGANIC

Organic horticulture (*biologische sierteelt*) is a form of horticulture that is based on the principles of organic agriculture. Organic agriculture is defined by Lampkin as creating 'integrated, humane, environmentally and economically sustainable production systems, which maximise reliance on farm-derived renewable resources and the management of ecological and biological processes and interactions, so as to provide acceptable levels of crop, livestock and human nutrition, protection from pests and disease, and an appropriate return to the human and other resources' (Lampkin, 1994, in Rigby & Cáceres, 2001, pp. 24–25). It is a holistic view of agriculture, based on well-defined principles that are strictly regulated (Rigby & Cáceres, 2001). These principles are laid down in national or regional legislation; in the Netherlands, organic agriculture is regulated by both Dutch and European legislation (SKAL, 2015c). SKAL biocontrole is the organisation in charge of the monitoring of the Organic standard in the Netherlands (SKAL, 2015e). The standard applies to all agricultural products, including decorative plants. The first European statute (Regulation EEC No. 2092/91) on organic agriculture was formulated in 1991 (European Commission, 2014d). How many firms currently cultivate organic ornamental plants in the Netherlands is unknown.

EFFECTIVENESS

The Dutch organic standard (SKAL, 2013) is based on European legislation, in particular statute 834/2007 and the corresponding statutes 889/2008 and 1235/2008. Additionally, SKAL works with the Dutch agricultural

quality law (*landbouwkwaliteitswet*) and their own regulations. The latter describe processes that are not described in legislation, such as the certification process, fees, and compliant mechanisms. The information booklet on the Organic standard sets out the most important characteristics of the standard:

- Starting material and seedlings must be organic and may never have been treated with crop protection chemicals.
- The firm may use only fertilisers that are approved by the regulations for organic agriculture. Also, the firm may use maximally 170 kg of nitrogen per hectare per year from animal manure.
- Application of crop rotation.
- The firm must apply the following cultivation measures:
 - Use of crops that are suitable to organic cultivation.
 - Mechanical measures such as weeding.
 - Use of natural predation for crop protection.
 - It is allowed to use soil covers. If plant based, the cover material should be certified organic.
 - Only approved crop protection substances and strengtheners may be used.
 - Crops should be cultivated in the soil, with exception to crops that cannot be grown in the soil or are sold with its substrate.
 - When grown on a substrate, the medium used should be approved by legislation for organic agriculture.
 - Cleaning and disinfecting buildings and installations can only be done with approved substances.

The European Commission is responsible for the regulations on organic agriculture; they formulate the regulations according to European legislation procedures (European Commission, 2015c). There are various committees and advisory bodies that support the Commission. The regulations are developed in cooperation with The Regulatory Committee on organic production, that is composed of representatives of all EU countries and a Commission representative as chairperson, and closely cooperates with the authorities responsible for the Organic sector to guarantee uniform application across Europe (European Commission, 2015c). The Inter-service steering group (ISSG) represents all departments that have an interest in the EU organic policy (European Commission, 2015a). The ISSG occasionally hold expert hearings with experts from a wide variety of fields (European Commission, 2014c). Lastly, during reevaluation of the standard the Advisory Group on Organic Farming is consulted; this group comprises of representatives of the European organic farming sector, consumers, environmental NGOs, IFOAM EU Regional Group and Eurogroup for Animals (European Commission, 2014a).

The Organic standard is an international standard that can be used in all European nations, on all agricultural products (European Commission, 2014d). Outside of Europe, most nations worldwide have a national or regional Organic standard, that is based on the same principle (International Trade Centre (ITC), 2014). The standard specifically applies to all firms in the supply chain; it is also applicable to firm that import, process, or store organic products (SKAL, 2013).

The list of fees is available of the website of SKAL (SKAL, 2015h). SKAL charges a new applicant €529 for the certification process, with additional fees in certain situations. A certified firm is charged €340 as yearly fee for agricultural firms or €416 for firms further down on the supply chain. The auditing has a starting fee of €213 plus an additional €93 for administration and €93 hourly rate for the audit. There are various additional fees that apply under various circumstances. No distinction is made between large and small firms.

As the standard is based on European legislation the standard is reevaluated like other regulations (European Commission, 2014d). The most recent update of 2014 was accompanied by an impact assessment to evaluate the alternative scenarios for the evolution of the policy, and an action plan on the future of organic agriculture in Europe to help farmers, producers and retailers adjust to the new policy (European Commission, 2015b).

Organic does not cooperate with other standards in the horticulture sector; in fact, the other standards assessed in this thesis are unknown to SKAL¹¹.

LEGITIMACY

The process of certification is made up of six steps (SKAL, 2015f):

1. Requesting the information package; this consist of general information, sector specific information, and the registration form.
2. Application, via the registration form.
3. Registration; the application is confirmed by SKAL and the firm receives its SKAL number.
4. Admission audit; SKAL performs an audit at the firm, to check whether the firm meets the requirements. The auditor files a report on the findings, which is assessed by SKAL.
5. Conversion period: during the following period the firm has to meet the standard's requirements, but is not yet certified. The length of the period depends on the type of firm and crop and can last two to three years (SKAL, 2015d).
6. Certification; after completing the conversion period and receiving a positive assessment from SKAL, the firm is certified. The certificate is available online. From this moment, the firm can bring its products onto the market as organic. This is after about 24 to 36 months, depending on the sowing date of the crop (SKAL, 2015d).

Each EU country has its own authority responsible for controls (European Commission, 2014b). In the Netherlands, this authority is SKAL. According to the information booklet (SKAL, 2013), SKAL is an independent foundation that operates on behalf of the Dutch Ministry of Economic Affairs; their only task is to certify and monitor firms based on the Organic standard; they do not offer consultancy, promotion or advocacy of the interests of the Organic sector. SKAL is accredited by the RvA, based on ISO/IEC 17065:2012 (International Trade Centre (ITC), 2014).

SKAL performs an announced audit at least once a year and additional inspections that can be of the following types (SKAL, 2013): flash control (unannounced audit of one or several topics), re-inspection (in the case the former audit was not satisfactory), sampling (sample check on residue), directed inspection (check of the purchasing/sales balance), supply chain inspection (check of several firms in the chain on specific subject), or re-certification (extensive audit). The information booklet also elaborates on the types of non-compliance (light, severe and fatal deviation) and their sanctions (re-inspection, revoking of certificate, financial penalty); the certificate is valid for an infinite period, if no non-compliances are found (SKAL, 2012).

Because organic agriculture is based on legislation, many conditions for legitimacy are assured by other legislative statutes or bodies. SKAL works according to the General Administrative Law Act, which prescribes their dispute policy (SKAL, 2009). The board of SKAL is formed by several independent members and several representatives from the sectors that are eligible for organic production (SKAL, 2015a).

SKAL is financed by certification fees paid by the certified firms (SKAL, 2015h). As Organic is based on regional and national law, it is very complementary to the legislation. SKAL provides annual reports for 2012, 2013 and 2014 on their website (SKAL, 2015g); these also include an oversight of the finances (SKAL, 2014). They have an online blog and regularly updated website for communication (SKAL, 2015b) and an online database that includes all certified firms (SKAL, 2015i).

MANAGEMENT CRITERIA

Organic products come with an eco-label (Figure 12). As a legislation-based standard, the Organic standard has a strong endorsement from the EU and the Dutch government. Moreover, they have the support of NGOs like Greenpeace and *de Bijenstichting* (the Bee Foundation) (De Bijenstichting, 2015; Greenpeace, 2015).



FIGURE 12 - THE EU ORGANIC ECO-LABEL (SKAL, 2015J)

Bionext is the organisation responsible for promoting organic agriculture nation-wide (Bionext, 2015a). One of its tasks is aiding firms that are interested in organic cultivation (Bionext, 2015b). Organic products tend to sell for higher prices than conventionally produced products, resulting in a higher profit margin for both the retailer and the producer (Van Doorn & Verhoef, 2011).

5.6. NL GREENLABEL

NL Greenlabel is a young standard, aimed at promoting the use of sustainable products and materials in gardens and other outdoor spaces (NL Greenlabel, 2015e). It was set up around the Floriade in 2012 by Nico Wissing (garden and landscape architect) and Lodewijk Hoekstra (garden architect known from 'Eigen Huis & Tuin', a garden TV show) (NL Greenlabel, 2014). NL Greenlabel has entered in two so-called Green Deals with the Dutch national government (NL Greenlabel, 2015e). A Green Deal is a set of agreements between the national government and other parties (firms, NGOs or other governmental bodies); it aims at easing the implementation of sustainability initiatives by adapting legislation, by mediating, facilitating funding or business development (Rijksoverheid, 2015).

NL Greenlabel does not consider itself a standard; they see themselves as a tool to communicate impact assessment, through the so-called sustainability passport. A firm that wants to carry the NL Greenlabel logo, must become partner and let its product(s) be assessed; the assessment is executed by an employee of Royal Haskoning DHV (RHDHV), a Dutch engineering consultancy firm (NL Greenlabel, 2015e). They currently offer a label for non-living and living products, and for professionals. In 2015, approximately 80 firms have their products labelled (the partners) and about 25-30 firms use the labelled products.

EFFECTIVENESS

As stated, NL Greenlabel is based on a scorecard assessment method, the sustainability passport¹² (Figure 13). It can be used for all imaginable products for gardens or public green spaces (NL Greenlabel, 2015d). The score card for wood considers the origin of the product and transport, its composition and production process, business management, durability and maintenance of the product, energy use, and end-of-life processes; the score card for plants replaces durability with biodiversity, energy use with sustainable energy use in the cultivation process, and end-of-life with crop protection (NL Greenlabel, 2014). The performance of the product in these categories can range from an A+ to F level, with A+ being the best score (NL Greenlabel, 2015e).



DUURZAAMHEIDSPASPOORT	
Straatbaksteen	
Materialen en producten	
Afstand en transportwijze:	geen keuze
Samenstelling:	geen keuze
Bedrijfsvoering:	geen keuze
Gebruiksduur:	zeer goed
Onderhoudsniveau:	geen keuze
Energie:	neutraal
Eindeverwerking:	goed

FIGURE 13 – AN EXAMPLE OF A SUSTAINABILITY PASSPORT BY NL GREENLABEL (NL GREENLABEL, 2015E); NO BETTER QUALITY WAS AVAILABLE.

Little information on NL Greenlabel, the criteria used in the assessment, or the assessment process can be found online. All the following information originates from the interview with their accountmanager¹². NL Greenlabel has developed a method that resembles a simplified Life Cycle Assessment (LCA). They did this in close cooperation with RHDHV. During the process many other parties were consulted; among others the TU Delft, the WUR, the VHG, national Dutch government, Natuur & Milieu and Milieu Centraal. Nevertheless, many of the basic requirements have been formulated by Wissing and Hoekstra themselves. The LCA-based

method allows NL Greenlabel to assess the environmental impact of a product as comprehensive as possible. What criteria and indicators are used to determine the scores is unclear.

Information on the standard setting process, as well as monitoring and evaluation of the standard is also lacking. From the interview it can be deduced that the assessment method is continuously reevaluated and perfected. RHDHV uses the Ecoinvent database, a life cycle inventory database, to update the assessment sheet and incorporate new knowledge on environmental impact. Moreover, NL Greenlabel has a scientific advisory board that consists of experts on agriculture, climate science, sustainability, medicine, energy science, and material sciences from several Dutch universities and knowledge institutes (NL Greenlabel, 2015e). The body advises NL Greenlabel on new knowledge on environmental impact etc. No other stakeholders have representatives involved in the organisation. NL Greenlabel does closely collaborate with several 'knowledge and services partners', such as the VHG, Groeibalans (consultancy on soil quality, crop quality and protection) and Royal Lemkes (plant distribution).

NL Greenlabel currently only operates in the Netherlands¹². The standard can be adopted by a wide variety of firms; the NL Greenlabel manual/promotional booklet (available on request) lists products from unprocessed wood to playground equipment, solar panels, LED lights, plant pots, trees and plants (NL Greenlabel, 2014). All firms are charged the same fee of €1000 a year¹². Group certification is irrelevant for NL Greenlabel, as it certifies single products.

The standard is still under development, so it is continuously evaluated, in cooperation with the knowledge partners¹². NL Greenlabel does not collaborate with other standards, though, Groenkeur is one of NL Greenlabel's knowledge partners (NL Greenlabel, 2014). In the interview it was also mentioned that NL Greenlabel has consulted Groenkeur during the formulation of the plant passport.

LEGITIMACY

As stated, no information is available on the assessment process, so the following information is derived from the interview. NL Greenlabel does not set a minimal performance requirement; they certify any firm, as long as it does not use child labour, does not leach toxic substances during use or waste treatment¹². However, a low performance will result in a low score; therefore, until now, most participants have been frontrunning firms¹². Applying firms register with NL Greenlabel; they check if the firm meets the basic requirements. Then the firms have to download an Excel sheet that acts as a calculator for the total score, determining the level of the product. The firm has to fill out the sheet and send it to RHDHV. Subsequently, the account manager of NL Greenlabel (currently employed by RHDHV) verifies the scores. From June, the assessment will be done by the firm together with the account manager, independent from RHDHV. The assessment will take the form of an audit, with the account manager being the auditor, who will execute a field and administration audit. However, he is not accredited or certified for auditing work. After the assessment, the firm obtains the sustainability passport with a list of recommendations on how the firm can further reduce its sustainability impact (NL Greenlabel, 2014). The products can then be compared based on their scores. The passport is valid indefinitely, as long as the firm executes the mandatory yearly reevaluation of its product(s).

As an impartiality check, a third person at RHDHV will check the assessment. *Stichting Eerlijk Buitenleven* (The Honest Outdoor Living Foundation) will act as an independent oversight body to further ensure impartiality. However, the URL to the website of this organisation leads nowhere (Stichting Eerlijk Buitenleven, 2015). NL Greenlabel's only truthfulness assurance is a truthfulness declaration that all partners must sign. Truthfulness is largely based on trust. When foul play is detected, the firm is expelled.

NL Greenlabel is financed by annual fees of their partners¹². They do not have an annual report available for the public. It is also unclear who are in the daily board and who has the final responsibility and decision making power. They do have list of the partners available online, as well as a more detailed list in their handbook (NL Greenlabel, 2014, 2015a). NL Greenlabel communicates with its partners via an e-newsletter.

MANAGEMENT CRITERIA

Partners of NL Greenlabel have various benefits (NL Greenlabel, 2015b):

- They can attend business meetings and the NL Greenlabel networking event.
- They are allowed the use the NL Greenlabel logo as eco-label. All firms using NL Greenlabel can decide for themselves whether and how they use the label.
- The firm is promoted on the various NL Greenlabel media such as the handbook, flyers and website.
- They get a certificate.

NL Greenlabel has various partners, such as *Staatsbosbeheer* (State Forest Management), *de Vlinderstichting* (The butterfly foundation), and *De Vogelbescherming* (Bird protection foundation). Moreover, they are endorsed by the Dutch government through two Green Deals.

The account manager of NL Greenlabel aids firms that want their products to get assessed through the assessment process¹². NL Greenlabel offers their partners recommendations for improvements based on the scores of their assessment¹². This serves as a guidance and training scheme.

6. RESULTS – WOODEN PRODUCTS

This chapter provides an in-depth description of the selected standards for wooden products along the criteria identified in the theory section. The assessed standards are PEFC and FSC.

The Forest Stewardship Council (FSC) is one of the oldest and most prominent sustainability standards worldwide (Pattberg, 2005). It was founded in 1993, after the UN Earth Summit in Rio de Janeiro in 1992 (FSC NL, 2015b). The initiative originated from a group of timber users, traders and representatives of environmental and human rights organisations (FSC, 2015i). They were motivated by the lack of substantiated claims of sustainable forest management and a competent body to monitor these claims (Vallejo & Hauselmann, 2005). FSC was one of the frontrunners in the field of sustainable forest management, and sustainable development in general (FSC NL, 2015b). Many other standards were formulated in reaction to FSC (Kalfagianni & Pattberg, 2011). One of these standards was PEFC (Programme for the Endorsement of Forest Certification). It was formulated in 1999 in Europe by forest owners and the timber industry from eleven countries (PEFC, 2015d). They also wanted to demonstrate sustainable practices; they considered FSC unsuitable as it focused mostly on the tropics and large concession holders¹⁴. In 2005, PEFC became ‘an international umbrella organisation providing independent assessment, endorsement and recognition of national forest certification systems’ (PEFC, 2015d), as a result of the convergence of competing schemes (Kalfagianni & Pattberg, 2011). After this harmonisation the wooden products sector has become dominated by FSC and PEFC, who compete strongly for market share (Vallejo & Hauselmann, 2005).

6.2. FSC

The FSC issues three different types of certificates (FSC, 2015n):

- Forest Management, the standard for forest managers or owners.
- Chain of Custody, the standard for manufacturers, processors and traders of FSC certified forest products. It verifies FSC certified material and products along the supply chain.
- Controlled Wood, the standard that allows organisations to avoid wood that is considered unacceptable.

FSC currently operates in 79 countries and has certified 1,303 firms that together manage about 180 million hectares of forest (Forest Stewardship Council, 2014b).

Pattberg (2005, p. 180) states that, FSC has not only established performance criteria on sustainable forestry, ‘it also developed constitutive ‘rules of the game’, from formal regulations on governance structure, voting rights, and complaint procedures to informal norms such as appropriate behaviour in conflict situations, style of communication, and organisational self-recognition.’ As a result, FSC has become one of the prime examples of a private sustainability standard. FSC is also one of the founding members of ISEAL (ISEAL Alliance, 2014f), which aims at developing a normative benchmark for standards. In their role at ISEAL, FSC has contributed to setting the rules-of-the-game for other private sustainability standards.

EFFECTIVENESS

FSC’s mission is to be environmentally appropriate, socially beneficial and economically viable (FSC, 2015o). Their standard is based on the following ten Principles (Forest Stewardship Council, 2014a):

1. ‘Compliance with laws and FSC Principles: forest management shall respect all applicable laws of the country, in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.
2. Worker’s Rights and Employment Conditions: the organisation shall maintain or enhance the social and economic wellbeing of workers.

3. Indigenous Peoples' Rights: the organisation shall identify and uphold indigenous peoples' legal and customary rights of ownership, use and management of land, territories and resources affected by management activities.
4. Community relations: the organisation shall contribute to maintaining or enhancing social and economic wellbeing of local communities.
5. Benefits from the forest: the organisation shall efficiently manage the range of multiple products and services of the Management Unit to maintain or enhance long term economic viability and the range of environmental and social benefits.
6. Environmental Values and Impacts: the organisation shall maintain, conserve and/or restore ecosystem services and environmental values of the Management Unit, and shall avoid, repair or mitigate negative environmental impacts.
7. Management Planning: the organisation shall have a management plan consistent with its policies and objectives and proportionate to scale, intensity and risks of its management activities. The management plan shall be implemented and kept up to date based on monitoring information in order to promote adaptive management. The associated planning and procedural documentation shall be sufficient to guide staff, inform affected stakeholders and interested stakeholders and to justify management decisions
8. Monitoring and Assessment: the organisation shall demonstrate that, progress towards achieving the management objectives the impacts of management activities and the condition of the Management Unit, are monitored and evaluated proportionate to the scale, intensity and risk of management activities, in order to implement adaptive management.
9. High Conservation Values: the organisation shall maintain and/or enhance the High Conservation Values in the Management Unit through applying the precautionary approach
10. Implementation of Management Activities: management activities conducted by or for the organisation for the Management Unit shall be selected and implemented consistent with the organisation's economic, environmental and social policies and objectives and in compliance with the Principles and Criteria collectively.'

These principles are further specified into criteria, quantified if possible, that firms need to meet¹³.

The website of FSC International clearly explains the standard setting process: 'All FSC standards and policies are developed by the Policy and Standards Unit, proposals for or comments on new normative documents may come from any stakeholder. An internal steering committee is established to oversee the process and a working group to provide technical input and advice during the entire development or revision process of a normative document. Some of these working groups are balanced between environmental, social and economic membership. The Policy and Standards Unit develops a draft normative document in collaboration with the working group. Public stakeholder consultation is carried out on the first public draft and where needed on following public draft versions before the working group is ready to recommend a final draft for approval by the Board of Directors.' (FSC, 2015). What method is used to determine the criteria is unclear.

FSC currently operates in 79 countries, spread across the globe (Forest Stewardship Council, 2014b). They offer alternative certification options, such as group certification, to smallholders and other small actors that might find conventional certification too expensive and complex for their situation (FSC, 2015m). The costs of FSC certification (both forest management and Chain of Custody) depend on various variables, such as firm size, complexity of the process, or type of product; therefore, there is no standard fee example available (International Trade Centre (ITC), 2014). However, FSC indicates the direct costs starting from \$10,000 for a five year term, increasing with acreage and management intensity (FSC U.S., 2011).

The website mentions the following about continuous improvement (FSC, 2015j): FSC develops, reviews and revises policies, standards and procedures on a regular basis; the Principles and criteria have been amended in 1996, 1999, 2001, and 2012. This process involves wide consultation with stakeholders. The FSC standard-

setting process is transparent, democratic and inclusive with many opportunities for the public to participate. FSC does not acknowledge or endorse the PEFC standard, as several of the PEFC endorsed national standards do not meet the FSC Principles¹³.

LEGITIMACY

The FSC standards are monitored by third party auditing firms (FSC, 2015a). In the Netherlands, there are six firms certified to perform FSC audits, amongst which SGS (FSC NL, 2015a). The bodies are accredited by the Accreditation Services International (ASI), an international accreditation body for sustainability standards systems (Accreditation Services International, 2015). ASI carries out annual checks on the auditing firm through a combination of field and office audits (FSC, 2015b). An extra form of assurance is through FSC’s membership of ISEAL, which, as stated in the theory, is setting up a meta-standard for sustainability standards (FSC, 2015). FSC approved auditing firms are not required to be ISO/IEC 17065:2012 certified, as FSC wants to be independent of other standard setting organisations. However, in accordance with the ISEAL guidelines, the FSC criteria conform to or are equivalent of the ISO standard (Forest Stewardship Council, 2015a).

The audit procedure is described on the FSC website (FSC, 2015f). The auditing firm carries out a brief pre-assessment to give the firm the chance to fill any gaps. Subsequently, the main evaluation process takes place. This is an in depth review in the field by a team of experts on social, economic and environmental conditions. If any minor non-conformities are found, the certification body can issue a certificate, on condition that actions will be taken to correct the non-conformities. If there are major non-conformities, the certification body will not issue a certificate until the non-conformities have been solved. This has to be done within three months or the certification is revoked¹³. Forest Management certificates are valid for five years, under the condition that annual audits being conducted (FSC, 2015a, 2015f).

Figure 14 presents the governance structure of FSC. As a membership organisation, the main decision making body of FSC is the General Assembly that convenes every three years (Pattberg, 2005). The Assembly works with a so-called three chamber system: members apply to join one of three chambers, environmental, social and economic, that are further sub-divided into Northern and Southern sub-chambers (FSC, 2015g). Each chamber has equal voting power and within each chamber votes are weighted to ensure that the North and the South each hold 50% of the votes (FSC, 2015g; Pattberg, 2005).

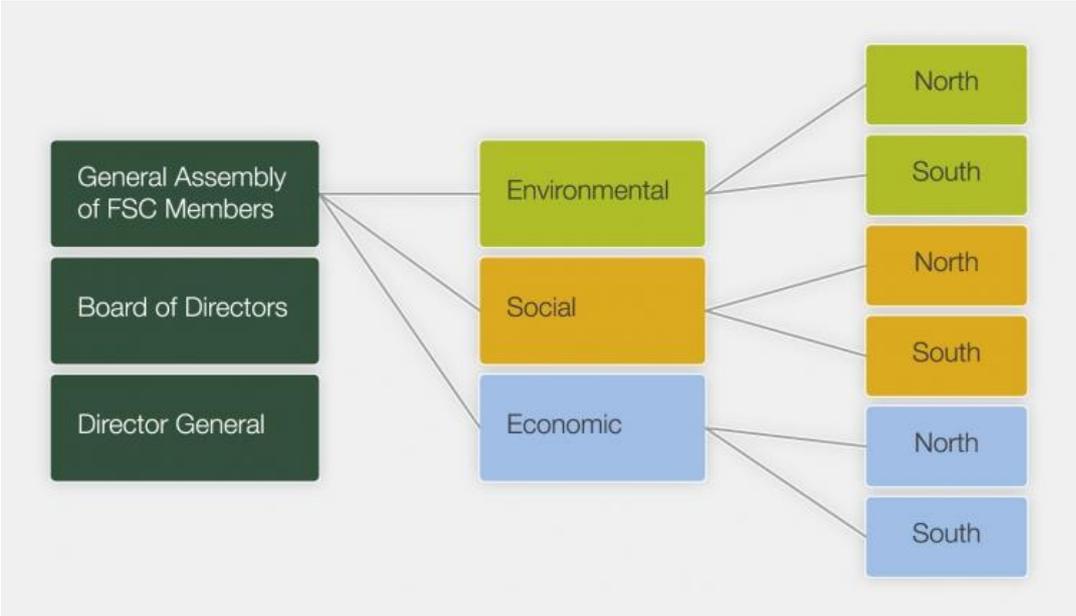


FIGURE 14 - GOVERNANCE STRUCTURE OF FSC (FSC, 2015G)

The Assembly elects a board of directors that is also structured in three chambers and the North-South division (FSC, 2015g). The board decides on all major issues, from approving national representatives and initiatives of the FSC, to allocating the annual budget, to approving new standards (Pattberg, 2005). The operational work of FSC is executed by the FSC international secretariat in Bonn, Germany, and led by the Director General, who is appointed by the board (FSC, 2015g; Pattberg, 2005). FSC is a membership organisation; all stakeholders of FSC can become member of the organisation (FSC, 2015d). Members and other stakeholders are regularly consulted; a list of current consultation options is available on the website (FSC, 2015e)

FSC is financed by yearly contribution for certification and membership fees¹³. In their principles FSC has explicitly included compliance with applicable legislation, ensuring legal compatibility.

FSC has a public online database for its certified firms and products (FSC, 2015k); the database contains all certificates, plus a summary of the audits and firm performances¹³. FSC has a regularly updated news section, a newsletter, and annual and financial reports available online for the last decade (FSC, 2015c, 2015h).

MANAGEMENT CRITERIA

FSC has an eco-label for its products (Figure 15). FSC is endorsed by many parties, amongst others large NGOs (WWF, Greenpeace), trade unions, and the Dutch government (Forest Stewardship Council NL, 2015; Wereld Natuur Fonds, 2015). In the Netherlands they have close to 300 partners (Forest Stewardship Council NL, 2015). FSC has a dedicated program for support, including streamlined certification requirements, technical guidance, specialised training and other resources, to bring the benefits of certification to small and community producers (FSC, 2015f).



FIGURE 15 - FSC
TRADEMARK/ECO-LABEL
(FOREST STEWARDSHIP
COUNCIL, 2015B)

6.1. PEFC

PEFC is an international meta-standard that promotes sustainable forest management (PEFC, 2015e). PEFC has formulated a framework for sustainable forestry, the Sustainability Benchmark, against which PEFC assesses national standards (PEFC NL, 2015g). In total, PEFC offers five standards:

- Standard Setting (PEFC ST 1001:2010); the requirements for standard-setting bodies in the development and revision of standards. It is based on ISO/IEC Guide 59.
- Sustainable Forest Management (PEFC ST 1003:2010); the requirements for forest management standards that are applicable to all types of forests.
- Group Forest Management Certification (PEFC ST 1002:2010); the requirements for forest certification schemes which include group forest management certification
- Chain of Custody (PEFC ST 2002:2013); the requirements that organisations must comply with in order to be able to obtain Chain of Custody certification, to track certified material and assure the product meets the PEFC standard.
- Certification and Accreditation Procedures (Annex 6); the certification and accreditation procedures for national certification schemes

In practice, this means that forest owners certify their forest according to PEFC endorsed standards; the certified forest produces certified wood that is then processed by PEFC-Chain of Custody certified firms further down the supply chain into wood and paper products that can then make use of the PEFC label (PEFC NL, 2015f).

PEFC is the largest forest certification system in the world: they have certified about a million forest owners, who manage over 260 million hectares of forest; 16,000 firms wield the PEFC Chain of Custody certificate (PEFC NL, 2015g).

EFFECTIVENESS

As stated, PEFC is a meta-standard. They do not assess firms or products, but other standards. The assessment is based on PEFC's Sustainability Benchmark, a set of over 250 criteria originating from international multi-stakeholder initiatives; examples are Forest Europe (Ministerial Conference on the Protection of Forests in Europe), ATO (African Timber Organisation) and CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) (PEFC NL, 2015g).

The Benchmark addresses economic, environmental and social topics. The website of PEFC sets out the criteria for the standard (PEFC, 2015i). These include the following:

- Maintaining or enhancing biodiversity;
- Protecting ecologically important forest area;
- Prohibition of forest conversions; exclusion of certification of plantations established by conversions;
- Prohibition of the most hazardous chemicals and GMOs;
- Protecting workers' rights and welfare, and encouraging local employment;
- Recognizing the principle of free, prior and informed consent (FPIC), the UN Declaration on Indigenous Peoples' Rights, and ILO Convention 169 on Indigenous and Tribal Peoples;
- Respect for property and land tenure rights as well as customary and traditional rights;
- Provisions for consultation with local people and stakeholders;
- Abiding by applicable laws;
- Safeguarding the basic rights of workers;
- Meeting all fundamental ILO labour conditions.

PEFC currently operates in 38 countries, of which 35 have an accepted forestry standard; most of the currently certified forests (85%) are located in the Northern hemisphere (PEFC NL, 2015g). In the Netherlands, the costs of getting certified for the Chain of Custody standard is dependent on the yearly turnover of the firm: a firm that has a turnover of under €1 million a year pays €160, whereas a firm with a turnover of over €500 million a year is charged a fee of €3,150 (PEFC NL, 2015h). No standard cost estimate of the forest management standard is available, as it depends on a wide variety of conditions (International Trade Centre (ITC), 2014).

According to PEFC, they are the certification system of choice for small, non-industrial private forests. They support this statement with the following arguments (PEFC, 2015i): the structure of regional and national certification with a globally endorsed label is perfect for smaller firms. They also tailor to the specific needs of family- and community-owned forests, with lasting contributions to livelihoods and rural development. Another opportunity PEFC offers its members is group certification, providing access to certification and the marketplace for certified products from locally controlled forestry.

The Sustainability Benchmark is regularly updated and endorsed standards must be reevaluated at minimum every five years, to ensure continuous improvement (PEFC NL, 2015g). PEFC does acknowledge and endorse the FSC standard¹⁴. Numerous, unsuccessful, attempts have been made by PEFC and its supporters to minimise the perceived differences between the two standards and lobbying for mutual recognition between FSC and PEFC (Vallejo & Hauselmann, 2005).

LEGITIMACY

PEFC uses a 'bottom-up' approach to governance; it builds on the National Governing Bodies, independent, national organisations with local expertise that implement a PEFC system within their country, and experienced International Stakeholder members, international entities including NGOs, firms and associations (PEFC, 2015c). This way PEFC ensures compatibility with the local circumstances and support of the community, as well as experience and legitimacy from big international players.

PEFC has three decision-making bodies (PEFC, 2015c):

- The General Assembly is the highest authority of PEFC. Both national and international members are represented and have voting rights. This is complemented by additional members as observers.
- The Board of Directors supports the work of the General Assembly and the organisation as a whole. Board members are elected by the General Assembly. A balanced selection is made to ensure equal representation of the major stakeholders supporting PEFC, all participating nationalities, annual cutting categories, and gender.
- The Secretary General is responsible for the work of the PEFC Secretariat in Geneva, Switzerland, who is supported by a team of ten professionals.

Standards willing to get endorsed by PEFC have to go through the following process, as described on the PEFC website and shown in Figure 16 (PEFC, 2015f): The national certification system is assessed by national and global stakeholders through public consultation, a panel of experts, the Board of Directors, and an independent PEFC Registered Assessor, based on all comments received, field trips, and other available information. The Board of Directors provides a recommendation to the General Assembly, which then votes on the endorsement of the national system. A two-thirds majority is required for a system to be endorsed. The entire process takes on average nine months to complete. All documents used in the application process are publicly available.

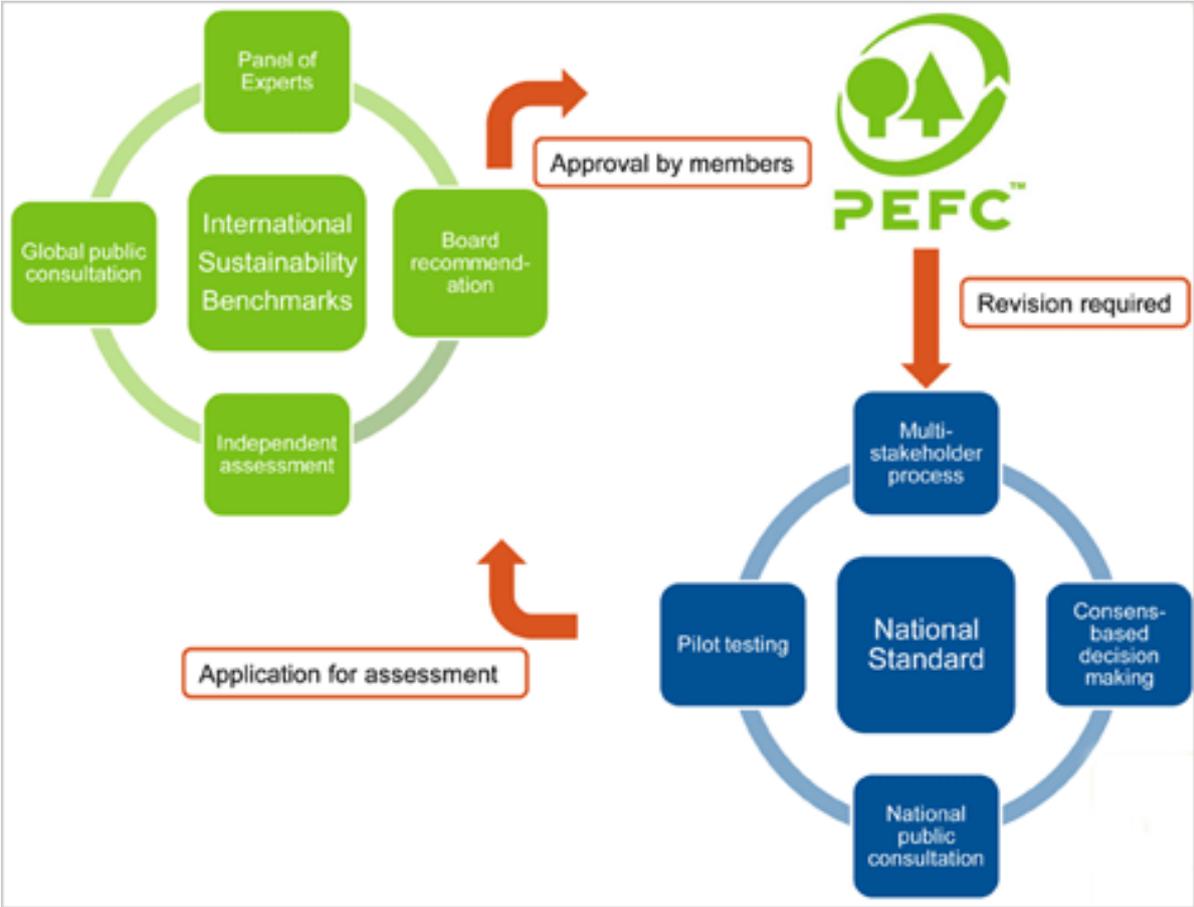


FIGURE 16 - ENDORSEMENT PROCESS OF PEFC (PEFC, 2015F)

Certification of the PEFC-endorsed standards and the accreditation of the certification bodies is outsourced to third parties. PEFC uses the internationally recognised requirements for certification and accreditation defined by ISO and the IAF; national members of PEFC have to organise national third-party auditing, that must comply with ISO/IEC 17065:2012 (PEFC Council, 2014; PEFC, 2015a); Dutch auditing bodies also have to be accredited by

the RvA (PEFC NL, 2015b). The auditors have to be ISO 19011:2002 certified, the international standard for quality and environmental management systems auditors (PEFC, 2015a).

In the Netherlands, for both the forest management standard and the Chain of Custody standard firms are subjected to a field audit each year (PEFC NL, n.d., 2015d). Non-conformities are expected to be solved in a period of time dependent on their severity; in the case of a minor non-conformity, the firm has a year to solve the non-conformity. In case of a major non-conformity, it has to be solved within three months; if he/she fails to do so, the certification is revoked¹⁴.

As stated above, stakeholders are involved throughout the entire standard setting process; in fact, all interested parties can participate (PEFC, 2015i). International stakeholders (operating in two or more countries, or legally registered as international organisations, whose principles and objectives are supportive of PEFC) are welcome to apply for the PEFC membership, allowing them to participate in PEFC's annual General Assembly with full-voting rights; moreover, they are given the opportunity to exert influence on the standard and its content.

The page on governance on the PEFC International website (PEFC, 2015c) outlines the financial structure of the organisation. PEFC is a not-for-profit organisation. It has an annual budget of 2.5 million Swiss francs. Its activities are financed almost entirely (99%) from membership fees. Annual reports, including the financial statement, can be found for various years including 2013 and 2014 (PEFC, 2015b). The standard has included a criterion in the Sustainability Benchmark on the compliance with local legislation, hereby obligating all endorsed standards to comply with local laws and regulations. On the website of PEFC NL a database of certified firms and products can be found (PEFC NL, 2015a). It also contains a news section and firms can sign up for the newsletter (PEFC NL, 2015e).

MANAGEMENT CRITERIA

PEFC NL has an eco-label for PEFC Certified wood products, PEFC recycled wood product, promotional purposes (Figure 17); the use of each label is strictly regulated and monitored (PEFC NL, 2015c). PEFC offers a range of guidance services to auditors, national standards, or (certified) firms (PEFC, 2015h).



FIGURE 17 - THE PEFC CERTIFIED WOOD LABEL, THE PEFC RECYCLED LABEL, AND THE PROMOTIONAL LABEL (PEFC NL, 2015C)

PEFC is endorsed by various organisations, such as international timber organisations and sector organisations (PEFC, 2015g). However, they are not unconditionally endorsed by large NGOs such as Greenpeace and the WWF (Greenpeace, 2014b; Wereld Natuur Fonds, 2015).

7. RESULTS – SECTOR SPECIFIC EXPERIENCE

This chapter provides an overview of the experience with certification in the sector, as identified in the interviews and observations during the research. The interviews with people from sector have indicated several themes. The Dutch market for horticulture products is very much price-drive. However, frontrunning firms are interested in using sustainability and certification for competitive advantage. The less pro-active firms are more interested in certification as a tool to communicate compliance and as a guarantee. Another topic that was brought up by several interviewees was the practical feasibility of the standard. Two trends that were identified by the author are the lack of a coordinated approach and the lack of a holistic approach. Below the themes are addressed in more detail.

7.1. PRICE COMPETITIVE

As stated in chapter 3.2, ornamental plants are a luxury product. Therefore, the market for horticulture products is largely price driven. The main motivation for a Dutch consumer to buy a specific product is low price, although several actors also identify the appearance of the product as a motivational factor. Although surveys in the sector (Productschap Tuinbouw, 2011) show that consumers are interested in sustainable products, this largely applies to plants meant for consumption¹⁵. This also applies to public projects; although the government has formulated purchasing standards for horticulture products (Rijksoverheid, 2009), in practice the costs of the project are the critical factor¹⁵. In the past, this contradiction in the government's purchasing policy has led to frustration for the growers. An example was given in the interview with ZLTO¹⁶. A few years ago, the government tried to incentivise growers to adopt the Milieukeur standard by promising a reduction in monitoring by governmental bodies, and thus less bureaucracy and costs. Several growers signed up for this deal and made significant adjustments in their firms to meet the standard. However, the promised reductions in monitoring were never put into practice. Situations like in this example have led to a general antipathy towards certification amongst growers.

7.2. SUSTAINABILITY AS A COMPETITIVE ADVANTAGE

Although in this sector sustainability does not add direct value to a product by increasing consumer interest, within the supply chain it can act as a competitive advantage. The contact liaison of LTO Noord stated that in several sub-sectors, groups of firms have expressed interest in using private standards to distinguish themselves from their competitors; by adopting a stringent standard, like Groenkeur or Milieukeur, firms demonstrate that their products are more sustainable, and thus pose lower risks, than their competitors¹⁵. An important consequence of this trend is that standards are expected to promote themselves to create a market for products carrying their certificate. This demand for active promotion has led to the creation of the Groenkeur standard for arboriculture products. Effectively, Groenkeur has adopted large parts of the Milieukeur standard for arboriculture products and added a marketing strategy to promote the standard, on request of the sector.

7.3. CERTIFICATION AS A GUARANTEE

By publishing a report on the use of crop protection in the Dutch horticulture sector (Greenpeace, 2014a), Greenpeace has shaken up the sector. By naming and shaming several retailers, they have done great damage to the sector's reputation^{1,9}. This has motivated retailers to formulate stricter demands for their suppliers. A German retailer is forcing its suppliers to ban certain chemicals by 2016⁸, whereas Intratuin will source 70% of its products from certified firms by 2020⁹. The director of ZLTO called this the 'shifting away of responsibility'. By demanding certification from their suppliers, the retailer can deny all responsibility and make the supplier accountable for any future criticism from society. For the growers, certification acts as a guarantee that their products meet the, often complex, demands of their customers. Again, they are trying to avoid liability, to protect their firm from potential claims.

This focus on certification as a guarantee has been the cause of a lot of critique on MPS and their standards^{7,15}. Growers are requesting a standard that certifies products rather than the firm, in order to assure compliance to both legislative and retail demands concerning crop protection¹⁵. Also, a more stringent take on the MPS-ABC system is deemed necessary by the sector⁷. MPS has responded by setting up the MPS-A⁺ and the Product Proof standard⁸.

7.4. TRUSTWORTHY ASSURANCE

If a sustainability claim of a grower is questioned, the grower's reputation could be damaged or he could even lose its customers. The trustworthiness of the claim stands or falls with the quality of the assurance system. However, it is difficult to reach a 100% certainty that the claims made are correct. As was stated in the theory, this is a flaw in the assurance system. This problem was also confirmed by several of the interviewees^{7,16}.

The most used standard in the sector is the MPS-ABC standard, as it is the most accessible. However, several actors in the sector have expressed their dissatisfaction with the standard. They consider it unsuitable for providing a guarantee⁷. In response to this critique, MPS has emphasised that the MPS-ABC standard is meant as a registration system, and should not be used as a sustainability standard⁶. This demonstrates that there is a lack of clear communication between MPS and the growers. The standard has also been criticised for making it easy to tamper with the system⁴. For example, Milieukeur and Groenkeur products can be easily mixed with non-certified products and sold as certified. However, this is a flaw that can be found in the other standards as well. An important statement was made by the chairman of ZLTO¹⁶: he emphasised the importance of leaf sampling as an assurance method. He stated this is the only way one can truly monitor the use of crop protection. This call for more sampling was supported by several of the other interviewees^{4,7,9}.

7.5. PRACTICAL FEASIBILITY

Firms that look for a standard that acts as a guarantee for buyers, practical feasibility is important. From the interviews with the sector, it became apparent that some of the criteria set out in the standards are difficult to put in practice, or even impossible, without inhibiting sales and/or profits^{4,7}. A good example was given by the account manager of Griffioen Wassenaar⁴: he mentioned that his customers, the retail, do not plan their orders far ahead; they place their order based on actual sales. This requires distributors and producers to be very flexible and able to source products on a very short notice. In practice, this means that a producer might not have enough own, certified stock to supply the order and has to complete the order with uncertified products from other suppliers. According to several standards, these complementary products may not be transported by the same vehicle as the certified products. In this case, and many others, the requirements of the standard do not match with the reality of doing business in this sector.

7.6. LACK OF COORDINATED APPROACH

Many of the firms are MPS-ABC certified, but as stated, there is some criticism toward the standard. As a result, firms are moving towards more stringent standards. Due to the large number of alternatives, the certification field is fragmented. This is amplified by the use of a franchise structure by most garden centres. Although some larger franchises have a central purchasing centre, most franchisees have the right to formulate their own purchasing policy. As a result, farmers have to deal with numerous demands from their stakeholders. The amount of options combined with the variety of demands has led to a situation where each of the standards is given only a share of certified firms, turning sustainability into a niche market in the sector. As a consequence, each of the standards stays relatively small compared to MPS, limiting their respective competitive power. This results in a lock-in; none of the standards is capable of growing large enough to invest in their standard and expand or improve their services. An example is Milieukeur. The fees of the standard are kept low to be accessible; however, this limits the capacity to promote their standard, which lowers their suitability to the sector's wishes.

7.7. STRONG FOCUS ON CROP PROTECTION, LACK OF HOLISTIC APPROACH

Another trend that was identified is the strong focus on crop protection. Due to the campaign by Greenpeace, firms in the horticulture sector are incredibly aware of their use of crop protection and focus on ensuring their products meet all criteria set by the government, their customers and society. However, to improve the sustainability impacts of their products, the firms in the sector need to focus on more than one topic. In fact, it could prevent another reputation crisis in the future if they start to work on potentially important topics right now. Retailers already express interest in other topics such as wood and child labour^{9,17}, however, among the growers this broad vision is still missing.

8. MULTI-CRITERIA DECISION ANALYSIS - HORTICULTURE

This chapter contains the multi-criteria decision analysis (MCDA) of the standards for horticulture products based on the criteria outlined in the theory. The analysis is displayed per core theme: effectiveness, legitimacy, and management criteria. Appendix I contains the scores table for the MCDA.

8.1. EFFECTIVENESS

Figure 18, Figure 19, Figure 20 and Figure 21 present the scores of the eight selected standards for effectiveness. Table 10 provides the criteria the standards were assessed on and their indicators.

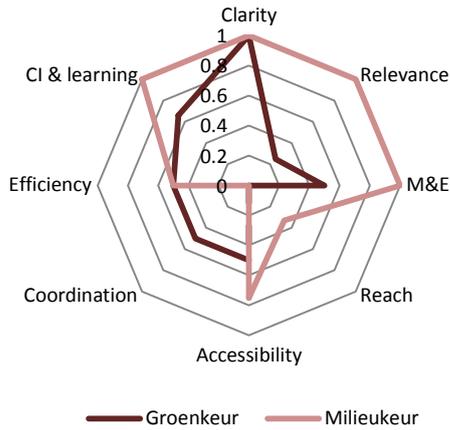


FIGURE 18 - SCORES OF GROENKEUR AND MILIEUKEUR FOR EFFECTIVENESS

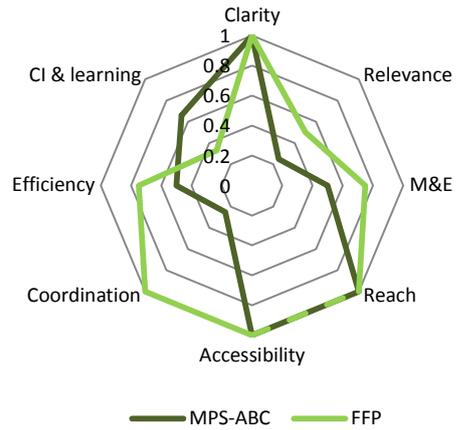


FIGURE 19 - SCORES OF MPS-ABC AND FFP FOR EFFECTIVENESS

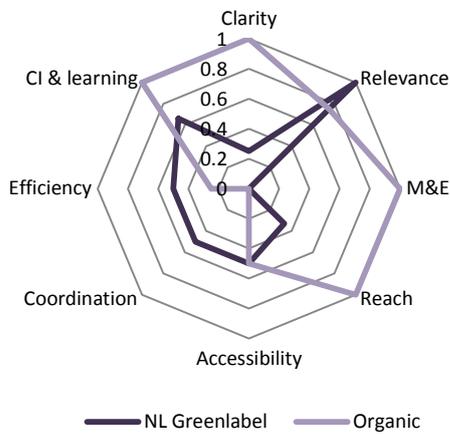


FIGURE 20 - SCORES OF NL GREENLABEL AND ORGANIC FOR EFFECTIVENESS

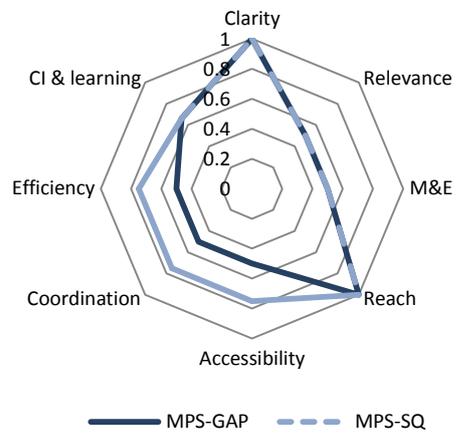


FIGURE 21 - SCORES OF MPS-GAP AND MPS-SQ FOR EFFECTIVENESS

TABLE 10 - CRITERIA FOR EFFECTIVENESS AND THEIR INDICATORS

CRITERION EFFECTIVENESS	INDICATORS
Clarity of standard formulation	<ul style="list-style-type: none"> - Quantitative criteria - Detailed standard document available - Description of certification process - Instructions for certification process
Relevant objectives	<ul style="list-style-type: none"> - Sustainability expert panel - Addressing main challenges - Stakeholders involved in standard setting - Regular revision
Strong M&E system	<ul style="list-style-type: none"> - Annual reports - Multi-actor system - Non-compliance system - Strong accreditation
Broad reach	<ul style="list-style-type: none"> - Usable for entire sector - Usable in many nations - Included in ITC Standards Map
Accessibility	<ul style="list-style-type: none"> - Scaled fee model in relation to firm size - Fee €1000 or lower - Several levels of stringency in certification - Group certification
Coordination with other standards	<ul style="list-style-type: none"> - Cooperation with other similar standards - Possible to use several standards combined - Complimentary to other similar standards - Benchmarking based on other standards
Efficiency	<ul style="list-style-type: none"> - External efficiency: <ul style="list-style-type: none"> - Minimised overlap with other standards - Consistency - Shared systems with other standards - Internal efficiency <ul style="list-style-type: none"> - Little overhead
Continuous improvement and learning	<ul style="list-style-type: none"> - Review of standards at minimum every five years - Complaints mechanism - Forums for exchange of expert information

Clarity of standard formulation. All standard except for NL Greenlabel define the criteria that applicants should meet in detail, if possible in quantitative units. As FFP does not formulate its own criteria, but certifies firms through the endorsement of other standards, the standard document uses two other standards (MPS-ABC and ICC) as examples. Standards willing to get endorsed can use these as a guideline. All standards provide a clear description of how a firm gets certified, including instructions.

NL Greenlabel gets the lowest score for clarity, as it lacks most indicators above. The website provides no information on the procedures a firm needs to go through to get certified, other than contact details for further information. The topics addressed by the standard are listed in the NL Greenlabel handbook and assessed by filling out an Excel calculation model. The model mentions the (quantitative) variables on which the scores are based, but the applicant is not informed how these variables relate to a certain score. How the data provided by the applicant is processed is also unknown. Even if this information is provided during the application process, a new applicant is unaware of the procedure it is signing up for.

Relevant objectives. Table 11 lists the topics addressed by the selected standards. Of the environmental standards, Milieukeur and NL Greenlabel are the only standards that consider the actual impact of the sector on the environment. Milieukeur uses input from stakeholders to determine the impact, whereas NL Greenlabel uses the Ecoinvent database to determine the life cycle impact of a product. Therefore, they will be more accurate at reducing the environmental impact of products. The other standards lack criteria on certain important topics such as biodiversity (MPS-ABC & MPS-GAP), energy use (Groenkeur) or water use (Organic & NL Greenlabel).

TABLE 11 – THE TOPICS ADDRESSED BY THE STANDARDS

ORGANIC	GROENKEUR	MILIEUKEUR	NL GREENLABEL
<ul style="list-style-type: none"> • Crop protection • Minerals/fertilisers • Biodiversity • Starting material • Method of cultivation 	<ul style="list-style-type: none"> • Crop protection • Minerals/fertilisers • Biodiversity • Genetic quality • Plant pot material • Equipment quality 	<ul style="list-style-type: none"> • Crop protection • Minerals/fertilisers • Biodiversity • Energy use • Greenhouse gases • Water use • Waste and packaging • Resource use • Hazardous substances & fine dust • Labour conditions • Nature and landscape 	<ul style="list-style-type: none"> • Crop protection • Fertilisers • Biodiversity • (Renewable) Energy use • Composition • Maintenance • Production location and transport • Business management
MPS-ABC	MPS-GAP	MPS-SQ	FFP
<ul style="list-style-type: none"> • Crop protection • Minerals/fertilisers • Energy use • Water use • Waste 	<ul style="list-style-type: none"> • Crop protection • Minerals/fertilisers • Energy use • Water use • Waste • (Genetic) quality • Methods of cultivation • Soil • Use of GMOs • Health and safety 	<ul style="list-style-type: none"> • Freedom of organisation • Anti-discrimination • Forced labour • Minimum working age • Contracts and wages • Working hours • Annual, illness and pregnancy leave • Medical care • Housing • Health and safety • Working with chemicals. 	<ul style="list-style-type: none"> • Crop protection • Minerals/fertilisers • Equality of treatment • Forced labour • Child labour • Living wages • Working hours • Health and safety • Risk of pesticide and chemical use • Security of employment

MPS-ABC is significantly different from the other standards. MPS-ABC is a process standard that certifies a firm (MPS, 2013a). This means that the standard does not draw conclusions on the sustainability of a product, like the other standards. As a consequence, the standard cannot make any statements or offer any guarantees on the impact of a product. This lowers the relevance of the standard, as it does not address the main sustainability challenge, namely environmental impact of the product. Moreover, the standard focuses on registration of quantitative variables, which rules out the possibility of assessing practices that cannot be expressed quantitatively. As FFP uses MPS-ABC as its example standard, they will likely have the same flaw. In general, the score of FFP is highly dependent on the chosen environmental standard.

As the Organic standard is embedded in European and Dutch legislation, the standard was formulated with great care. The other standards use a committee of experts to determine the content of the standard. The level of expertise of these committees varies. Milieukeur, Organic and NL Greenlabel consult academics, knowledge institutes, NGOs, and other experts on environmental impact to identify the focus of their standard(s). However, the committees of experts of Groenkeur and MPS do not include any representatives of such expert bodies. Moreover, they miss important stakeholders in the standard setting committees. This lowers their

score on relevance. However, Groenkeur has indicated that they might include NGO representatives in the future.

Strong monitoring and evaluation system. All standards but NL Greenlabel have a non-compliance system and are accredited by the RvA or employ accredited assurance body. Annual reports can be found on the websites of all standard, except for NL Greenlabel. However, Groenkeur only presents the report of 2013, whereas MPS' latest report is of 2011. FFP does not formulate its own annual reports, as it is a part of MPS financially.

Broad reach. The reach of all standards is shown in Table 12. Organic, MPS and FFP have the broadest reach of the selected standard. The organic standard is used worldwide in the entire agricultural sector. The MPS standards and FFP also operate internationally, mostly in Europe. NL Greenlabel is currently only used in the Netherlands, but can be applied to a large variety of products. It can be used for all living and non-living products that can be used in the design of gardens and public green spaces. Milieukeur and Groenkeur apply predominantly to outdoor cultivation in the Netherlands. In comparison, Milieukeur can be used for a wider variety of products than Groenkeur, as it is used for products cultivated in greenhouses and soon also for flower bulbs, as well as cultivation outside of the Netherlands. Although, that the current numbers are negligible, Milieukeur does offer the option, therefore, they get a higher score.

TABLE 12 - REACH OF ALL HORTICULTURE STANDARDS

STANDARD	GEOGRAPHICAL SCOPE	FOCUS GROUPS	NUMBER OF CERTIFIED FIRMS
Groenkeur	The Netherlands	Arboriculture	12
Milieukeur	The Netherlands	Arboriculture Greenhouses Bulbs	50
MPS-ABC	Global	All plant firms	3,100
MPS-GAP	Global	All plants	350
MPS-SQ	Global	All plant firms	200
FFP	Global (mostly Europe)	All plants	1,200
NL Greenlabel	The Netherlands	All garden related products	80
Organic	This specific standard in EU, but the organic principles are used worldwide	All plants	N/A

Accessibility. Table 13 shows the cost structure of the selected standards. Most standards have an initial fee for new applicants. This balances around the same level of several hundred euros, except for NL Greenlabel. Most standards (except for NL Greenlabel and Organic) use a scaled fee model in the form of a hectare fee. This way the standard organisation can charge its participants in proportion to firm size and thus revenue. The latter is also realised by higher fees for greenhouse cultivation, that generally have higher revenue streams.

Seen that Milieukeur, Groenkeur, MPS-GAP and Organic base their criteria on actual impacts measured in the environment, the stringency of the standard is unrelated to the current level of sustainability in the sector; all firms have to perform above a certain level, regardless of their current performance. This makes them quite stringent. MPS-ABC classifies the performance of the firm at three levels of stringency, whereas most standards offer a pass-or-fail standard. This offers firms the ability to choose how strongly they want to limit their impact. NL Greenlabel assesses the impact of a product, providing a score rather than a pass or fail. This allows firms to perform on different levels, like MPS-ABC. As a standard for social aspects, MPS-SQ is not that stringent from Dutch principles, as many of their criteria are legally organised in the Netherlands. MPS-ABC is the only standard with a procedure for firms that want to get certified as a group. However, this group standard allows firms to be scored higher on the ABC-scale than it would be individually. Therefore, the trustworthiness of the group standard is questionable. Milieukeur does have a reduction in costs for firms that apply in a group, providing the option to collaborate to small firms.

TABLE 13 - COST STRUCTURE OF THE STANDARDS

	INITIAL COSTS	YEARLY FEE	HECTARE FEE PER YEAR	COSTS FOR SUPPLY CHAIN ACTOR	AUDITING COSTS
GROENKEUR	€400	-	Avenue trees €300 (0-20 ha) €600 (20-40 ha) €1,200 (>40 ha) Other €300 (0-5 ha) €600 (5-10 ha) €1,200 (>10 ha)	-	€560
MILIEUKEUR	€250 (individual) €1,000 (groups)	€100	€10-35 (outdoor) €115 (indoor)	€500	SGS
MPS-ABC	€50	€670+€115 RvA costs	€85 - €1250	€250	€585
MPS-GAP	-	€115 + €75 (licensing costs)	-	€250	€560
MPS-SQ	-	€115 + €75 (licensing costs)	-	€250	€560
FFP^v	dependent on standard	dependent on standard	€55 (<2 ha) €110 (2-5 ha) €220 (>5 ha) + standard fees	€275 (wholesales) €55 (retail)	Dependent on standard
NL GREENLABEL	€1000	?	-	-	-
ORGANIC	€ 529,-	€340	-	€416	€306 + €93 per hour

Coordination with other standards & efficiency. Figure 22 displays the relations between the standards. FFP demonstrates a high efficiency and cooperation with other standards. FFP works closely together with other standards; the organisation shares the operational activities and marketing with MPS. However, the exact relation between the two is unclear. The website of FFP states that it is an independent organisation; MPS and even a representative of FFP state it is part of MPS. As for the standard of the FFP label, this is based on other standards, rather than their own set of rules, they do not add any new requirements to the field. However, they have a fundamentally different approach than other standards for the horticulture sector by aiming at consumers instead of business-to-business. Therefore, they score low on overlap. By making the FFP label accessible for firms that comply with several different combinations of standards, FFP scores high on complementarity with the existing standards and efficiency. MPS-SQ also has significantly different objectives than the other standards. MPS-SQ is the only standard that fully focuses on social sustainability and can be used together with the other MPS standards and possibly other standards. Therefore, the standard scores well on compatibility and complementarity. All other standards have virtually the same objectives. They all address environmental sustainability, albeit with slightly different methods and criteria. Groenkeur is considered by several actors to be virtually a copy of the Milieukeur standard, except for the active promotion of the label. MPS-ABC and MPS-GAP employ a slightly different method, but in the addressed topics they have a large overlap with Groenkeur, Milieukeur and organic. All interviewees expressed little interest in working together with other standards, with the exception of NL Greenlabel. NL Greenlabel has expressed the interest of holding a similar position as the FFP standard, and becoming a meta-standard¹²; they would accept other certification as a form of compliance, but do place additional requirements if necessary. Groenkeur scores some points by allowing firms to use their prior certification as proof of good practices.

^v Costs FFP are excluding costs for additional certification via endorsed standards.

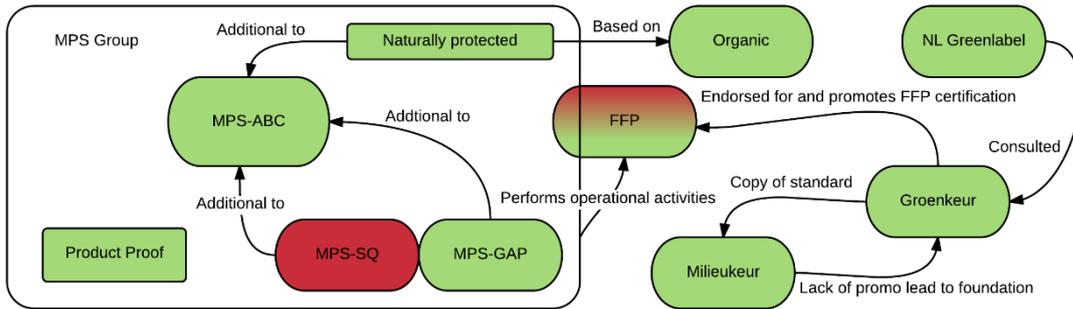


FIGURE 22 - THE RELATIONS BETWEEN THE SEPERATE STANDARDS. THE COLOURS STAND FOR THE TOPIC OF THE STANDARD, GREEN BEING ENVIRONMENTAL, AND RED BEING SOCIAL. THE STANDARDS IN RECTANGLES ARE IN DEVELOPMENT. THE LABELS ON THE RELATIONS EXPLAIN THE NATURE OF THE RELATIONSHIP.

Continuous improvement. Most standards are frequently reevaluated and respond to trends in the market. Only FFP does not seem to have a clear procedure for evaluation of their endorsed standards. They all have some form of feedback and/or complaints system in place. However, Groenkeur and the MPS standards lack a proper expert forum to ensure up-to-date content of their standards.

8.2. LEGITIMACY

Figure 23, Figure 24, Figure 25 and Figure 26 present the scores of the eight selected standards for legitimacy. Table 14 provides the criteria the standards were assessed on and their indicators.

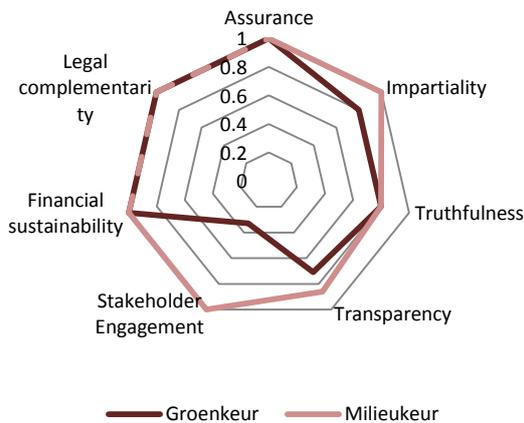


FIGURE 23 - SCORES OF GROENKEUR AND MILIEUKEUR FOR LEGITIMACY

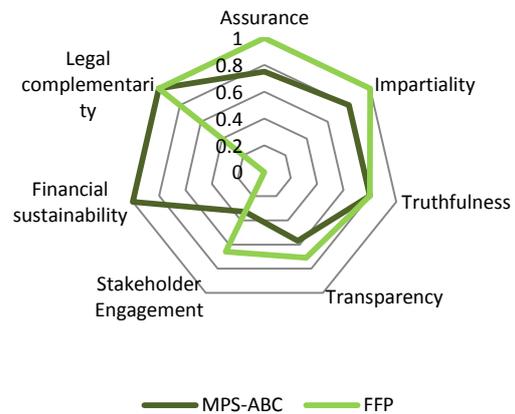


FIGURE 24 - SCORES OF MPS-ABC AND FFP FOR LEGITIMACY

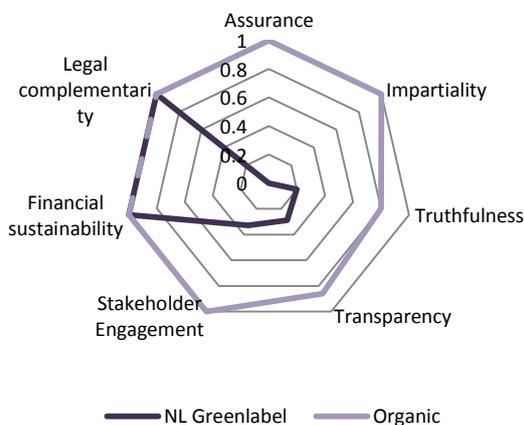


FIGURE 25 - SCORES OF NL GREENLABEL AND ORGANIC FOR LEGITIMACY

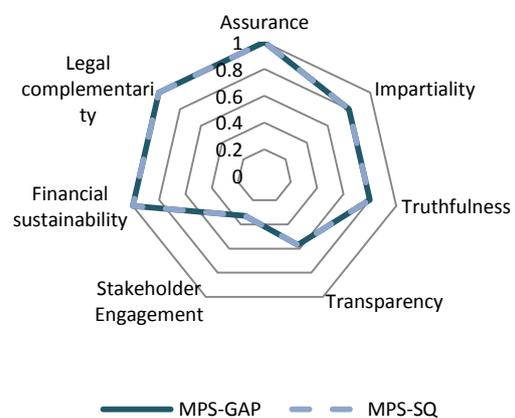


FIGURE 26 - SCORES OF MPS-GAP AND MPS-SQ FOR LEGITIMACY

TABLE 14 - CRITERIA FOR LEGITIMACY AND THEIR INDICATORS

CRITERION LEGITIMACY	INDICATORS
Trustworthy assurance	<ul style="list-style-type: none"> - Third-party auditing - Audits by professionals - All firms are audited every year - Full in-field audits
Impartiality	<ul style="list-style-type: none"> - Third-party auditing - Third-party accreditation - Balanced representation in committees - ISO/IEC 17065:2012 certified - Mechanisms to deal with conflict-of-interests
Truthfulness	<ul style="list-style-type: none"> - Third-party accreditation - ISO/IEC 17065:2012 certified - Data available on the performance of firm/audit summaries - Non-compliance mechanism - Traceability mechanism/ Supply chain certification
Transparency	<ul style="list-style-type: none"> - Regular updates of the activities of the organisation - Standard accessible online - Annual reports and financial reports of last 5 years online or available on request. - Database of certified organisations online - Transparent auditing process - KPIs formulated for the standard performance
Stakeholder engagement	<ul style="list-style-type: none"> - Stakeholders surveys - Stakeholders in standard setting committees. - Feedback mechanisms
Financial sustainability	<ul style="list-style-type: none"> - Self-supporting financial model: no subsidies, no donations
Compliance with legal regulations	<ul style="list-style-type: none"> - No history of legal issues in the Netherlands or country of production - Use or mentioning of legal regulations

Assurance. Except for NL Greenlabel, all standards have a professional assurance procedure in place that ensures impartiality and truthfulness. They employ third party auditing bodies for assurance. These organisations are professional auditing firms, accredited by the RvA and ISO/IEC 17065:2012 certified. They all have a strong non-compliance mechanism, where a non-conformity has to be corrected in a specific period of time, or the certificate is revoked. MPS-ABC is the only standard that does not perform a full field audit for each firm each year. Therefore, their score for assurance is lower. Another interesting fact about assurance at MPS is that all their audits are performed by MPS-ECAS. They are accredited by the RvA and legally registered as a separate firm, but it is questionable how independent a firm can be if it belongs to the same mother company.

Impartiality and truthfulness. For impartiality, stakeholder representation is important. Groenkeur and MPS have only included representatives of market parties on their committees and board, which results in a lower score for impartiality, although MPS appears to be looking for someone to represent the interests of the environment on the committee of experts. Groenkeur has indicated that they might include NGOs in the future in the technical committee of the arboriculture standard, if this proves to be necessary. Both standards also lack an annual report of 2014, costing them points for truthfulness. All standards have a form of traceability mechanism or supply chain certification. As they do not have data on the performance of the certified firms or summaries of the audits available, none of the standards get the maximum score for truthfulness.

Transparency. Milieukeur, Groenkeur and SKAL both have very informative website. Most of the information needed to assess the standards was available online. MPS has a confusing website and information cannot be found easily. Especially the costs for certification are not communicated clearly. Both MPS and FFP did not

provide their annual reports on request. None of the standards has formulated KPIs to assess their performance.

The score of NL Greenlabel for legitimacy is significantly different from the other standards. NL Greenlabel does not commission its assurance to a third party. The account manager of NL Greenlabel is the auditor; he does not have qualifications for this job, nor is he accredited or certified by the RvA or ISO. The initial audit will be done in the field as of June 2015, but assurance on later updates in the assessment scheme is based on trust. They do not have a committee of stakeholders that keeps track of the processes of NL Greenlabel. Their mechanism to prevent conflicts of interest is based on an organisation that cannot be found online and that appears to only exist for the purpose of NL Greenlabel. This is considered an unreliable form of assurance or impartiality, leading to a score of zero for NL Greenlabel for assurance and impartiality. For transparency and truthfulness NL Greenlabel do receive some points for traceability of the products, an online database of partners, and regular communication with their partners. They have no information available on the standard, nor year or financial reports or public information on the performance of their partners. Their auditing process is not transparent and they do not have a non-compliance mechanism. They still score less compared to the other standards. The interviews have confirmed that NL Greenlabel is not seen as a trustworthy label. They are criticised by several interviewees for lowering the criteria if partners do not get the desired label¹⁶, non-transparent assessment methods³, and focusing too much on making profit instead of ensuring sustainability⁴.

Stakeholder engagement. Milieukeur and Organic are the only two standards that get full marks for stakeholder engagement. NL Greenlabel has no stakeholder surveys or feedback mechanisms. The other standards have feedback mechanisms, but they do not include all stakeholders in the standard. The other standards include market parties, but lack engagement of NGOs and knowledge partners. As stated, MPS and Groenkeur are open for change on this part. NL Greenlabel has a specific issue with stakeholder engagement and governance. During the interview with the organisation, it was hinted at that Wissing and Hoekstra, as founding fathers, have quite a high influence on the content of the label. Although these individuals are experts in their field, they lack the expertise on the management of a standard system, leading to unnecessary weaknesses in the assurance and accreditation system. In practice, this is demonstrated by their reluctance to use accredited auditing bodies for assurance, motivated by the wish to keep everything 'light'.

Financial sustainability. All standards are fully financed by the participants of their standards. Milieukeur is the only organisation that receives subsidies, but this is marginal. This means the selected standards are self-supporting. FFP is the only standard of which the financial sustainability is unclear. They consider themselves as an independent standard, but they are financially dependent on MPS, this independence appears fragile. Therefore, they are given the lowest score. The other standards are deemed financially sustainable organisations

Compliance with legal regulations. The compliance of the standards with national legal regulations is high, as all standards go beyond national legal compliance. The standards elaborate upon this in their standard description. Milieukeur originates from the national government, and both Groenkeur and MPS explicitly refer their participants to Dutch and European legislation. However, it is an interesting question whether the national and standard regulations are properly being adhered to. However, this is not a question that has been elaborated upon in this thesis.

8.3. MANAGEMENT CRITERIA

Figure 27, Figure 28, Figure 29 and Figure 30 present the scores of the eight selected standards for the management criteria. Table 15 provides the criteria the standards were assessed on and their indicators.

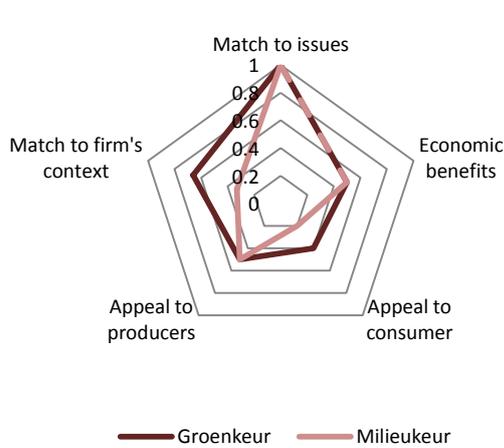


FIGURE 27- SCORES OF GROENKEUR AND MILIEUKEUR FOR THE MANAGEMENT CRITERIA

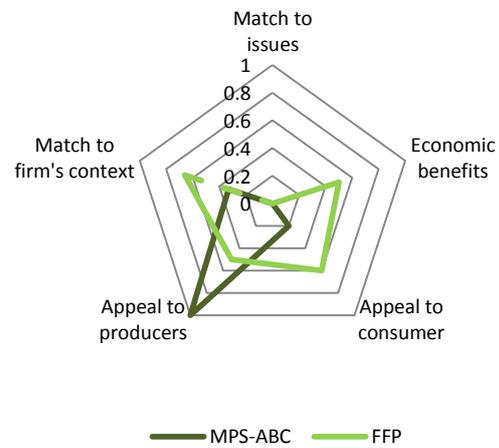


FIGURE 28 - SCORES OF MPS-ABC AND FFP FOR THE MANAGEMENT CRITERIA

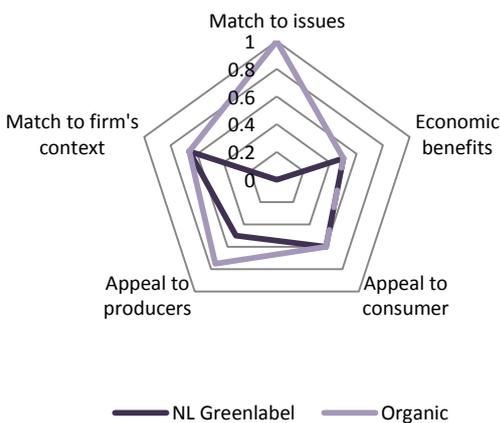


FIGURE 29 - SCORES OF NL GREENLABEL AND ORGANIC FOR THE MANAGEMENT CRITERIA

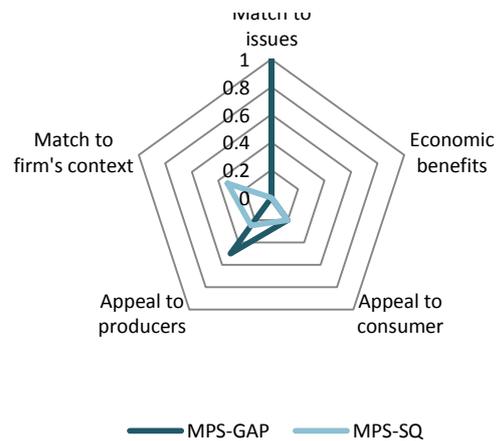


FIGURE 30 - SCORES OF MPS-GAP AND MPS-SQ FOR THE MANAGEMENT CRITERIA

TABLE 15 - MANAGEMENT CRITERIA AND THEIR INDICATORS

MANAGEMENT CRITERION	INDICATORS
Matching to existing sustainability issues	- Addresses the most important topic an appropriate manner.
Economic benefits	- Low costs - Increased sales price of product
Appealing to the consumer	- Known with firms - Attractive product - Eco-label - Media coverage - Active promotion - Third-party endorsement
Appeal to the producers	- Flexibility - Training programme - Known by producers
Match with the firm's context	- Active promotion - Practical feasibility - Guarantee

Matching to existing sustainability issues. Currently, the Dutch gardening sector is being confronted by Greenpeace for their use of chemical crop protection, as stated in chapter 7.3. All standards address this topic, except MPS-SQ. However, complaints have been heard in the sector of the lack of guarantees that MPS-ABC offers. As a process standard, it does not make any claims on absolute performance. Additionally, the certificate is issued for the entire firm, not per product. In the case of crop protection, this means that even if a firm uses a low amount of chemicals overall, certain product might contain a higher residue than is acceptable. Therefore, the MPS-ABC standard is not suited to ensure that a product meets society's expectations. As FFP uses MPS-ABC as its exemplary standard, it is also deemed a mismatch.

Economic benefit. All standards require some upfront investment from the firms. The only standard that has a positive effect on the sales price of a product is Organic, as most organic products sell for a price premium.

Appeal to the consumer. All labels can be used as a consumer label. The question is how many customers of garden centres actually know the labels. Organic is the only standard that is known, with certainty, by the general public and is being covered by the media. However, the higher price organic products tend to be sold for, has a negative effect on the sales numbers, as horticulture product sales in the Netherlands are still mainly price driven. Moreover, it was mentioned by several interviewees that organic plants tend to look slightly less attractive as they are smaller. The other standards do not affect the appearance of a product. Only FFP, Organic and NL Greenlabel act as a business-to-consumer label. The other standards are mainly marketed business-to-business. It is up to the retailer to decide whether to display the eco-label on the products in store.

Groenkeur, NL Greenlabel and Organic are both endorsed by the government. The Groenkeur firm standards are requested for 70% of the greening and landscaping projects by the Dutch government (Groenkeur, 2015f). So, the label has built a good reputation in the public sector. Organic and NL Greenlabel are also endorsed by several NGOs. MPS and Milieukeur do not seem to be endorsed by any party external to the sector.

Appeal to the producers. The retailers know all standards except for MPS-SQ and NL Greenlabel^{9,17}. Intratuin, a large group of franchise garden centres in the Netherlands, have chosen to make certification via Groenkeur, Milieukeur and MPS-Product Proof mandatory for their suppliers in their sustainability plan⁹. These standards might therefore have a stronger appeal to the growers than other standards. The growers are familiar with MPS-ABC, Groenkeur, Milieukeur and Organic^{4,7}. This familiarity with the standard reduces the fear of the unknown and potential worries about the consequences of certification.

Most standards offer some guidance services, except for Groenkeur, Milieukeur, and FFP. The only two standards that are considered flexible are MPS-ABC, FFP and NL Greenlabel. MPS-ABC and NL Greenlabel offer the opportunity to perform on a chosen level, whereas FFP allows the firms to select a combination of standards (from the endorsed standards) that suits them most.

Matching with firm's context. Match with the firm's context is a criterion that has to be assessed based on the sector trends. For the gardening sector this means that an ideal standard has to fit the following criteria: active promotion, provide a proper guarantee to customers, and practical feasibility. Currently, none of the standards fully fits these criteria. Not all standards actively promote their eco-label; only Groenkeur and the business-to-consumer standards do. Of the standards that do offer active promotion, only Groenkeur and Organic have a strong enough assurance policy to guarantee sustainability. Both of these standards are deemed too stringent to be feasible in practice.

9. MULTI-CRITERIA DECISION ANALYSIS - WOOD

This chapter contains the multi-criteria decision analysis (MCDA) of the standards for wooden products based on the criteria outlined in the theory. The analysis is displayed per core theme: effectiveness, legitimacy, and management criteria. Appendix I contains the scores table for the MCDA.

9.1. EFFECTIVENESS

Figure 31 present the scores of the two selected standards for effectiveness. Table 10 provides the criteria the standards were assessed on and their indicators.

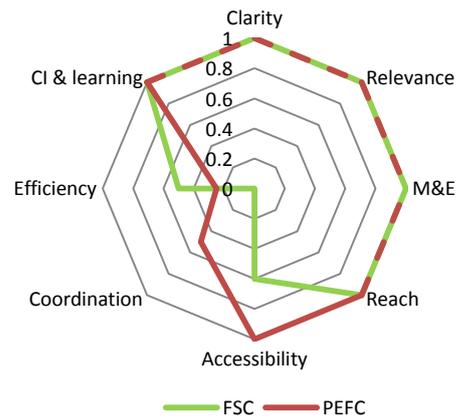


FIGURE 31 - SCORES OF PEFC AND FSC FOR EFFECTIVENESS

Clarity, relevance and M&E. Both standards get the maximum score for clarity, relevance and M&E. Each standard address more or less the same topics. This was confirmed by the extensive study on standard performance by Potts et al. (2014). This study shows that the only topics on which the standards differ are water use and waste, and that the exact difference is marginal. It is likely that the relevance of the PEFC standard is higher, because its approach allows the incorporation of the local conditions. On the other hand, the lack of global criteria can also prove to be a weakness, as is addressed in the next section.

Reach and accessibility. The standards are both internationally oriented and aim at forest management and its supply chain. PEFC and FSC both set high criteria for applicants. However, FSC certified firms have to adhere to the same FSC Principles, regardless of location. Therefore, the standard is considered more stringent. This is confirmed by Fischer et al. (2005) and Kalfagianni & Pattberg (2011). Kalfagianni & Pattberg state that the lower stringency is the main reason that PEFC has overtaken FSC as the most popular standard for forestry.

Coordination. PEFC slightly outperforms FSC on coordination. An important reason for PEFC's higher score on these criteria is that they do acknowledge FSC wood as equal to PEFC wood, whereas FSC does not acknowledge PEFC wood. This is a result of the fact that several of the PEFC endorsed standards do not live up to the standards of FSC, as was explained in the interview with FSC. PEFC strongly advocates for mutual recognition, however, this effort has been unsuccessful. Not even partial harmonisation has been accomplished (Vallejo & Hauselmann, 2005). An interesting observation is that although the two organisations do not coordinate their standards, they do collaborate (at least in the Netherlands) to promote the certification of wood and the use of sustainable wood^{13,14}.

Efficiency and continuous improvement & learning. Both standards are regularly revised, in collaboration with their members/stakeholders. The endorsement approach of PEFC gives countries the opportunity to adapt the standard to the local circumstances. On the other hand, the FSC standard is global: the standard is the same everywhere. This reduces the overhead that would otherwise be needed for the standard setting and

monitoring of the endorsed standards, as well as the number of accreditation bodies. Also, one set of criteria makes the standard more consistent. Therefore, FSC is more efficient than PEFC.

9.2. LEGITIMACY

Figure 32 present the scores of the two selected standards for effectiveness. Table 14 provides the criteria the standards were assessed on and their indicators.

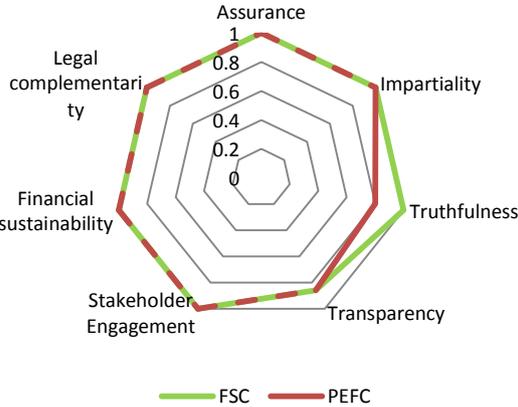


FIGURE 32 - SCORES OF PEFC AND FSC ORGANIC FOR LEGITIMACY

The two standards’ assurance and governance system are set up very similarly. Both standards use third-party certification and accreditation; they are both member organisation with the General Assembly of members being the highest decision making body. The only difference in legitimacy is that the assurance system of PEFC is slightly weaker than that of FSC. FSC provides summaries of the audits of certified firms, whereas PEFC does not. But in general both systems have a proper assurance system.

What cannot be expressed properly in the MCDA framework is the small difference in legitimacy between PEFC and FSC, as a result from their different methods. PEFC uses local accreditation boards for the accreditation of the local standards. Although this is in line with the localised endorsement approach of the standard, and the quality of the accreditation is assured by the IAF, the fragmented approach requires more actors (local standard setting organisations, national accreditation bodies), and thus more monitoring and individuals that can make mistakes. This is an often heard criticism of PEFC. The main focus of these critiques is the Malaysian Timber Certification System (MTCS), a PEFC endorsed forest management standard and the main supplier of PEFC certified tropical hardwood (MilieuCentraal, 2015).

9.3. MANAGEMENT CRITERIA

Figure 33 present the scores of the two selected standards for the management criteria. Table 15 provides the criteria the standards were assessed on and their indicators.

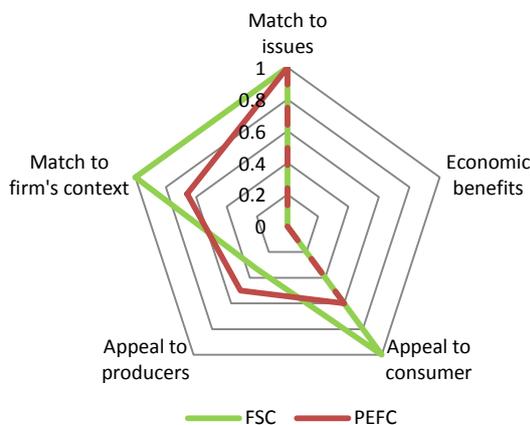


FIGURE 33 - SCORES OF PEFC AND FSC FOR THE MANAGEMENT CRITERIA

Matching to existing sustainability issues. The standards both aim for the same thing: sustainable management of the world's forests. However, due to weaknesses in some of the PEFC endorsed standards, not all PEFC certified forests are considered to be managed sustainably (Greenpeace, 2011; MilieuCentraal, 2015; Wereld Natuur Fonds, 2015). PEFC strongly contests this critique. They state that Greenpeace cannot assess FSC objectively, as they were involved in the foundation of the standard (PEFC, 2011). Moreover, PEFC criticises FSC's Controlled Wood standard and call upon FSC to focus on the goal instead of the competition with PEFC (PEFC, 2012). This leaves a difficult situation for the assessment. The endorsement system makes oversight on all the national standards difficult and although PEFC has guidelines for assurance, it is conceivable that in some countries the monitoring is weaker than in others. More importantly, PEFC does not provide any counter arguments to the accusations. Combined with the widespread critique, this has led to the conclusion that PEFC is a less suitable match than FSC.

Economic benefit. Although some price premiums have been reported, forest certification, in general, does not lead to economic benefits in the form of sales price increase (FSC U.S., 2011).

Appeal to the consumer. In the Netherlands, PEFC is not as well-known as FSC, according to the interviewee of PEFC¹⁴. Both FSC and PEFC certified products are not different in their attractiveness than regular products, as certified wood will not look different from regular wood. FSC is endorsed by important NGOs, whereas PEFC is not. This is largely due to the critiques stated above.

Appeal to the producers. Both PEFC and FSC are lobbying in the gardening sector to increase the use of forest management standards^{13,14}. Both have proven their concept around the world and are used by many firms. This benefits them by reducing reservations against the standards. Both standards have limited flexibility in the standard, but they do have elaborate guidance and training schemes.

Matching to firm's context. Both FSC and PEFC actively try to convince sectors to switch to sustainably sourced wood and wooden products. They are also equally feasible. However, retailers want the guarantee that the products they offer will not be criticised by NGOs in the future. As not all PEFC endorsed standards are living up to the same expectations, FSC is a stronger match with the firm's context. The retailers in the sector are looking for a solid guarantee, and currently, PEFC cannot provide this.

10. DISCUSSION OF THE RESULTS

This chapter relates the results to the theory and addresses the implications of the assessment. The first section addresses the scores of the standards per sector; the second section compares the two sectors and identifies where the two could learn from each other; the third section explains what this means for the sector.

10.1. THE STANDARDS PERFORMANCE

HORTICULTURE

Figure 34 presents the MCDA for all horticulture standards.

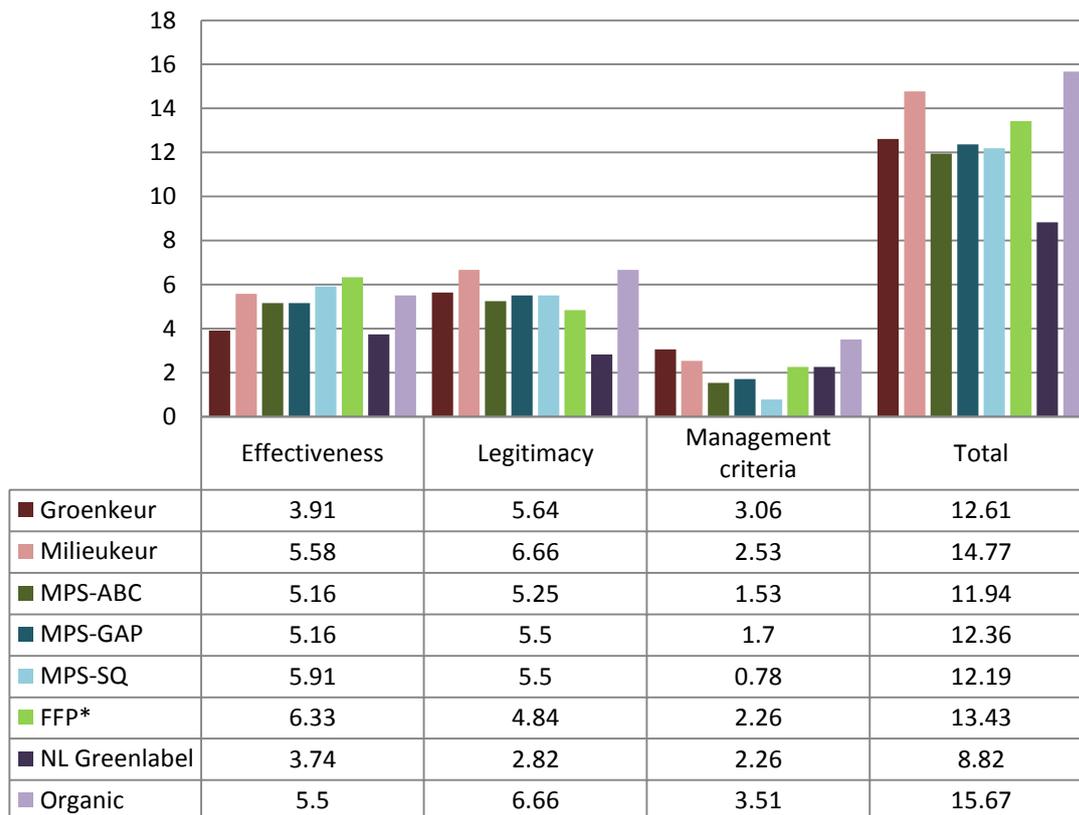


FIGURE 34 - MULTI-CRITERIA DECISION ANALYSIS FOR ALL HORTICULTURE STANDARDS. THE ROWS AND COLUMNS OF THE MCDA HAVE BEEN TRANSPOSED IN ORDER TO FACILITATE VISUALISATION. *THE SCORE OF FFP DOES NOT ACCOUNT FOR THE DIFFERENCES BETWEEN ENDORSED STANDARDS.

As can be seen in the figure, the Organic standard has the highest quality. It is the second most effective and the most legitimate standard. This is mostly due to its professional organisation and broad reach. However, from the interviews it can be concluded that organic ornamental plants is a niche market and that it is quite difficult to produce products of a high quality in some sub-sectors, such as cut flowers. Moreover, the standard only upholds the organic principles. It is deemed an unsuitable tool to lower the overall sustainability impact of the sector, as it does not address the full impact of the sector. This incongruence between the objective results and the subjective sector view can be explained that fact that the MCDA is currently not weighted. As a result, all criteria have an equal effect on the total performance. The interviews have demonstrated that several of the indicators are of such vital importance that they should be considered preconditions rather than criteria. This concerns mostly criteria crucial to the sales of the product, such as appearance or compliance with buyer demands. A standard can be of high quality, but if it makes a product unsellable, it is pointless to adopt the standard. This can be solved by giving these criteria more weight, based on an extensive survey.

The lowest performing standard is NL Greenlabel. Although NL Greenlabel addresses relevant topics and uses a renowned method to assess the environmental impact of a product, the methods used to certify and assure compliance are untrustworthy. NL Greenlabel justifies this by aiming at frontrunners that are already producing sustainable products. As these firms barely have to adapt their practices to reach A+ level, they are expected to provide trustworthy information. The question is whether this approach is feasible on the long-term, when less sustainable firms want to apply for the NL Greenlabel. Another issue with NL Greenlabel is the lack of transparency and clear communication. Barely any information on the standard can be found online and the methods of assessments are vague. This makes the standard confusing to use, as the producers do not know what is expected of them. The standard is also unsuitable as a guarantee for consumers, as it is unclear what the sustainability claims are based on. It would be interesting to see how the standard would develop if the assurance methods would be improved.

The total scores of the other standards are not that far apart. Milieukeur scores second best of the environmental standards. Together with Organic, it is the only standard that is fully transparent and provides proper documentation of their work. Although they could add clear key performance indicators to assess their standard, their annual reports are publicly accessible, they provide clear information on their website, and they have a solid policy for supply chain assurance. The other standards lacked these indicators, which cost them points on several criteria. Thus, Milieukeur is the standard with the highest quality. Ideally, the entire sector should adopt the standard to have a maximum impact. However, they suffer from a similar problem as the Organic standard in that it does not meet the precondition of feasibility. In practice, the standard attracts mostly frontrunning firms, acting as a marketing tool rather than a tool for behavioural change. A similar situation was found for Groenkeur; although it has a more limited reach, higher contribution costs, the standard has similarly stringent criteria. As stated in the theory, Kalfagianni (2010) confirms this trade-off between stringency and accessibility; some firms might consider certain criteria easy to comply with, whereas others may struggle to comply. This makes accessibility criteria like stringency subjective, as they are highly dependent on the case-by-case situation; this complicates the assessment. The interviews provided an outcome by giving an insight in what the sector considers as (in)accessible. Several of the interviews indicated that, due to their stringency, Milieukeur, Groenkeur, Organic and MPS-GAP are serving a niche market and are generating little change in the market.

The only standard that is deemed accessible is MPS-ABC, due to its process-based approach. However, the standard scores below average for both effectiveness and legitimacy. The main explanation for the low performance is the fact that MPS-ABC cannot act as a proper guarantee of best practice. This has three reasons. The first weakness of the standard is its relative nature. MPS-ABC bases the scores of their levels on a benchmark that represents the average sector-wide performance. In other words, the certified firms have a lower impact than their competitors, but do not perform at best practice level. A second fault in the system is a gap between MPS' vision and their participants' expectations. The interviews demonstrate that MPS perceives MPS-ABC purely as a registration scheme, aimed at transparency of resource use of an entire firm. This is different from what MPS-ABC certified firms expect. They use the standard as a product guarantee of best practice, similar to Groenkeur or Milieukeur. Lastly, the assurance of the standard is weak. Certified firms are only monitored by a desk audits and do not have to pass a full field audit each year. Several interviewees pointed out the ease of tampering with the system to fake a better performance. These three weaknesses cause the MPS-A label to make claims that cannot be substantiated. This makes it unlikely that the standard, in its current form, will bring about any significant impact reductions, in sustainability.

In general, all MPS standards lack proper representation of experts, NGOs and other stakeholders. This reduces the effectiveness, as there are no authorities that can assure the standard tackles the relevant impacts in a suitable manner. It also reduces the legitimacy of the standards as not all relevant parties are permanently engaged in the management of the standard. This is an issue that more standards cope with. Only Milieukeur and Organic have all stakeholders permanently represented in either their committee of experts or an

independent advisory body. MPS appears to be looking for representatives for their committee of experts, so there is an opportunity for change. An issue that is worth mentioning is the impartiality of MPS-ECAS. The organisation is a renowned auditing organisation in the Netherlands and is accredited by the RvA. In their organisation structure, MPS-ECAS is entirely separate from MPS. However, the fact that MPS and MPS-ECAS are part of the same group does raise questions concerning impartiality. However, no proof of conflicts of interest was found.

The quality of MPS-SQ and MPS-GAP is also hampered by the weaknesses in the MPS group. MPS-SQ performs quite well; it scores third in both effectiveness and legitimacy. However, it only covers the social indicators of sustainability. Therefore, the standard is a good addition to an environmental standard of high quality, but should not be adopted solitarily. MPS-GAP is the standard that MPS positions as competitor to Groenkeur and Milieukeur. It scores slightly better than MPS-ABC, due to its link to the GLOBALG.A.P. standard. By benchmarking MPS-GAP on the renowned GLOBALG.A.P., the relevance of the criteria increases as well as the cooperation score. Moreover, the assurance procedure of the MPS-GAP standard is more appropriate than that of MPS-ABC. However, standard does not lack several criteria and does not score as well as several of its competitors.

FFP performs well on all criteria. However, the assessment of FFP is based on the benchmarking document for the endorsed standards. To properly assess the quality of the FFP standard, the quality of the used endorsed standards should also be incorporated in the assessment. As FFP currently uses MPS-ABC as their main environmental standard, the score should be adjusted downwards. To become a suitable standard for the sector, FFP is best combined with an environmental standard with a higher overall quality than MPS-ABC.

In general, a gap can be identified in the market of private sustainability standards for horticulture products: currently, there is no performance standard available that combines medium stringency with high legitimacy. This leaves the majority of the producers in the sector with either the option of applying a standard with an ambition level that is too high, or accepting a standard that cannot provide the guarantee the firms need. The future Product Proof standard of MPS may potentially fill this gap, as its level of stringency could prove more feasible than Milieukeur, and its effectiveness is predicted to be higher than MPS-ABC. It is also expected to be better suited to provide guarantees to firms regarding the compliance to crop protection demands of their crops. However, MPS should improve certain aspects in their organisation, such as lack of proper stakeholder representation, in order to ensure the quality of the standard.

WOODEN PRODUCTS

Figure 35 presents the MCDA for all wooden product standards. The standards in the wood sector perform significantly better than the horticulture standards. Both PEFC and FSC perform above average for both effectiveness and legitimacy. PEFC scores slightly higher for effectiveness, as it scores better for accessibility and coordination. On legitimacy the standards score roughly the same. FSC gets almost a perfect score, whereas PEFC misses two indicators. However, PEFC scores significantly lower on the management criteria. This is the result of their endorsement of several standards that are deemed to be of insufficient quality. Therefore, FSC is deemed to be of slightly higher quality than PEFC.

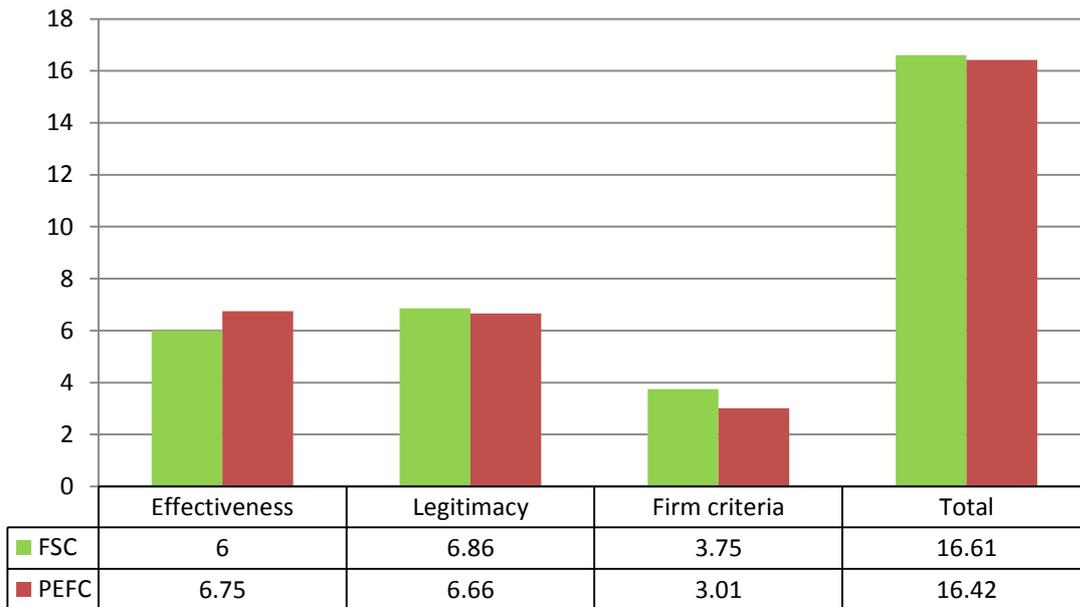


FIGURE 35 - MULTI-CRITERIA DECISION ANALYSIS FOR ALL WOODEN PRODUCTS STANDARDS. THE ROWS AND COLUMNS OF THE MCDA HAVE BEEN TRANSPOSED IN ORDER TO FACILITATE VISUALISATION.

10.2. A COMPARISON BETWEEN SECTORS

When comparing the horticulture and the wooden products standards, the importance of having few global, comprehensive standards becomes apparent. The wooden products sector is internationally dominated by two standards, FSC and PEFC, which only differ in the type of standard (performance standard versus meta-standard). The main objectives and principles they uphold are very similar. Both standards are of high quality, higher than any of the standards in use in the horticulture sector. A clear difference between the two standards can only be seen in the management criteria. Although the difference in quality can be partially explained by the fact that the forestry sector has more experience with working with standard, the standards in the sector could have been as experienced as both Milieukeur and MPS exist for about as long as FSC and PEFC (Figure 36).

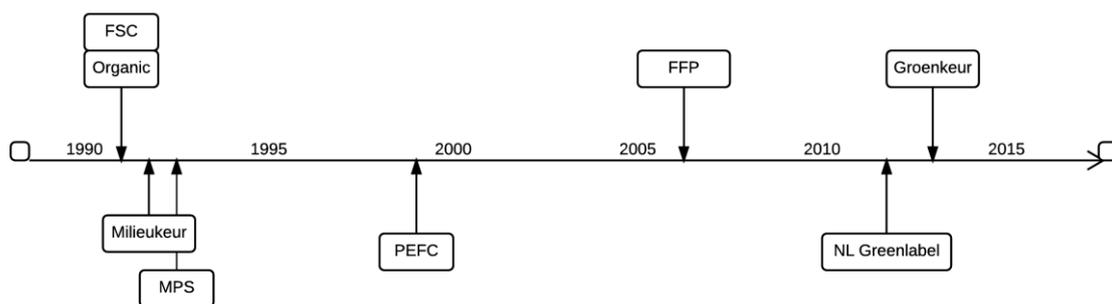


FIGURE 36 - A TIMELINE OF YEARS THE STANDARDS WERE FOUNDED. GROENKEUR AS AN ORGANISATION WAS FOUNDED EARLIER (2003); HOWEVER THE ARBORICULTURE STANDARD WAS FORMULATED IN 2013. THE DATES OF THE OTHER HORTICULTURE STANDARDS MARK THE FOUNDATION OF THE STANDARD SETTING ORGANISATION, AS THE ACTUAL DATE OF INTRODUCTION OF THE STANDARDS IS UNKNOWN.

What is important to realise is that the horticulture sector is more diverse, more vulnerable products, and the impacts are less easy to tackle than with forestry. Therefore, it is more difficult to create a standard of high quality in this sector. However, there are several other reasons for this difference in quality. The first reason is the involvement of stakeholders. FSC and PEFC are both membership organisations (including NGOs, knowledge institutes, labour unions etc.) and involve their members at all stages throughout the standard

setting, evaluating and revising processes. This is lacking at most horticulture standards. Transparency is a second reason for the lower performance of the horticulture sector. PEFC and FSC have very clear and open websites. The horticulture standards do meet the criteria of the RvA for transparency, but miss certain indicators (public annual reports, reporting on certified firms) that could improve their score. The most important opportunity the horticulture standards have missed out on is continuous learning and improvement. Although FSC and PEFC are competitors, they work together to promote the use of sustainable wood in supply chains, as well as the use of a forestry standard in forest management. In the horticulture sector all standards are competitors and seem to operate in a vacuum. They have no history of cooperating neither with all applicable stakeholders nor with each other. This lack of cooperation has created a division in the field of standards, which, as stated in the theory, is confusing and inefficient. It has also caused the standards to miss out on the opportunity to study other standards, to compare and compliment the other standards or improve their own. This leaves a large variety of standards that all have similar objectives and use varieties of the same method that could easily be combined and reduced to one single standard. A striking example is the 'difference' between the Groenkeur and Milieukeur standard. The Groenkeur standard is considered a copy of the Milieukeur standard and was only founded because firms were requesting more active promotion of the label to increase the financial benefit from being certified. Though this is a legitimate request, the solution to the problem is inefficient. The firms could have reached out to FFP, Milieukeur could have given in to the requests of their participants, or the firms could have organised promotion itself without setting up a new standard.

The comparison has demonstrated how important communication and coordination can be, not only between the individual standards, but also between the standards and their users and their customers. By properly identifying what the function of a standard should be, there is little need for separate groups to set up their own standard to be able to use their preferred method or pursue their own objectives. This requires some flexibility of all partners and a strong change agent. Tuinbranche NL could fill this role for the Dutch gardening sector.

11. DISCUSSION OF METHODS

This chapter encompasses the discussion on the methods used, compares the results to the scientific literature, and provides suggestions for future research.

11.1. METHODS

Replicability of results is often considered as a measure of the quality of scientific methods. However, the results obtained here are based on a descriptive study, identifying current practices in the Dutch gardening sector. These practices are subject to change over time, which affects the outcome of this research if it is repeated at another point in time. Another limitation to the replicability of the results is the subjectivity of some of the assessments. As stated in the previous chapter, several indicators are difficult to assess objectively as they are inherently subjective. Therefore, a repeated study at a different point of time might come to different scores for the MCDA. However, the value of this study is more in the identification of strengths and weaknesses, and the recommendations that follow from the conclusions and less in the replicability of its results.

This research would have benefited from a survey conducted among all members of Tuinbranche NL. Such a survey was conducted, one for retailers and one for growers. However, the number of completed surveys was too low (<5%) to be included in this thesis. This on its own is an interesting result, as it shows that the sector feels little engagement to the topics of sustainability and certification. One respondent stressed the latter, by stating that she would not fill out the survey as she was opposed to certification in the sector. The lack of a survey has limited the external validity of the study. A survey would have better represented the experiences, positive or negative, in the sector, as well as given insight in the preferences of the sector regarding characteristics of the standards. As a result the indicators and criteria could not be weighted. Concerning the research methods, a survey would have complemented the interviews. This can be an interesting option for future research by Tuinbranche NL.

11.2. COMPARISON WITH LITERATURE

This thesis demonstrates that proliferation of standards is a problem in the Dutch gardening sector. Several other studies have found similar problems in the coffee sector (Ponte, 2004; Reinecke et al., 2012). Reinecke et al. (2012) have identified a paradox between how standards compete for market share, while also collaborating to stimulate sustainable practices in the sector. This study confirms this paradox, as it shows how FSC and PEFC are continuously balancing between competition and cooperation. However, the horticulture sector does not show this pattern of competition and cooperation. The standards appear to operate without considering the actions of their competitors. This could be explained by the fact that it is a small sector that largely operates in the Netherlands and a few other developed countries, where it is easier for firms to adopt more than one standard. Moreover, the standards offer enough differentiation from each other to each create their own market niche, further reducing competition among the standards. Without the forces of competition and collaboration in the sector, harmonisation will not likely occur naturally, but will have to be induced. This could be a task for Tuinbranche NL.

Another effect of outsiders on the quality of a standard is demonstrated in the assessment of PEFC and FSC. Endorsement by other parties plays a vital role in the difference in score between FSC and PEFC. This effect was confirmed by other studies. Similar to this thesis, Vallejo & Hauselmann (2005) have found that FSC has the endorsement of the majority of the larger NGOs. They state that, regardless of whether this endorsement is well-grounded, the support provides FSC with a stronger legitimacy than PEFC. The question whether the support is well-grounded is also outside the scope of this study. However, the fact that NGO endorsement can be influential on legitimacy is an interesting lesson for Tuinbranche NL in their attempt at harmonising the standards in the horticulture sector.

The former conclusion is strongly related to this study's outcomes concerning stakeholder participation. This thesis indicates that in the horticulture sector NGOs and experts are not as well represented in the standard setting organisation as in the wooden products sector. This is most likely influenced by the chosen governance structure. FSC and PEFC are both membership organisations, whereas the standards in the horticulture sector are more top-down controlled by appointed boards and committees. Although a membership structure facilitates stakeholder influence, the horticulture sector could engage NGOs, experts and the government more active, without changing their governance structure. This is confirmed by Ponte & Cheyns (2013) who demonstrate that a difference in governance structure does not necessarily reduce stakeholder participation. They emphasise that all relevant disciplines should be represented, not only the seemingly obvious. This implies the inclusion of experts from natural science (for knowledge about the environment), social science (for knowledge on local communities, labour conditions and behaviour), certification procedures and even more. This importance of stakeholder participation for quality of standards is also confirmed by the study von Geibler (2013), who demonstrates that stakeholder representation in one of the main flaws of the Roundtable of Sustainable Palm Oil (RSPO). Like Ponte & Cheyns, he emphasises that stakeholders, more specifically NGOs, are not a homogenous group of actors, and thus, creating a balanced representation of all stakeholders requires effort and planning. Ponte (2004) adds that public entities may also have an important role in achieving legitimacy, by recognising the content of a standard and assurance of claims made by its users.

11.1. FURTHER WORK

This thesis has focused on assessing standards and formulates recommendations to Tuinbranche NL based on this assessment. This scope has excluded several topics that require further work.

Ponte (2004), von Geibler (2013), and Ponte & Cheyns (2013) all propose improvements for the standards setting organisations; however, the standards they focus on (UTZ Kapeh, Fair Trade, RSPO, MSC) have significantly more manpower and expertise to realise the necessary change on their own than the standards in the horticulture sector. This is where Tuinbranche NL can play an important role. This study has focused on the knowledge on the role a sector organisation can play in certification in a sector. This role could be further explored looking at how effective these organisations are at facilitating change for sustainability.

Similarly to this thesis, Kalfagianni & Pattberg (2011) have performed a study on the effectiveness of private sustainability standards and initiatives. Their focus lies more with achieving reductions of sustainability impact from a policy perspective than sustainable supply chain management. The authors distinguish between first-order and second-order effects. The first-order effects are the effects that a standard has on the supply chain it is aimed at; these have been incorporated in the framework in chapter 2.3. According to Kalfagianni and Pattberg, 'the second-order effects are broader, and include regulatory and socio-economic effects that extend beyond the organisation's immediate audience. Examples of such effects include the restructuring of global supply chains, the blurring of boundaries between public and private rules as well as the influence on fundamental norms and ideas, such as neoliberalism and eco-efficiency discourses'. Although these effects are interesting to determine the impact of a standard on sustainability, it is too demanding to expect all standards to cause effects on such a large scale. Therefore, they are not included in the assessment framework.

To truly run a sustainable business certification must be a part of a larger holistic strategy. As stated in chapter 7.7, this is currently lacking on the production side of the sector as the focus is too much on the crop protection methods. Retailers do demonstrate a broader focus, demanding forestry certification for their wooden products. Even more, this thesis poses that private standards cannot cover a firm's or sector's entire CS policy. As stated in the theory, private sustainability standards are a suitable tool for SSCM, but they do have flaws. Although this thesis touches upon this topic, it might be interesting for future research to address these flaws specifically for the Dutch gardening sector and assess the real sustainability impact of the standards.

12. CONCLUSION

In the introduction the following research question was posed:

Which factors determine the quality of the private standards applicable to the Dutch gardening sector?

There are three factors that determine the quality of a standard in this sector. The first is the inclusion of stakeholders. This is the main differentiating criterion between the best performing standards (Milieukeur, FFP and Organic) and the rest. A large difference can also be seen between the standards in the horticulture sector and those used for wooden products. As both FSC and PEFC are membership organisations and are open to all interested parties, their stakeholders can exert a strong influence on the standards. This means they are better adapted to local conditions, as local communities and NGOs are given the chance to regularly provide feedback. They also address the real sustainability impact more accurately, by including experts in the standard setting process. In this respect, the horticulture standard can learn from the wooden products standards.

The second factor that is proven to strongly influence the quality of the horticulture standards is transparency. The difference in scores for legitimacy can largely be explained by the lack of annual reports and incomplete information on the standards' websites. Again, the forestry standards are more advanced in this aspect.

The third factor are the management criteria. Based on these criteria a standard can really distinguish itself from its competitors. The most important one for the horticulture sector is the practical feasibility. Although it is difficult to measure objectively, it proves to be an important predictor of success, as can be seen from the cases of Organic and Milieukeur. Both standards are assessed to be of high quality; however, the interviews with supply chain actors have indicated that the standards appear to lack popularity due to their stringency. The existence of Groenkeur is also motivated by the firm's context (specifically the wish for active promotion). Moreover, the difference in quality between PEFC and FSC is largely a result of management criteria. This demonstrates it is important to examine standards from a SSCM point of view.

A noteworthy minor conclusion is that trustworthy assurance and accreditation is vital to the quality of a private sustainability standard. NL Greenlabel proves to be the perfect bad example. The standard is considered an outlier at the negative end of the spectrum, largely poor due to methods of certification. Although the standard has good intentions, the weak assurance system encourages fraud. It is discouraged to use this standard to communicate sustainability impact.

When all factors are combined, it can be concluded that, currently, the gardening sector is lacking a proper horticulture standard that can offer high quality sustainability impact reduction, strong transparency assurance that meets the demands of the growers. Although there are initiatives (Product Proof) that could be promising, the standard setting organisations in the sector must make several changes to be of high quality. Tuinbranche NL has a challenge reforming the standard field, encouraging uniform certification and formulating a holistic sustainability plan for the future of the sector.

13. RECOMMENDATIONS

The conclusions of this thesis have led to the formulation of four recommendations to Tuinbranche NL: organisation of the standard field, choosing a suitable standard, guiding of the implementation of the standard(s), and the holistic sustainability strategy.

13.1. ORGANISATION OF THE STANDARD FIELD

Firstly, it is recommended that the sector reorganises the standards in the field. As concluded, the sector has too many standards that provide little additional value to the others. It would be better to reduce the overlap by merging standards or setting up an entirely new system, in which all the different components of the separate standards are incorporated.

An important feature of the standard is a tiered level of performance, to challenge frontrunners while making it possible for laggards to join without having to turn its entire cultivation process upside down. This was also stressed by the interviews in the sector. The chairman of ZLTO expressed the interest in a flexible system that allows the grower to decide which CSR topic he will improve on. This way a firm can distinguish itself based on CSR strategy, address the topics that are relevant to the firm, and operate within its practical boundaries (finances, man-power etc.). It also allows firms that have reached the highest feasible performance on certain themes, e.g. crop protection, to meet the necessary improvements on another theme, e.g. labour conditions. The suggested system could be designed as a scoring system, similarly to NL Greenlabel or MPS-ABC, in which the best performing firms get five stars, and laggards one or two, so the performance becomes a competitive advantage tool. He is of the opinion that growers will be more motivated to change with such a system in place. Several actors expressed similar wishes for a future standard system.

The recommendation to Tuinbranche NL would be to use a performance standard as a basis. This standard then ensures the compliance with legal regulations plus additional criteria that are considered the bare minimum for sustainable practices. Additionally, a process standard would be added, of a similar nature to MPS-ABC and NL Greenlabel, in which firms can choose their own level of improvements. This tiered system should be highly ambitious; the highest level should be of really low environmental and social impact. The standard setting and reevaluation processes of both standards should include stakeholders such as experts. It is very important that Tuinbranche NL collaborates with NGOs to provide legitimacy. The standard setting method should be based on a proven concept such as Environmental Impact Assessment or Life-Cycle Assessment; this way the sector can properly identify the impact it has on the environment and society and how they can reduce that impact. Both standards need to be complemented with a stronger assurance system, with field audits and sample tests. The standards should be actively promoted to customers and consumers. It is recommended that the standard includes a strong traceability system, such as with FFP. This standard currently provides a code that enables the consumer to trace the product back to the producer. Further, the standard should meet all criteria identified in the framework, as developed in this thesis.

13.2. CHOOSING A SUITABLE STANDARD

The recommendation above is a very time and resource intensive process. Ponte (2004) stresses the challenge posed by such an endeavour, as 'even within well-established sub-categories of the sustainability family, such as organics, it has been extremely difficult and laborious to come up with universally accepted standards' (2004, p. 43). Moreover, it will put many of the existing standards out of business. This way a lot of valuable knowledge and experience might be lost. Therefore, a less fundamental route is proposed as an alternative, using the existing standards. Milieukeur is the most suitable standard for frontrunners, as it has the highest quality. The standard could be accompanied by a social standard, such as MPS-SQ or another FFP approved standard. This way the stringency of Milieukeur is combined with active promotion by FFP. It is recommended that Tuinbranche NL promotes the use of this standard combination amongst those firms that wish to demonstrate excellence on sustainability performance. In case firms want to get Milieukeur certified for

products that are not covered by the existing standard, Tuinbranche NL could organise an initiative of frontrunners that together would be able to finance the development of a new Milieukeur standard. For a sector in transition towards more sustainability such as the Dutch gardening sector, limiting the adoption of very stringent standards to frontrunners might be the best approach, at least on the short term.

For the less advanced firms, the current options are limited. MPS-ABC is as a process standard is an interesting system, but in its current form it is not suited to ensure sustainable practices throughout a supply chain. However, the standard is already widely used in the sector, nationally and internationally, and the organisation has a lot of experience with certification. It is therefore recommended to work together with MPS to improve the quality of both the standard and the organisation. Firstly, they do not represent all the stakeholders properly. To this end the first recommendation for Tuinbranche NL is to persuade MPS to include more stakeholders from outside of the sector in its processes. Extremely important is to install experts on environmental impact in the standard setting committee, to prevent the standard from being debunked by NGOs, as happened in the past by Greenpeace for the MPS-ABC standard. The MPS-ABC standard could still be used as a process standard to stimulate firms to improve. However, it is discouraged to use this standard as a guarantee of sustainable practices throughout the sector. A better option would be the new Product Proof standard. Tuinbranche NL is advised to closely follow the Product Proof standard and exert influence when needed. Tuinbranche NL should make sure the standard addresses more subjects than those that are currently in the spotlight (e.g. crop protection). Otherwise, the standard will prove insufficient the moment the attention moves away from crop protection to other sustainability issues, although the involvement of experts in the standard setting could ensure this.

For the wooden products, retailers in the gardening sector are recommended to enforce FSC as it outperformed PEFC on the management criteria. Several retailers already enforce this standard in their supply chain. It could prove to be useful to verify if the use of FSC in the retailers' supply chains is achieving real improvements worldwide. Also, the interview with FSC showed that the gardening sector is still quite reluctant to get on board with massive certification efforts. Tuinbranche NL could act as a coordinator in trying to convince retailers to commit to sustainability targets for wooden products certification.

13.3. GUIDING OF THE IMPLEMENTATION OF THE STANDARD(S)

Besides coordinating the choice of standards throughout the sector, Tuinbranche NL can also play a guiding role in the implementation process. For retailers, Tuinbranche NL can help identify the key improvements that retailers request from their suppliers; they can help align these requests sector-wide to prevent an endless list of criteria growers must meet in the future. Tuinbranche NL can also connect actors, help create partnership and raise funding for the formulation of the standard or the improvements in the existing standard(s), and their implementation. To increase the total impact reduction of the sector Tuinbranche NL may want to collaborate with sector organisations and retailers abroad. The Dutch horticulture sector is experiencing pressure from retailers in Germany and the U.S. to cease the use of certain chemicals. By collaborating with these parties Tuinbranche NL can ensure their demands are covered by the used standards.

For growers, Tuinbranche NL can facilitate training of the growers. For those firms that struggle to comply with the set rules, the standard system should provide help to build capacity for achieving better outcomes. Also, they can collect feedback from users to improve the standard(s). In other words, they can act as an intermediary agent and information hub, connecting the right people and spreading information to whoever needs it. Van Hoeven (2009) provides a good outline of the steps a firm needs to take in order to achieve a sustainable sourcing policy (Table 16). Tuinbranche NL could use this as a guideline while aiding its members.

TABLE 16 - GUIDELINE FOR SUSTAINABLE SOURCING FOR FIRMS BY VAN HOEVEN.

<ol style="list-style-type: none">1. Integrate sustainability in the overall strategy of your company:<ol style="list-style-type: none">a. Analyse the ecological impact of your processes, list the opportunities to reduce the ecological footprint and map these opportunities in terms of benefits for the company, the society and the environment.b. Select the sustainability opportunities which have the best shared value.c. Translate those into plans, targets, KPIs and (optional) incentive schemes.2. Integrate sustainability in your sourcing strategy:<ol style="list-style-type: none">a. Define a sourcing strategy for each commodity and spend category and include a focus on the use of certified raw materials.b. Calculate based on total costs of ownership and optimise your supply chain.c. Request your suppliers to read and accept your code of conduct and encourage your suppliers to become compliant.d. Place your demand firmly in the marketplace and do not compromise.e. Measure your results using financial and ecological indicators.3. Share volumes, knowledge, resources and practises:<ol style="list-style-type: none">a. If buying volumes are small, get more organised.b. If buying volumes are considerable, consider becoming the leader in stewardship of the relevant sustainable commodity.c. Work together with NGOs, government, firms, customers and suppliers to find the innovations that will lead to sustainable profitd. Communicate your progress.4. Choose a change management approach:<ol style="list-style-type: none">a. Sustainable sourcing will require some fundamental changes. Be prepared to take time and get a long-term commitment from the board.b. Involve the internal organisation whenever possible in the successes and regularly update the internal organisation on progress.
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Tuinbranche NL can contribute to the visibility of the standard(s) by setting up a campaign aimed at consumers on the benefits of certified products over uncertified products, in collaboration with the retailers and the standard setting organisations. It is important that the campaign focuses on simplifying the complex concept of sustainable supply chain management in a manner that it is clear to consumers what SSCM and certification means for their products. The consumer must be convinced that certification is beneficial and does not cost them extra money or effort.

13.4. THE HOLISTIC SUSTAINABILITY STRATEGY

As stated in the theory, private standards have both benefits and flaws. A private standard should therefore only be a part of a holistic sustainability strategy. The last recommendation to Tuinbranche NL is to look beyond standard, if they want to ensure real sustainability in the sector. Sustainability should be integrated into the business, rather than considering it charity on the side. This requires leadership from the top to overcome the focus on short term interests, and internal resistance. The sector should make the effort of mapping its supply chain, analysing its sustainability impact, and how you can reduce it. Then the firms in the sector should formulate a sustainability strategy plan, with the outlines of future practices and real deadlines. This requires communication between all actors in the supply chain; one firm on its own cannot change an entire sector Tuinbranche NL could play a vital role in facilitating that communication. They can help set up joint initiatives, like the Floriculture Sustainability Initiative. They can gather, bundle and share knowledge of experts. They could transcend competition and bring together actors that together could achieve their shared goals.

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15. REFERENCE LIST – DOCUMENTS AND PAPERS

- A.T. Kearney. (2010). Sustainability: A Product Life-Cycle Approach - More Featured Content Detail. Retrieved February 14, 2015, from http://www.southeast-asia.atkearney.com/about-us/social-impact/more-featured-content-detail/-/asset_publisher/EVxmHENiBa8V/content/sustainability-a-product-life-cycle-approach/10192
- Accreditation Services International. (2015). ASI. Retrieved June 3, 2015, from <http://www.accreditation-services.com/about/asi>
- Agrawal, N., Smith, S. S., & Tsay, A. A. (2002). Multi-vendor sourcing in a retail supply chain. *Production and Operations Management*, 11(2), 157–182.
- AgriHolland. (2015). AgriHolland : dossier Keurmerken, certificaten en kwaliteitssystemen in landbouw en voeding zoals IKB Varkens, SKAL, Milieukeur, Demeter, scharrelvlees, EKO, MPS, PQK, Qualitree, CBT, Halal. Retrieved February 17, 2015, from <http://www.agriholland.nl/dossiers/keurmerken/home.html>
- Almeida, N. M., Sousa, V., Dias, L. A., & Branco, F. (2015). Engineering risk management in performance-based building environments. *Journal of Civil Engineering and Management*, 21(2), 218–230.
- Bayer CropScience. (2010). Bayer CropScience - NL - Certificering Tuinbouw. Retrieved February 17, 2015, from http://www.bayercropscience.nl/bayer/cropscience/bcs_nl.nsf/id/NL_Certificering_Tuinbouw
- Bionext. (2015a). Bionext | Biologisch, lekker natuurlijk! Retrieved July 7, 2015, from <http://www.bionext.nl/>
- Bionext. (2015b). Eerste Hulp Bij Omschakelen | Bionext. Retrieved July 7, 2015, from <http://www.bionext.nl/node/5456>
- Braga, T. M., Ionescu-Somers, A., & Seifert, R. W. (2010). *Unilever sustainable tea: Leapfrogging to mainstream*.
- Braga, T. M., Ionescu-somers, A., & Seifert, R. W. (2011). *Unilever sustainable tea Part II : Reaching out to smallholders in Kenya and Argentina*.
- Callon, M. (1987). Society in the Making: The study of Technology as a Tool for Sociological Analysis. In *The Social Construction of Technological Systems New Directions in the Sociology and History of Technology* (pp. 83–103).
- CBS Statline. (2014). Bedrijven; bedrijfstak/branche (SBI 2008), grootte, rechtsvorm, 1 januari.
- Crews, D. E. (2010). Strategies for Implementing Sustainability: Five Leadership Challenges. *S.A.M. Advanced Management Journal*, 75, 2,15–21.
- Dahl, R. (2010). Green washing: Do you know what you're buying. *Environmental Health Perspectives*, 118(6), A246–A252.
- Dat, J. D. G. (2010). *Coordination and optimization of the inter-auction transport of floricultural products at FloraHolland*. TU/e.
- De Bijenstichting. (2015). Onze partners. Retrieved July 1, 2015, from <http://www.bijenlint.nl/partners/onze-partners>
- Dehue, B., Meyer, S., & Hamelinck, C. (2007). *Towards a Harmonised Sustainable Biomass Certification Scheme*.

- Dendler, L. (2014). Sustainability Meta Labelling: An effective measure to facilitate more sustainable consumption and production? *Journal of Cleaner Production*, 63, 74–83.
- Dieleman, H. (2007). Cleaner Production and Innovation Theory. Social Experiments as a New Model to Engage in Cleaner Production. *Revista Internacional de Contaminación Ambiental*, 23(2), 79–94.
- Dunphy, D., Griffiths, A., & Benn, S. (2003). *Organizational change for corporate sustainability* (second edi.). London: Routledge Taylor & Francis Group.
- Epstein, M. J., & Buhovac, A. R. (2014). *Making sustainability work: Best practices in managing and measuring corporate social, environmental, and economic impacts*. Berrett-Koehler Publishers.
- European Commission. (2014a). Consultation with stakeholders. Retrieved May 29, 2015, from http://ec.europa.eu/agriculture/organic/eu-policy/policy-development/consultation-with-stakeholders/index_en.htm
- European Commission. (2014b). Control system. Retrieved May 29, 2015, from http://ec.europa.eu/agriculture/organic/consumer-trust/certification-and-confidence/controls-and-inspections/control-system/index_en.htm
- European Commission. (2014c). Expert hearings. Retrieved May 29, 2015, from http://ec.europa.eu/agriculture/organic/eu-policy/policy-development/expert-hearings/index_en.htm
- European Commission. (2014d). Organic farming policy: the historical background. Retrieved May 29, 2015, from http://ec.europa.eu/agriculture/organic/eu-policy/eu-legislation/historical-background/index_en.htm
- European Commission. (2015a). Inter-service steering group. Retrieved May 29, 2015, from http://ec.europa.eu/agriculture/organic/eu-policy/policy-development/inter-service-steering-group/index_en.htm
- European Commission. (2015b). Policy development. Retrieved May 26, 2015, from http://ec.europa.eu/agriculture/organic/eu-policy/policy-development/index_en.htm
- European Commission. (2015c). Regulatory Committee on organic production. Retrieved May 26, 2015, from http://ec.europa.eu/agriculture/organic/eu-policy/eu-legislation/regulatory-committee/index_en.htm
- FFP. (2010). *Protocol on audits for FFP acceptance*.
- FFP. (2015a). Fair Flowers Fair Plants - Betrokken organisaties. Retrieved April 28, 2015, from <http://www.fairflowersfairplants.com/nl/organisatie/betrokken-organisaties.aspx>
- FFP. (2015b). Fair Flowers Fair Plants - Certificeringseisen. Retrieved May 31, 2015, from <http://www.fairflowersfairplants.com/nl/consument/criteria-voor-deelname.aspx>
- FFP. (2015c). Fair Flowers Fair Plants - Geschiedenis. Retrieved February 17, 2015, from <http://www.fairflowersfairplants.com/nl/organisatie/geschiedenis.aspx>
- FFP. (2015d). Fair Flowers Fair Plants - Home. Retrieved April 28, 2015, from <http://www.fairflowersfairplants.com/>
- FFP. (2015e). Fair Flowers Fair Plants - In de media. Retrieved July 8, 2015, from <http://www.fairflowersfairplants.com/home-nl/in-de-media.aspx>

- FFP. (2015f). Fair Flowers Fair Plants - Nieuws. Retrieved June 15, 2015, from <http://www.fairflowersfairplants.com/nl/nieuws.aspx>
- FFP. (2015g). Fair Flowers Fair Plants - Organisatie. Retrieved February 17, 2015, from <http://www.fairflowersfairplants.com/nl/organisatie.aspx>
- FFP. (2015h). Fair Flowers Fair Plants - Standaard. Retrieved February 17, 2015, from <http://www.fairflowersfairplants.com/home-nl/standaard.aspx>
- FFP. (2015i). Fair Flowers Fair Plants - Voorwaarden producent. Retrieved May 31, 2015, from <http://www.fairflowersfairplants.com/nl/producent/voorwaarden-producent.aspx>
- FFP. (2015j). Fair Flowers Fair Plants - Zoek deelnemers. Retrieved May 31, 2015, from <http://www.fairflowersfairplants.com/nl/zoek-deelnemers.aspx>
- Fischer, C., Aguilar, F., Jawahar, P., & Sedjo, R. (2005). *Forest Certification: Toward Common Standards? Resources for the Future*.
- FloraHolland. (2015). FloraHolland - Onze missie en ambities. Retrieved June 23, 2015, from <https://www.floraholland.com/nl/over-floraholland/wie-zijn-we-wat-doen-we/onze-missie-en-ambities/>
- Forest Stewardship Council. (2014a). *FSC Principles and Criteria for Forest Stewardship*.
- Forest Stewardship Council. (2014b). Global FSC certificates: type and distribution.
- Forest Stewardship Council. (2015a). *Frequently asked questions (informative) - General requirements for FSC accredited certification bodies*.
- Forest Stewardship Council. (2015b). Trademark Support. Retrieved June 16, 2015, from <https://ic.fsc.org/trademark-support.42.htm>
- Forest Stewardship Council NL. (2015). *FSC Partners*.
- FSC. (2015a). 3 Steps to Certification. Retrieved June 3, 2015, from <https://ic.fsc.org/3-steps-to-certification.36.htm>
- FSC. (2015b). Accreditation. Retrieved June 3, 2015, from <https://ic.fsc.org/accreditation.28.htm>
- FSC. (2015c). Annual Reports. Retrieved June 3, 2015, from <https://ic.fsc.org/annual-reports.341.htm>
- FSC. (2015d). Become a Member. Retrieved June 3, 2015, from <https://ic.fsc.org/become-a-member.63.htm>
- FSC. (2015e). Consultations. Retrieved June 3, 2015, from <https://ic.fsc.org/consultations.106.htm>
- FSC. (2015f). Forest Management Certification. Retrieved May 27, 2015, from <https://ic.fsc.org/forest-management-certification.38.htm>
- FSC. (2015g). Governance. Retrieved June 3, 2015, from <https://ic.fsc.org/governance.14.htm>
- FSC. (2015h). Newsroom. Retrieved June 3, 2015, from <https://ic.fsc.org/newsroom.9.htm>
- FSC. (2015i). Our History. Retrieved May 27, 2015, from <https://ic.fsc.org/our-history.17.htm>

- FSC. (2015j). Principles and Criteria. Retrieved May 27, 2015, from <https://ic.fsc.org/principles-and-criteria.34.htm>
- FSC. (2015k). Public Search. Retrieved June 3, 2015, from <http://info.fsc.org/certificate.php>
- FSC. (2015l). Setting Standards. Retrieved June 3, 2015, from <https://ic.fsc.org/setting-standards.212.htm>
- FSC. (2015m). Smallholder portal - Certification. Retrieved June 15, 2015, from <https://ic.fsc.org/certification.606.htm>
- FSC. (2015n). Types of Certification. Retrieved May 27, 2015, from <https://ic.fsc.org/types-of-certification.35.htm>
- FSC. (2015o). Vision & Mission. Retrieved May 27, 2015, from <https://ic.fsc.org/vision-mission.12.htm>
- FSC NL. (2015a). Certificeerders en adviseurs. Retrieved June 15, 2015, from <http://www.fsc.nl/certificeerders-en-adviseurs.582.htm>
- FSC NL. (2015b). FSC wereldwijd. Retrieved May 27, 2015, from <http://www.fsc.nl/fsc-wereldwijd.562.htm>
- FSC U.S. (2011). *Costs and Benefits of Forest Certification*.
- Getz, C., & Shreck, A. (2006). What organic and Fair Trade labels do not tell us: towards a place-based understanding of certification. *International Journal of Consumer Studies*, 30(September), 490–501.
- Giovannucci, D., & Ponte, S. (2005). Standards as a new form of social contract? Sustainability initiatives in the coffee industry. *Food Policy*, 30(3), 284–301.
- GLOBALG.A.P. (2015). GLOBALG.A.P. History. Retrieved March 28, 2015, from http://www.globalgap.org/uk_en/who-we-are/about-us/history/
- Greenpeace. (2011). Green forestry labels PEFC & SFI called into question | Greenpeace International. Retrieved July 1, 2015, from <http://www.greenpeace.org/international/en/news/Blogs/makingwaves/green-forestry-labels-pefc-sfi-called-into-qu/blog/37371/>
- Greenpeace. (2014a). *Bloemen die bijen doden*.
- Greenpeace. (2014b). Weaker Certification Schemes | Greenpeace International. Retrieved July 1, 2015, from <http://m.greenpeace.org/international/en/mid/campaigns/forests/solutions/alternatives-to-forest-destruc/Weaker-Certification-Schemes/>
- Greenpeace. (2015). Duurzame landbouw | Greenpeace Nederland. Retrieved July 1, 2015, from <http://www.greenpeace.nl/campaigns/landbouw/>
- Groenkeur. (2015a). GroenKeur. Retrieved March 10, 2015, from <http://www.groenkeur.nl/>
- Groenkeur. (2015b). GroenKeur - Bestuur Stichting Groenkeur. Retrieved June 15, 2015, from http://groenkeur.nl/nl/Contact/Bestuur_Stichting_Groenkeur
- Groenkeur. (2015c). Groenkeur - Contact. Retrieved May 27, 2015, from http://groenkeur.nl/nl/Contact/College_van_Deskundigen_groen

- Groenkeur. (2015d). Groenkeur - Deelnemersinformatie. Retrieved March 29, 2015, from http://groenkeur.nl/nl/Over_het_keurmerk/Deelnemers_info
- Groenkeur. (2015e). Groenkeur - Downloads. Retrieved March 29, 2015, from <http://groenkeur.nl/nl/Downloads?folder4529=126>
- Groenkeur. (2015f). Groenkeur - Duurzame Boomkwekerijproducten. Retrieved March 29, 2015, from http://groenkeur.nl/nl/Over_het_keurmerk/Productcertificaat/Duurzame_Boomkwekerijproducten
- Groenkeur. (2015g). Groenkeur - Gecertificeerde bedrijven. Retrieved April 23, 2015, from http://groenkeur.nl/nl/Gecertificeerde_bedrijven
- Groenkeur. (2015h). Groenkeur - Meld compliment, idee, klacht. Retrieved April 23, 2015, from http://groenkeur.nl/Meld_compliment_idee_klacht
- Groenkeur. (2015i). GroenKeur - Organisatie. Retrieved March 16, 2015, from http://groenkeur.nl/nl/Over_het_keurmerk/Organisatie
- Groenkeur. (2015j). GroenKeur - Over het keurmerk. Retrieved March 16, 2015, from http://groenkeur.nl/nl/Over_het_keurmerk
- Groenkeur. (2015k). GroenKeur - Productcertificaat. Retrieved March 16, 2015, from http://groenkeur.nl/nl/Over_het_keurmerk/Productcertificaat
- Gupta, A. D. (2012). Corporate Social Responsibility and Strategy: A Bird's Eye View. *Global Business Review*, 13(1), 153–165.
- Guthman, J. (2007). The polanyian way? Voluntary food labels as neoliberal governance. *Antipode*, 39, 456–478.
- Haake, H., & Seuring, S. (2009). Sustainable Procurement of Minor Items – Exploring Limits to Sustainability, 17(5), 284–294.
- Harms, D., Hansen, E. G., & Schaltegger, S. (2013). Strategies in Sustainable Supply Chain Management: An Empirical Investigation of Large German Companies. *Corporate Social Responsibility and Environmental Management*, 20(4), 205–218.
- Hassel, H. van, & Heins-Mouwens, J. (2014). *Marktontwikkelingen 2013 Tuinbranche Nederland*.
- Heins-Mouwens, J. (2014). *Marktontwikkelingen 2013 Duurzame Tuinartikelen*.
- IAF. (2015a). IAF MEMBERS: Netherlands. Retrieved from http://www.iaf.nu/articles/IAF_MEM_Netherlands/92
- IAF. (2015b). International Accreditation Forum - IAF. Find Members, publications & resources. Retrieved from <http://www.iaf.nu/>
- IDH The Sustainable Trade Initiative. (2015). What We Do - Sustainable Trade Initiative. Retrieved January 22, 2015, from <http://www.idhsustainabletrade.com/what-we-do>
- International Labour Organisation. (2015a). Mission and objectives. Retrieved June 23, 2015, from <http://www.ilo.org/global/about-the-ilo/mission-and-objectives/lang--en/index.htm>

- International Labour Organisation. (2015b). Origins and history. Retrieved June 23, 2015, from <http://www.ilo.org/global/about-the-ilo/history/lang--en/index.htm>
- International Trade Centre (ITC). (2011). *The impacts of private standards on producers in developing countries - Literature Review Series on the Impacts of Private Standards; Part II.*
- International Trade Centre (ITC). (2014). Standards Map. Retrieved October 8, 2014, from <http://www.intracen.org/itc/market-info-tools/voluntary-standards/standardsmap/>
- ISEAL Alliance. (2013). *Principles for Credible and Effective Sustainability Standards Systems ISEAL Credibility Principles ISEAL Credibility Principles Introduction.*
- ISEAL Alliance. (2014a). About us | ISEAL Alliance. Retrieved October 7, 2014, from <http://www.isealalliance.org/about-us>
- ISEAL Alliance. (2014b). Defining credibility | ISEAL Alliance. Retrieved October 29, 2014, from <http://www.isealalliance.org/our-work/defining-credibility>
- ISEAL Alliance. (2014c). Improving impacts | ISEAL Alliance. Retrieved October 29, 2014, from <http://www.isealalliance.org/our-work/improving-impacts>
- ISEAL Alliance. (2014d). Increasing uptake | ISEAL Alliance. Retrieved October 30, 2014, from <http://www.isealalliance.org/our-work/increasing-uptake>
- ISEAL Alliance. (2014e). Our Codes of Good Practice | ISEAL Alliance. Retrieved October 7, 2014, from <http://www.isealalliance.org/our-work/defining-credibility/codes-of-good-practice>
- ISEAL Alliance. (2014f). Our history | ISEAL Alliance. Retrieved December 1, 2014, from <http://www.isealalliance.org/about-us/our-history>
- ISEAL Alliance. (2015a). Impacts Code | ISEAL Alliance. Retrieved January 20, 2015, from <http://www.isealalliance.org/our-work/defining-credibility/codes-of-good-practice/impacts-code>
- ISEAL Alliance. (2015b). Our members | ISEAL Alliance. Retrieved January 21, 2015, from <http://www.isealalliance.org/our-members>
- Jaffee, S., & Masakure, O. (2005). Strategic use of private standards to enhance international competitiveness: Vegetable exports from Kenya and elsewhere. *Food Policy, 30*(3), 316–333.
- Kalfagianni, A. (2010). The effectiveness of private food (retail) governance for sustainability. *Institute for Environmental Studies, 12*, 1–29.
- Kalfagianni, A., & Pattberg, P. (2011). *The Effectiveness of Transnational Rule- Rule - Setting Organisations in Global Sustainability Politics: An Analytical Framework. Global Governance.*
- Kitzmüller, M., & Shimshack, J. (2012). Economic Perspectives on Corporate Social Responsibility. *Journal of Economic Literature, 50*(1), 51–84.
- Lambert, D. M., & Cooper, M. C. (2000). Issues in Supply Chain Management. *Industrial Marketing Management, 29*, 65–83.
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society.* Harvard university press.

- Lozano, R. (2012). Are Companies Planning their Organisational Changes for Corporate Sustainability? An Analysis of Three Case Studies on Resistance to Change and their Strategies to Overcome it. *Corporate Social Responsibility and Environmental Management*, 20(5), 275–295.
- Lozano, R. (2013). A holistic perspective on corporate sustainability drivers. *Corporate Social Responsibility and Environmental Management*.
- LTO. (2015). LTO organisatie. Retrieved June 23, 2015, from <http://www.lto.nl/over-lto/lto-organisatie>
- Mainville, D. Y., Zylbersztajn, D., Farina, E. M. M. Q., & Reardon, T. (2005). Determinants of retailers' decisions to use public or private grades and standards: Evidence from the fresh produce market of São Paulo, Brazil. *Food Policy*, 30, 334–353.
- Maloni, M. J., & Brown, M. E. (2006). Corporate Social Responsibility in the Supply Chain: An Application in the Food Industry. *Journal of Business Ethics*, 68(1), 35–52.
- Meidinger, E. E. (2001). *Environmental Certification Programs and U.S. Environmental Law: Closer Than You May Think*. *Environmental Law Reporter*.
- MilieuCentraal. (2015). PEFC Europees/Noord Amerikaans hout. Retrieved July 2, 2015, from <http://keurmerken.milieucentraal.nl/keurmerken/inhoud/hout/hout/pefc-europeesnoord-amerikaans-hout>
- MKB Nederland. (2015). MKB Green Deal | Tuinbranche Nederland. Retrieved February 10, 2015, from <http://www.mkb.nl/index.php?pageID=390>
- Molenaar, J. W., Kessler, J. J., El Fassi, M., Dallinger, J., Blackmore, E., Vorley, B., ... Buchel, S. (2013). *Building a roadmap to sustainability in agro-commodity production*.
- MPS. (2013a). *Certificatieschema MPS-ABC*.
- MPS. (2013b). *Certificatieschema MPS-GAP*.
- MPS. (2014). *Certificatieschema MPS-SQ*.
- MPS. (2015a). Certificaten. Retrieved February 17, 2015, from <http://www.my-mps.com/certificaten-producent>
- MPS. (2015b). Certificaten. Retrieved May 31, 2015, from <http://www.my-mps.com/certificaten-handelaar>
- MPS. (2015c). Gecertificeerde bedrijven. Retrieved May 5, 2015, from <http://www.my-mps.com/certificaten-producent/gecertificeerde-bedrijven>
- MPS. (2015d). Historie. Retrieved February 17, 2015, from <http://www.my-mps.com/over-mps-producent/historie>
- MPS. (2015e). Ingetrokken certificaten. Retrieved May 5, 2015, from <http://www.my-mps.com/certificaten-producent/ingetrokken-certificaten>
- MPS. (2015f). Kosten MPS-ABC Nederland 2015.
- MPS. (2015g). Missie & Visie. Retrieved April 24, 2015, from <http://www.my-mps.com/over-mps-producent/missie-visie>

- MPS. (2015h). MPS GAP voor aantoonbare traceerbaarheid, veiligheid en hygiëne. Retrieved May 6, 2015, from <http://www.my-mps.com/certificaten-producent/mps-gap>
- MPS. (2015i). MPS nieuws. Retrieved May 4, 2015, from <http://www.my-mps.com/nieuws-producent>
- MPS. (2015j). MPS-ABC. Retrieved May 3, 2015, from <http://www.my-mps.com/certificaten-producent/mps-abc>
- MPS. (2015k). MPS-Groep. Retrieved February 17, 2015, from <http://www.my-mps.com/over-mps-producent/mps-groep>
- MPS. (2015l). MPS-Groep - MPS voor duurzaamheid en milieu. Retrieved May 5, 2015, from <http://www.my-mps.com/over-mps-handelaar/mps-groep>
- MPS. (2015m). MPS-Socially Qualified (SQ). Retrieved May 6, 2015, from <http://www.my-mps.com/certificaten-producent/mps-sq>
- MPS. (2015n). Organisatie. Retrieved May 3, 2015, from <http://www.my-mps.com/over-mps-producent/organisatie>
- MPS. (2015o). Over MPS. Retrieved February 17, 2015, from <http://www.my-mps.com/over-mps-producent>
- MPS-ECAS. (2015a). Accreditatie - ECAS. Retrieved May 3, 2015, from <http://www.ecas.nl/home/accreditatie>
- MPS-ECAS. (2015b). Beroep en Dispuut - ECAS. Retrieved May 5, 2015, from <http://www.ecas.nl/home/beroep-en-dispuut>
- MPS-ECAS. (2015c). Certificaten - ECAS. Retrieved May 5, 2015, from <http://www.ecas.nl/certificaten#certificaten-andere-instanties>
- MPS-ECAS. (2015d). College van Deskundigen - ECAS. Retrieved May 5, 2015, from <http://www.ecas.nl/home/college-van-deskundigen>
- MPS-ECAS. (2015e). Home - ECAS. Retrieved May 5, 2015, from <http://www.ecas.nl/>
- MPS-ECAS. (2015f). MPS-ABC. Retrieved March 28, 2015, from <http://www.ecas.nl/11-nederlands/algemeen/55-mps-abc>
- MPS-ECAS. (2015g). MPS-GAP - ECAS. Retrieved March 28, 2015, from <http://www.ecas.nl/22-nederlands/certificaten/58-mps-gap>
- MPS-ECAS. (2015h). Tarievenlijst MPS-ECAS.
- MPS-HCS. (2015). Home - MPS-HCS. Retrieved May 4, 2015, from <http://www.my-hcs.com/>
- MSC. (2015). MSC Fisheries Standard. Retrieved June 19, 2015, from <https://www.msc.org/about-us/standards/fisheries-standard/msc-environmental-standard-for-sustainable-fishing>
- MVO Nederland. (2015). Tuinbranche Nederland. Retrieved February 10, 2015, from <http://www.mvonederland.nl/organisatie/tuinbranche-nederland>
- Nadvi, K., & Waltring, F. (2004). Making sense of global standards. In *Local Enterprises in the Global Economy: Issues of Governance and Upgrading* (p. 392).

- NL Greenlabel. (2014). *Handboek Duurzame Buitenruimte* (2nd editio.).
- NL Greenlabel. (2015a). Bekijk de duurzame partners en NL Professionals van NL Greenlabel. Retrieved March 29, 2015, from <http://www.nlgreenlabel.nl/partners/>
- NL Greenlabel. (2015b). Hoe word ik partner van NL Greenlabel. Retrieved May 29, 2015, from <http://www.nlgreenlabel.nl/hoe-word-ik-partner/>
- NL Greenlabel. (2015c). Materialen en producten. Retrieved July 29, 2015, from <http://www.nlgreenlabel.nl/materialen-en-producten/>
- NL Greenlabel. (2015d). NL Greenlabel: duurzaamheid in producten, materialen, planten, buitenruimtes. Retrieved March 29, 2015, from <http://www.nlgreenlabel.nl/homepage/nlgreenlabel/>
- NL Greenlabel. (2015e). Over NL Greenlabel. Retrieved March 28, 2015, from <http://www.nlgreenlabel.nl/nico-en-lodewijk/>
- Northbourne, Lord. (1940). *Look to the Land*. J.M. Dent, London.
- Pattberg, P. (2005). What role for private rule-making in global environmental governance? Analysing the Forest Stewardship Council (FSC). *International Environmental Agreements: Politics, Law and Economics*, 5(2), 175–189.
- Pedersen, E. R. (2009). The many and the few: rounding up the SMEs that manage CSR in the supply chain. *Supply Chain Management: An International Journal*, 14(2), 109–116.
- PEFC. (2011). On the Ground 2011 – The Controversy of Greenpeace - News. Retrieved July 1, 2015, from <http://www.pefc.org/news-a-media/general-sfm-news/812-on-the-ground-2011>
- PEFC. (2012). PEFC Calls on FSC to Focus on Sustainable Forest Management - News. Retrieved July 7, 2015, from <http://www.pefc.org/news-a-media/general-sfm-news/963->
- PEFC. (2015a). Certification & Accreditation. Retrieved May 11, 2015, from <http://pefc.org/standards/national-standards/certification-accreditation-requirements>
- PEFC. (2015b). Finance. Retrieved June 2, 2015, from <http://www.pefc.org/resources/brochures/finance>
- PEFC. (2015c). Governance. Retrieved May 11, 2015, from <http://www.pefc.org/about-pefc/governance>
- PEFC. (2015d). History. Retrieved May 11, 2015, from <http://www.pefc.org/about-pefc/who-we-are/history>
- PEFC. (2015e). Home. Retrieved May 11, 2015, from <http://www.pefc.org/>
- PEFC. (2015f). International Endorsement. Retrieved May 11, 2015, from <http://www.pefc.org/standards/endorsement-mutual-recognition>
- PEFC. (2015g). International Stakeholder Members - International Stakeholders. Retrieved July 1, 2015, from <http://www.pefc.org/about-pefc/membership/international-stakeholder>
- PEFC. (2015h). Training and Support - Training and Support. Retrieved July 7, 2015, from <http://www.pefc.org/resources/training-and-support>
- PEFC. (2015i). What Makes PEFC Unique? Retrieved May 11, 2015, from <http://www.pefc.org/about-pefc/what-makes-pefc-unique>

- PEFC Council. (2014). *Requirements for Certification Bodies operating Certification against the PEFC International Chain of Custody Standard*.
- PEFC NL. (n.d.). *Chain of Custody: Gedeelde Verantwoordelijkheid voor Duurzaam Bosbeheer. In 8 stappen naar Chain of Custody certificering*.
- PEFC NL. (2015a). PEFC Nederland — Certificaten database. Retrieved June 2, 2015, from <http://pefcnederland.nl/certificaten-database/>
- PEFC NL. (2015b). PEFC Nederland — Certificeerders. Retrieved May 11, 2015, from <http://pefcnederland.nl/pefc-certificering/chain-of-custody/certificeerders/>
- PEFC NL. (2015c). PEFC Nederland — De labels. Retrieved June 2, 2015, from <http://pefcnederland.nl/pefc-logo/de-labels/>
- PEFC NL. (2015d). PEFC Nederland — Hoe werkt het? Retrieved June 2, 2015, from <http://pefcnederland.nl/pefc-certificering/boscertificering/hoe-werkt-het/>
- PEFC NL. (2015e). PEFC Nederland — Nieuws Archives. Retrieved June 2, 2015, from <http://pefcnederland.nl/category/nieuws/>
- PEFC NL. (2015f). PEFC Nederland — PEFC in het kort. Retrieved May 11, 2015, from <http://pefcnederland.nl/over-pefc/wat-is-pefc/>
- PEFC NL. (2015g). PEFC Nederland — Wat doet PEFC? Retrieved May 11, 2015, from <http://pefcnederland.nl/over-pefc/wat-is-pefc/wat-doet-pefc/>
- PEFC NL. (2015h). PEFC Nederland — Wat kost CoC certificering? Retrieved June 2, 2015, from <http://pefcnederland.nl/pefc-certificering/chain-of-custody/wat-kost-coc-certificering/>
- Ponte, S. (2004). *Standards and Sustainability in the Coffee Sector. A Global Value Chain Approach*.
- Ponte, S., & Cheyns, E. (2013). Voluntary standards, expert knowledge and the governance of sustainability networks. *Global Networks*, 13(4), 459–477.
- Potts, J., Lynch, M., Wilkings, A., Huppe, G., Cunningham, M., & Voora, V. (2014). *The State of Sustainability Initiatives Review 2014, Standards and the Green Economy. International Institute for Sustainable Development (IISD) and the International Institute for Environment and Development (IIED)*.
- Productschap Tuinbouw. (2011). *Tuinbeleving 2011 Een segmentatie van de Nederlandse tuinbezitter*.
- Rabobank. (2015). Rabobank Cijfers & Trends, 1–7.
- Reardon, T., Codron, J. M., Busch, L., Bingen, J., & Harris, C. (2001). Global change in agrifood grades and standards: Agribusiness strategic responses in developing countries. *International Food and Agribusiness Management Review*, 2(3), 421–435.
- Reinecke, J., Manning, S., & von Hagen, O. (2012). The Emergence of a Standards Market: Multiplicity of Sustainability Standards in the Global Coffee Industry. *Organization Studies*, 33(5-6), 791–814.
- RESOLVE. (2012). *Toward Sustainability - The Roles and Limitations of Certification*. Washington, DC.
- Review Committee of Fair Flowers Fair Plants. (2010). *The Review Committee's Benchmark Document for the Certification Organisations and Programmes to be used for the Fair Flowers Fair Plants label*.

- Rigby, D., & Cáceres, D. (2001). Organic farming and the sustainability of agricultural systems. *Agricultural Systems*, 68(1), 21–40.
- Rijksoverheid. (2009). Duurzaam inkopen | Video | Rijksoverheid.nl. Retrieved March 11, 2015, from <http://www.rijksoverheid.nl/documenten-en-publicaties/videos/2009/05/22/duurzaam-inkopen.html>
- Rijksoverheid. (2015). Green Deal aanpak | Duurzame economie | Rijksoverheid.nl. Retrieved May 28, 2015, from <http://www.rijksoverheid.nl/onderwerpen/duurzame-economie/green-deal>
- Rosenberg, D., Eckstein, M., & Brett, C. (2009). *Traders as agents of sustainability in coffee and cocoa supply chains*.
- Roy, B., & Vincke, P. (1981). Multicriteria analysis: survey and new directions. *European Journal of Operational Research*, 8, 207–218.
- RvA. (2015a). Keurmerken van geaccrediteerde organisaties - Raad voor Accreditatie. Retrieved March 12, 2015, from <https://www.rva.nl/geaccrediteerde-organisaties/keurmerken-van-geaccrediteerde-organisaties>
- RvA. (2015b). Wat is accreditatie? - Raad voor Accreditatie. Retrieved April 23, 2015, from <https://www.rva.nl/over-accreditatie/wat-is-accreditatie>
- Scharpf, F. W. (1999). *Governing in Europe: Effective and Democratic?* Oxford University Press, Oxford.
- Schmitz-Hoffmann, C., Schmidt, M., Hansmann, B., & Palekhov, D. (2014). *Voluntary Standard Systems - A Contribution to Sustainable Development*. Heidelberg: Springer Berlin Heidelberg.
- Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. *Journal of Cleaner Production*, 16(15), 1699–1710.
- Seuring, S., Sarkis, J., Müller, M., & Rao, P. (2008). Sustainability and supply chain management – An introduction to the special issue. *Journal of Cleaner Production*, 16(15), 1545–1551.
- SKAL. (2009). *Skal-Reglement bezwaar*.
- SKAL. Skal - Reglement certificatie en toezicht (2012).
- SKAL. (2013). *Informatieblad biologische teelt van gewassen*.
- SKAL. (2014). Jaarverslag 2013 - meer en meer betrouwbaar bio. Retrieved May 29, 2015, from <http://www.skal.com/over-ons/publicaties/jaarverslag2013/>
- SKAL. (2015a). Bestuur. Retrieved May 26, 2015, from <http://www.skal.com/over-ons/bestuur/>
- SKAL. (2015b). Blog. Retrieved May 29, 2015, from <http://www.skal.com/over-ons/blog/>
- SKAL. (2015c). Certificering. Retrieved May 7, 2015, from <http://www.skal.nl/biologische-teelt-van-gewassen/certificering/>
- SKAL. (2015d). Hoe lang is de omschakelperiode? Retrieved May 7, 2015, from <http://www.skal.com/biologische-teelt-van-gewassen/omschakelen/hoe-lang-is-de-omschakelperiode/>
- SKAL. (2015e). Missie Skal Biocontrole. Retrieved May 7, 2015, from <http://www.skal.nl/over-ons/missie/>

- SKAL. (2015f). Omschakelen. Retrieved May 7, 2015, from <http://www.skal.com/biologische-teelt-van-gewassen/omschakelen/>
- SKAL. (2015g). Publicaties. Retrieved May 29, 2015, from <http://www.skal.com/over-ons/publicaties/>
- SKAL. (2015h). *Skal-Tarievenblad 2015*.
- SKAL. (2015i). Webportal. Retrieved May 29, 2015, from <https://portal.skal.nl/ACM/faces/form/portal/tools/partnercertsearch.xhtml?directlink=true>
- SKAL. (2015j). Welkom bij Skal. Retrieved June 16, 2015, from <http://www.skal.com/>
- SMK. (2014a). *Jaarverslag 2014*.
- SMK. (2014b). *Milieukeur certificatieschema "Plantaardige producten uit open teelt."*
- SMK. (2014c). *Milieukeur certificatieschema "Plantaardige producten uit open teelt" met specifieke criteria voor boomkwekerijproducten.*
- SMK. (2015a). Certificeren - Milieukeur. Retrieved May 26, 2015, from <http://www.milieukeur.nl/39/voor-producenten/certificeren.html>
- SMK. (2015b). Controle en richtlijnen logo Milieukeur - Milieukeur. Retrieved June 16, 2015, from <http://www.milieukeur.nl/26/voor-producenten/controle-en-richtlijnen-logo.html>
- SMK. (2015c). Home - Milieukeur. Retrieved March 10, 2015, from <http://www.milieukeur.nl/19/home.html>
- SMK. (2015d). Home - Milieukeur Internationaal. Retrieved May 26, 2015, from <http://www.milieukeur-international.com/275/home.html>
- SMK. (2015e). Home - SMK. Retrieved May 26, 2015, from <http://www.smk.nl/1/home.html>
- SMK. (2015f). Jaarverslagen - SMK. Retrieved May 26, 2015, from <http://www.smk.nl/12/nieuws/jaarverslagen.html>
- SMK. (2015g). Milieukeur Certificatieschema's - Milieukeur. Retrieved May 26, 2015, from <http://www.milieukeur.nl/36/m/certificeren/index.html#a-e>
- SMK. (2015h). Nieuws & Persberichten. Retrieved March 8, 2015, from <http://www.smk.nl/10/m/nieuws/181/details.html>
- SMK. (2015i). Organisatie - SMK. Retrieved March 10, 2015, from <http://www.smk.nl/8/over-smk/organisatie.html>
- SMK. (2015j). Organisatiestructuur. Retrieved May 26, 2015, from <http://www.smk.nl/9/over-smk/organisatiestructuur.html>
- SMK. (2015k). *Tarieven Milieukeur Plantaardige producten uit de open teelt.*
- Stichting Eerlijk Buitenleven. (2015). Stichting Eerlijk Buitenleven. Retrieved May 28, 2015, from <http://www.eerlijk-buitenleven.nl/>
- Stichting Groenkeur. (2009). *Reglement Klachten Groenkeur Reglement Klachten Groenkeur Reglement Klachten Groenkeur.*

- Stichting Groenkeur. (2014a). *Assessment Guideline Groenkeur Sustainable Tree Nursery Products*.
- Stichting Groenkeur. (2014b). *Bijdragenbesluit 2015*.
- Stichting Groenkeur. (2014c). *Jaarverslag Stichting Groenkeur 2013*.
- Thonemann, U. W., & Bradley, J. R. (2002). The effect of product variety on supply-chain performance. *European Journal of Operational Research*, 143(3), 548–569.
- Trommelen, J. (2014). Intratuin weert middelen die tot bijensterfte leiden. *De Volkskrant*. Retrieved from <http://www.volkskrant.nl/binnenland/intratuin-weert-middelen-die-tot-bijensterfte-leiden~a3789036/>
- Tuinbranche Nederland. (2015a). *Groen brancheplan tuinbranche - Natuurlijk verder Een dynamisch actieplan*.
- Tuinbranche Nederland. (2015b). Wie is Tuinbranche Nederland - Tuinbranche Nederland. Retrieved January 8, 2015, from <http://www.tuinbranche.nl/Wie-is-Tuinbranche-Nederland/>
- Vallejo, N., & Hauselmann, P. (2005). Demystifying the jungle of competing certification schemes. In *Forest Certification : An innovative instrument in the service of sustainable development?* (pp. 167–183).
- Van Doorn, J., & Verhoef, P. C. (2011). Willingness to pay for organic products: Differences between virtue and vice foods. *International Journal of Research in Marketing*, 28(3), 167–180.
- Van Hoeven, H. (2009). *Sourcing and procurement as driving forces for sustainable business*.
- Vermeulen, W. J. V., & Metselaar, J. A. (2015). Improving sustainability in global supply chains with private certification standards : testing an approach for assessing their performance and impact potential. *International Journal of Business and Globalisation*, 14(2), 226–250.
- Vermeulen, W. J. V. (2010). Sustainable supply chain governance systems: conditions for effective market based governance in global trade. *Progress in Industrial Ecology, an International Journal*, 7(2), 138–162.
- Vermeulen, W. J. V. (2013). Self-Governance for Sustainable Global Supply Chains: Can it Deliver the Impacts Needed? *Business Strategy and the Environment*.
- Von Geibler, J. (2013). Market-based governance for sustainability in value chains: conditions for successful standard setting in the palm oil sector. *Journal of Cleaner Production*, 56, 39–53.
- Vos, B., & Aalbers, J. (2009). *Sustainable sourcing among SME's - Small companies delivering on big challenges*.
- Waide, P., & Bernasconi-Osterwalder, N. (2008). *Standards, Labelling and Certification*.
- Walker, K., & Wan, F. (2012). The Harm of Symbolic Actions and Green-Washing: Corporate Actions and Communications on Environmental Performance and Their Financial Implications. *Journal of Business Ethics*, 109(2), 227–242.
- Wang, J.-J., Jing, Y.-Y., Zhang, C.-F., & Zhao, J.-H. (2009). Review on multi-criteria decision analysis aid in sustainable energy decision-making. *Renewable and Sustainable Energy Reviews*, 13(9), 2263–2278.
- Wereld Natuur Fonds. (2015). De keurmerken - Houtkeurmerken - Bossen - Thema's - Wat WNF doet. Retrieved July 1, 2015, from http://www.wnf.nl/nl/wat_wnf_doet/thema_s/bossen/houtkeurmerken/de_keurmerken/

Wright, C., & Madrid, G. (2007). Contesting ethical trade in Colombia's cut-flower industry: a case of cultural and economic injustice. *Cultural Sociology*, 1(2), 255–275.

16. REFERENCE LIST - INTERVIEWS AND PERSONAL COMMUNICATIONS

- ¹ B. Horstra, personal communication, September 8 2014
- ² R. Jansen, personal communication, March 31, 2015
- ³ Interview director Groenkeur, 11-3-2015
- ⁴ Interview director Arie Bouman, 19-3-2015
- ⁵ Interview director Griffioen Wassenaar, 30-4-2015
- ⁶ Interview project manager Agrofood, SMK, 20-5-2015
- ⁷ Interview retail manager MPS, 31-3-2015
- ⁸ Meeting growers associations, Tuinbranche NL, 20-2-2015
- ⁹ Interview PR/communications advisor Intratuin, 9-4-2015
- ¹⁰ K. de Bruyn, personal communication, 14-7-2015
- ¹¹ Questionnaire certification employee SKAL (see Appendix F).
- ¹² Interview account manager NL Greenlabel/RHDHV
- ¹³ Interview deputy director FSC, 27-5-2015
- ¹⁴ Interview coordinator policy and registration PEFC, 12-5-2015
- ¹⁵ Interview contact liaison LTO Noord, 30-4-2015
- ¹⁶ Interview chairman ZLTO, 22-6-2015
- ¹⁷ Interview director Groenrijk, 13-5-2015

APPENDIX A – ALL STANDARDS USED IN THE HORTICULTURE SECTOR ACCORDING TO THE ITC (INTERNATIONAL TRADE CENTRE (ITC), 2014)

STANDARD	GEOGRAPHICAL SCOPE	TOPIC	FOCUS
AFRISCO	South Africa	Organic	Environment
Bio Suisse	Switzerland	Organic	Environment
BOPP Standard – Grower Standard	UK	Horticulture	
Business Social Compliance Initiative Code of Conduct	Global	Working conditions	Social
Chinese National Organic Products Certification Program	China	Organic	Environment
Climate, Community & Biodiversity Standards (CCB Standards)		Land management	Environment & social
East African organic products standard	East Africa	Organic	Environment
EcoVadis		CSR	Environment, social & economic
EHPEA Code of Practice for Sustainable Flower Production	Ethiopia	Floriculture	Economic
Ethical Trading Initiative – ETI	Global	Trade, working conditions	Social
EU Organic Farming	EU	Organic	Environment
Fair Flowers Fair Plants – FFP	Global (mostly Europe)	Floriculture	Environment & social
Fair for Life	Global	Trade	Social
Fairtrade International	Global (mostly developing world)	Trade	Social
FairWild	Global	Wild-collected natural products	Environment & social
FLA Workplace Code of Conduct	Global	Working conditions	Social
Florverde® Sustainable Flowers	Global (mostly North and South America)	Flowers	Environment & social
Forest Stewardship Council (FSC)	Global	Forestry	Environment, social & economic
GLOBALG.A.P. (all variants)	Global	Agriculture	Environment & social
Guide on Social Responsibility for Chinese International Contract	China	Contracting	Social
Ifoam Standard		Organic	Environment
International Labour Organisation Labour Standards	Global	Labour	Social
International Sustainability and Carbon Certification - ISCC EU	Global	Biomass	Environment, social & economic
Kenya Flower Council	Kenya	Cut flowers	Environment & social
LEAF Marque	Global	Agriculture	Environment
MPS (all variants)	Global (mostly NL)	Horticulture	Environment & social
Naturland	Global	Organic	Environment & social
OECD Guidelines for Multinational Enterprises	Multinationals	Labour	Social & economic
OFDC Organic Certification Standards	Global	Organic	Environment, social & economic
Pacific Organic Standard Crop	Pacific region	Organic	Environment

Safe Quality Food Program – SQF	Global	Food safety	
SAI Platform -- Farm Sustainability Assessment	Global	Agriculture (mostly food)	Environment, social & economic
Sedex	Global	Labour	Social
Small Producers Symbol	Developing world	Producers?	
Social Accountability International - SA8000	Global	Labour	Social
Soil Association organic standards		Organic	Environment
Sustainably Grown	Global	Agriculture (food & fibre)	Environment & social
Sustainable Agriculture Network - Rainforest Alliance	Global	Rainforests	Environment, social & economic
UN Global Compact	Global	CSR	Environment, social & economic
Unilever Sustainable Agriculture Code*	Global	Agriculture	Environment, social & economic
Verified Carbon Standard – VCS	Global	GHG emission	Environment & economic
WFTO Guarantee System	Global	Trade	Social & economic

APPENDIX B – ALL STANDARDS USED FOR WOODEN PRODUCTS ACCORDING TO THE ITC (INTERNATIONAL TRADE CENTRE (ITC), 2014)

STANDARD	GEOGRAPHICAL SCOPE	TOPIC	FOCUS
ABNT Ecolabel	Brazil		Environment, social & economic
Business Social Compliance Initiative Code of Conduct (BSCI)	Global	-	Social
EcoVadis	Global		Environment, social & economic
Ethical Trading Initiative (ETI)	Global	Trade	Social
Fair for Life	Global		Social
FLA Workplace Code of Conduct	Global		Social
Forest Stewardship Council – Forest Management	Global	Forestry	Environment, social & economic
FSC Standard for Chain of Custody Certification	Global	Forestry	Environment, social & economic
Green Mark Taiwan	Taiwan	?	
Green Seal	China	Labour	Social & economic
Guide on Social Responsibility for Chinese Int Contractors	Hong Kong	Contracting	Social
Hong Kong Green Label Scheme (HKGLS)	Global	Labour	Social
International Labour Organisation Labour Standards	Global	Labour	Social
PEFC International	Global	Forestry	Environment, social & economic
Sedex Members Ethical Trade Audit - SMETA	Global	Trade	Social
Social Accountability International - SA8000	Global	Labour	Social
Sustainable Forestry Initiative - SFI	Global	Forestry	Environment, social & economic
TerraChoice - EcoLogo Program (UL Ecologo Certification)	Global		Environment
The EU Ecolabel	EU	Organic	Environment
UN Global Compact	Global	CSR	Environment, social & economic
Verified Carbon Standard – VCS	Global	GHG emission	Environment & economic
WFTO Guarantee System	Global	Trade	Social & economic

APPENDIX C – QUALITY CRITERIA OPERATIONALISED

CRITERION	DEFINITION	INDICATORS
EFFECTIVENESS		
Clarity of standard formulation	Clear document of certification criteria, operationalised and preferably quantified; set criteria contribute to mission and vision; methods contribute to goals	<ul style="list-style-type: none"> - Quantitative criteria - Detailed standard document available - Description of certification process - Instructions for certification process
Relevant objectives	Assessment of challenges in the sector; inclusive process of standard setting, with broad group of stakeholders; involvement of experts, internal or external; regular revision to ensure relevance	<ul style="list-style-type: none"> - Sustainability expert panel - Addressing main challenges - Stakeholders involved in standard setting - Regular revision
Strong M&E system	Multi-actor system; regular self-evaluation and revisions of all components of the standard system; annual reports; sufficient resource allocation; non-compliance system	<ul style="list-style-type: none"> - Annual reports - Multi-actor system - Non-compliance system - Strong accreditation
Broad reach	Ability to reach a large group of firms; flexibility of methods (focus on outcome, not methods); applicable to a large variety of firms; cultural sensitivity	<ul style="list-style-type: none"> - Usable for entire sector - Usable in many nations - Included in ITC Standards Map
Accessibility	Appropriate upfront investments required; use of capacity building and transition programmes (in field or online); Assurance is affordable to clients who fall within the scope, is comprehensible and within the reach of target clients; audits are not more burdensome than necessary; no discrimination against interested parties based on cost, restrictions on access or overly burdensome requirements.	<ul style="list-style-type: none"> - Scaled fee model in relation to firm size - Fee €1000 or lower - Several levels of stringency in certification - Group certification
Coordination with other standards	No overlap with other standards, unless cooperating with these standards; minimised overlap and maximize consistency in content, terminology and methods; shared systems with other standards	<ul style="list-style-type: none"> - Cooperation with other similar standards - Possible to use several standards combined - Complimentary to other similar standards - Benchmarking based on other standards
Efficiency	View on the existing landscape of relevant standards and public policy; minimize overlap and maximize consistency in content, terminology and methods; shared systems with other standards; substantial difference from other standards in the field; business model that optimizes sustainability impact, while minimizing costs and effort;	<ul style="list-style-type: none"> - External efficiency: <ul style="list-style-type: none"> - Minimised overlap with other standards - Consistency - Shared systems with other standards - Internal efficiency <ul style="list-style-type: none"> - Little overhead
Continuous improvement and learning	Regular self-evaluation; integrated learning system; regular training of employees; complaint mechanism;	<ul style="list-style-type: none"> - Review of standards at minimum every five years - Complaints mechanism - Forums for exchange of expert information

CRITERION	DEFINITION	INDICATORS
LEGITIMACY		
Trustworthy assurance	Third-party auditing; external review; properly trained auditors; sufficient procedures and systems to ensure comprehensive, consistent and objective audits;	<ul style="list-style-type: none"> - Third-party auditing - Audits by professionals - All firms are audited every year - Full in-field audits
Impartiality	Third-party auditing; multi-actor system; no person in the M&E system has vested interests in the outcome of its procedures; balanced and transparent rules; mechanisms to deal with conflict-of-interests; balance of representation	<ul style="list-style-type: none"> - Third-party auditing - Third-party accreditation - Balanced representation in committees - ISO/IEC 17065:2012 certified - Mechanisms to deal with conflict-of-interests
Truthfulness	Controllable claims and statements; referencing; comprehensive reporting of both performance of certified firms and impact of the standard; external review of standard; sanction mechanism for incorrect use of the standard; comparable performance data available; traceability system	<ul style="list-style-type: none"> - Third-party accreditation - ISO/IEC 17065:2012 certified - Data available on the performance of firm/audit summaries - Non-compliance mechanism - Traceability mechanism/ Supply chain certification
Transparency	Standard and information of the standard system freely and publicly accessible online; publicly available database of certified organisations; high-quality information presented in clear and accessible formats; in assurance, information made available includes, at minimum, the status of certification assessments, stakeholder input and how it was addressed, decisions on assessments, the names and status of certified enterprises, the scope of the certificate, as well as those whose certificates have been withdrawn or suspended, and the name of the assurance provider; in M&E, information made available includes indicators being measured, sources of data, outcome and impact evaluation reports, and resulting changes to the system.	<ul style="list-style-type: none"> - Regular updates of the activities of the organisation - Standard accessible online - Annual reports and financial reports of last 5 years online or available on request. - Database of certified organisations online - Transparent auditing process - KPIs formulated for the standard performance
Stakeholder engagement	Stakeholders mapping; Stakeholder participation in the standard setting phase; encouragement of active engagement with the standard, via e.g. feedback mechanisms; possibility to contribute to decision making processes; possibility to provide input to auditing process;	<ul style="list-style-type: none"> - Stakeholders surveys - Stakeholders in standard setting committees. - Feedback mechanisms
Financial sustainability	Statement of financial system, sources of income etc.; financial model appropriate to the stage of development of the system.	<ul style="list-style-type: none"> - Self-supporting financial model: no subsidies, no donations
Compliance with legal regulations	No history of legal issues in the Netherlands or country of production	<ul style="list-style-type: none"> - No history of legal issues in the Netherlands or country of production - Use or mentioning of legal regulations

CRITERION	DEFINITION	INDICATORS
MANAGEMENT		
Matching to existing sustainability issues	Standard addresses issues experienced by gardening sector	- Addresses the most important topic in an appropriate manner.
Economic benefits	Costs of certification; potential increase in overall profit	- Low costs - Increased sales price of product
Appealing to the consumer	Media coverage on the standard; value for money; visibility; third-party endorsement	- Known with firms - Attractive product - Eco-label for consumer - Media coverage - Third-party endorsement
Appeal to the producers	Stringency; transition programme, ability to adapt the standard to the firm; known and proven concept	- Flexibility - Training programme - Known by producers - Known by retail
Match with the firm's context	Case-by-base match, based on interviews	- Active promotion - Practical feasibility - Guarantee

APPENDIX D – INTERVIEW GUIDELINES STANDARDS

Aim of the interview: gaining information on the role standard X plays in the transition to a more sustainable gardening sector.

BACKGROUND OF STANDARD X

Could you please tell me more about the history of standard X? When was it founded by whom and why?

What is the relationship of standard X with Tuinbranche NL?

How many firms are certified by standard X?

THE STANDARD

What is the mission of standard X?

What is the target user of standard X? Which firms do you aim at?

Can you elaborate on the content of the standard?

Which criteria does a certified product or firm have to meet?

How is standard X financed?

What are the costs of getting standard X certified? Are the fees proportional to firm size or uniform?

Does standard X have an eco-label?

Standard-setting

How was the standard and its criteria formulated?

Who were involved in that process?

How is standard X different from the other standards in the sector?

Are there regular moments of evaluation? Are there any other mechanisms to ensure continuous improvement?

LEGITIMACY

How does standard X ensure impartiality? Who are in the daily board etc.?

Who performs the auditing and monitoring? What does the auditing process entail? How often are the firms audited?

How do deal with non-compliance?

APPENDIX E – TRANSCRIPTS INTERVIEWS STANDARDS

MATTHIJS MESKEN, DIRECTOR GROENKEUR – 11-3-15

Groenkeur was established in 2003 as an initiative of the VHG. The initial motivation was to be able to guarantee the quality of work in certain professions, mainly the gardeners. In 2012, the organisation gained independence of the VHG, to guarantee the impartiality of the standard. Groenkeur employs four people: one full-time director; one full-time specialist on the standard content; and two part-time employees responsible for administration and communication. The organisation has a yearly budget of 500,000 euro which is spread evenly across personnel costs, the management of the standard, and marketing and communication. The latter sets Groenkeur apart from other standards in the sector. The organisation actively engages in marketing activities to create support and awareness of their standards and the certified firms, in contrary to other standards. The organisation is financed by the firms requesting certification. These firms pay 1,200 euro per year, per used standard, to get certified. For the arborists, smaller firms (<5 ha) pay less contribution, and medium-sized firms (5-10 ha) pay a sum that is the middle of the other two. This is excluding the audit costs.

They have awarded approximately 600 certificates to about 350 firms. Groenkeur offers four company certificates that ensure high quality service, expertise, educated personnel etc., of the certified firms. Herein, the standard is coupled to ISO9001. The larger corporate and public clients are showing a clear preference for service firms that have a service label, like Groenkeur. Groenkeur is therefore experiencing an increased interest from firms that want to be certified.

In late 2013, Groenkeur has also started the development of a product standard for arborists for sustainable purchasing, responding to a request from many arborists. These firms are experiencing an increased demand for sustainable product, as the government has resolved to source more sustainable. It is also a response to the sector-wide criticism of Greenpeace on the use of harmful chemical crop protection. The standard enforces strict criteria on the use of crop protection and fertilizer. Herein, the standard goes beyond minimal national legal compliance. The standard also requires its participants to formulate a biodiversity plan. However, it needs to be noted that this standard ensures sustainability, not necessarily quality of the product.

The board is not concerned with the formulation of the standard itself. The standard setting is done by a committee of experts that operates across all Groenkeur standards. The committee of experts is supported by technical subcommittees. These consist of specialists, but also the buyers and other stakeholders. They consider whether it meets the demands of the government and the buyers, whether the growers can meet the demands, and whether it is auditable. The RvA ensures that the process is handled in a proper manner. This way it is ensured that the standard is formulated in a credible way with all stakeholders, and that is not for instance formulated only by producers. It should not be possible to buy a label without meeting the claims of that label.

Groenkeur is the standard setting organisation. The certification and accreditation is done by independent third parties, specialised in that field (e.g. Kiwa, TÜV, MPS-ECAS; RvA). Groenkeur does not offer consultancy or collective purchasing etc., but is solely occupied with the formulating and managing of the standards. This does not mean however, that Groenkeur does not maintain relationships with other organisations and firms in the sector.

All certified firm are audited once a year both in field as desk audit. Firms in the process of being certified are audited twice a year, once before and once after harvesting. The use of crop protection is tested via leaf samples (via the same methods used by Greenpeace). The desk audit involves a check of the administration to monitor use of crop protection and fertiliser based on purchasing, use and stock data. There are also requirements regarding how the product is brought to the market; the product needs to be traceable to the customer. A certified product does carry a product label, however, whether the consumer can see this label

depends on the retailers and whether they keep the label on the product or remove it. In principle, the retailer can sell a Groenkeur product as a certified sustainable product.

We strongly support a supply chain approach. A Groenkeur tree is planted by a Groenkeur landscaper. Landscape architects and gardeners are increasingly expected to be Groenkeur certified.

Groenkeur differs from NL Greenlabel and other commercial labels, in that it functions as a quality standard, and not as a marketing tool. When getting certified via NL Greenlabel, you pay a fee, fill out a list of questions, send that to DHV and then you get awarded either label A or label B. That to me sounds very easy.

Groenkeur and Milieukeur are a very similar standard, content wise. They have similar performance requirements. The reason Groenkeur stepped into the market, even though a very similar standard already exists, is the fact that the arborists were not content with Milieukeur. In contrary to Groenkeur, Milieukeur does not promote its standard. So even though they have certified firm and they have been in the market for years, no one requests Milieukeur certified products. Milieukeur's philosophy is that marketing is the participant's task. Groenkeur does attempt to create a market for its label. They certify all supply chain actors from grower to landscape architect/gardener, so the consumer only has to remember one name.

MPS is more or less a registration system (growers can register which products they use on their crops, how much etc.). MPS does award a label to their participants, but they have limited auditing. They do perform audits but only on 5% of the participants per year, whereas Groenkeur audits every firm each year.

Although the product standard has been around for only two years now, we plan to review our standard every few years. We do that in our other standards too. These incorporate ISO standards, and as these are reissued every few years, we also review our standard according to that cycle. Our rule is to update our standards every three years. We incorporate feedback from our participants into these reviews, as this is mandatory by the *Raad van Accreditatie*. This entity performs an audit at Groenkeur once a year, wherein they also check the ability of stakeholders to engage in the standard system. Therefore, we organise stakeholder meetings minimally once a year, to give them the opportunity to participate. This assures that the standard is continuously developing and that the quality improves continuously. This way we make sure the standard stays up-to-date and that it addresses current issues. NGOs have not been part of our stakeholder groups until now, as we previously only focused on the performance of professionals. We might include NGOs in the future in the technical committee of the arboriculture standard, if this proves to be necessary.

The accreditation also ensures impartiality. It requires diversity in all levels of the organisation, from the board to the committees.

ANTON KOOL, PROJECT MANAGER AGROFOOD, SMK – 20-5-15

I work at SMK. This stands for Stichting Milieukeur, but that is not accurate anymore as SMK manages more standards than just Milieukeur. SMK manages standards that ensure the sustainability of products and services. Milieukeur is the main standard we manage. It is a very broad standard: it certifies non-food products, electricity and agro-food products. Among the latter are the horticulture products. Milieukeur offers standards abroad since a few years, mostly in the food sector in South-Africa, Eastern Africa, and Southern Europe. Most new developments, such as the international standards, were set up on request of market parties that desired such a standard.

We offer a standard for what is called the arboriculture, but can be applied to all perennial plants, such as shrubs, bushes and trees, that are grown outside. We are also developing a standard for flower bulbs, which will be published the autumn. We aim at promoting sustainable production methods and to provide assurance that a firm does indeed produce sustainably. The arboriculture standard has been around since about 2000, I think.

Halfway the 90s, Milieukeur was created as an initiative by the Dutch government, to promote sustainable practices in the agricultural sector. At that time we received support from the government, but that has been phased out over time. Now we are predominantly financed by the market, although we do get a small subsidy still. When we develop a standard on request of a firm or organisation, they have to pay a certain contribution to finance the development. The fees we ask our certified firms are proportional to business size. Additionally, the certification body will ask for a fee, but I don't know those fees by heart.

Tuinbranche NL has been working with MPS for a long time, so the relationship is much stronger. They have been working together to find a solution to the current issues with Greenpeace. But I do know that the sector is willing to look beyond MPS, which is where we come in. We are quite well represented in the open cultivation, with the arboriculture products. There are about 50 certified growers, who together manage 1,500 hectare. In the protected cultivation we only have one certified grower, so we only have a very small share in that sector. This is a reflection of the lack of demand for sustainable produced flowers and plants from protected cultivation, in contrary to the open field cultivation where mainly governments demand sustainably produced trees etc.

In general, we aim at firms that are frontrunners. Our standard is quite ambitious, it requires quite some effort to get Milieukeur certified. It is aimed at firms that want to distinguish themselves via sustainability. That is a large difference with MPS. MPS aims to make it possible for most firms to get certified. Another difference is that Milieukeur formulates its criteria based on environmental impacts. We look at the impacts or issues that are experienced by, for instance, water authorities and try to eliminate those impacts/issues with our set criteria. MPS reasons the other way around: they identify the average practice in the sector and then set the bar a little higher and that then becomes the norm. In a way they set a relative performance standard. So if the baseline in the standard changes, the baseline of MPS follows. This also explains why less firms work with Milieukeur, as it is more stringent.

Organic cultivation is more stringent in some criteria (crop protection, fertiliser), but less stringent in others (energy use).

Groenkeur has recently started with a standard for arboriculture products that is almost a copy of the Milieukeur standard. This originates from the discontent of several growers that saw little market for Milieukeur products. They desired more marketing of the Milieukeur standard by SMK, but we don't have budget or people for that; the firms should do this themselves. So they decided to set up a new standard, which became the Groenkeur standard for arboriculture products. This was done without our cooperation. I think this creates an inconvenient situation, because they have added another tree to the forest of standards that already exists, creating confusion and extra costs for the growers.

The Milieukeur standard covers all relevant sustainability themes: crop protection, fertiliser, water, energy use, biodiversity (nature and landscape), labour conditions, and waste and packaging. All themes have corresponding criteria the firm has to meet. For crop protection, the list of allowed substances goes beyond legal compliance. We also put limits on the maximum quantity of active substance in crop protection that can be used per year. The firm has to formulate a cultivation plan that shows the planned amount of crop protection use. Moreover they have to register their purchases and stocks of substances. This is all checked during the audits, combined with an additional residue check on samples. We are an accredited standard, which requires a third party auditing body. In the first few years of certification the firm is audited twice a year: once, in early spring prior to the cultivation, and a second time at the end of summer after cultivation. In spring we check what the firm has planned, and at the end of summer we check if the firm did as planned. If a firm shows no non-conformities several times in a row, the audit frequency is lowered to once a year. Thus, every firm is audited at least once a year.

One requirement to ensure the Milieukeur standard actually says something about the product itself, is that a certified product has to be at the certified firm for most of the growth phase. It can be grown into a seedling elsewhere, but the cultivation into a full grown plant has to occur at the certified firm. When the product, after cultivation, goes to a distribution or processing firm, that firm has to Milieukeur certified as well.

If a firm shows a non-conformity, there is always the chance that this was not by the hand of the firm itself. Often, this is traceable. If the firm does have a proven non-conformity, they have to restore this within a set period of time, often 1 month in case of a major non-conformity (most of the time it is classified as a major non-conformity).

Certified firms can use the Milieukeur label as an eco-label. In this logo they can use their own personal certification number, for traceability. On the website all certified firms are mentioned, so if a firm is not on the website, it is not certified. We do not specifically mention non-conformities on the website.

SMK is the standard setting organisation, we manage the standard. We have a committee of experts, consisting of people independent of SMK, which is responsible for the content of the standard. It consists of people from the sector, such as growers, but also researchers and people from the water authorities, government and NGOs. Together they carry the final responsibility for the content of the standard. If we see a new development, my colleagues and I propose a change to committee of experts, who then have to approve the proposed change. In general, we update the standard every year. In the process of this update, a committee is involved that is made up of people using the standard, NGOs, government and research. Together we map the current developments in the sector and consider what changes need to be made. Based on those discussions we develop a concept of the improved standard that is then subjected to a public screening. The feedback of the screening is then discussed with the committee of experts which results in the revised standard. This way we also ensure impartiality and try to find a balance between the stringency and the feasibility of the criteria.

As a foundation SMK has a supervisory board, but concerning the Milieukeur standard the committee of experts is the operational decision making body.

REMCO JANSEN, RETAIL MANAGER, MPS & FFP – 31-3-15

MPS is a foundation and has been established 20 years ago. It has its origin within the sector, from the growers, as a registration method to show this is how we are improving our processes, as a way of improving the sector's image. Later the standards were added, both for producers and for traders. The registration method (MPS-ABC) is still the basis, what makes MPS unique, together with the trader standard. They aim at continuous improvement of sustainability in the sector.

MPS has its own auditing organisation (MPS-ECAS), a small consultancy line (MPS-HCS), and activities abroad (30-35 countries). MPS has four standards: MPS-ABC, MPS-GAP ('Good Agricultural Practices', standard for hygienic, healthy and safe production), MPS-SQ ('Socially Qualified', social standard) for growers, and Florimark for traders.

MPS-ABC is the biggest standard in horticulture. We cooperate with one of the largest standards worldwide, GLOBALG.A.P. MPS-ABC is always the basis; if you want to do MPS-GAP or MPS-SQ then you have to do MPS-ABC too. I estimate 3,100 growers (34,000 ha/4,600 production locations), participate in MPS-ABC, 2100 in the Netherlands, 500-600 abroad in Europe, 500-600 outside Europe. In greenhouses, 80% works with MPS, in bulbs and arboriculture this is much lower (about 30%). About a third of the global horticultural production goes via Floraholland or which about 80% is MPS. They communicate MPS more or less as a label in the auctioning.

About 100 traders are certified with the Florimark label. We estimate 450 firms have additional certification, of which 350 MPS-GAP and 200 MPS-SQ. We expect that this will increase strongly in the future. MPS-SQ is benchmarked to the BSCI label and mostly used in risk countries.

MPS-ABC is actually not a standard, it is a registration method. The audits occur afterwards, whereas with certification you have to meet requirements and get audited before you get certified. Moreover, with certification you can only meet the requirements or not, whereas in MPS-ABC we use a scorecard system. The grower has to register every four weeks what he grows where, in what quantities and when, and what he uses in fertiliser, water, crop protection, energy. Waste is registered via a questionnaire at the start of the certification process. There are also about 200 firms that register every day, we expect that to increase in the future, seeing the current developments and trends, as it is more accurate and detailed. MPS-GAP and MPS-SQ is more or less the same: you get a list of requirements you have to implement, which takes a few months. There is some overlap between MPS-GAP and MPS-SQ, as MPS-GAP also contains a paragraph on social topics.

MPS is financed by fees paid by the participants. MPS-ABC fees consist of a country fee (€670 in the NL) and an internationally aligned hectare fee. The latter is based on the type of growth (under glass or open field) and number of hectares. Fees for MPS-GAP and MPS-SQ are determined case by case. MPS provides support and service for their participants to help them meet the requirements and how to use the (digital) registration system, even abroad. This does however increase the costs for the participant.

MPS is purely business-to-business, we are not a consumer label. However, participants are allowed to use the MPS label in consumer communication. We don't market our label to consumers. Most retailers already do that themselves.

FFP is a consumer label. That used to be an independent label. But they could not manage with the limited resources they had, so they semi-merged with MPS since 2013. MPS does the marketing for FFP, but FFP still owns their label. However, FFP does require MPS certification from their participants.

As a foundation, we do not aim for profit and strive to be independent. We work together with everyone who wants, we do not discriminate. We also consult other certification organisations; sometimes that results in something, sometimes it doesn't. MPS-ABC can barely be compared to other standards, as it is unique. For MPS-GAP this is easier. People should compare standards like Milieukeur with MPS-GAP, not MPS-ABC. However, Milieukeur is very small, about 40 tree nurseries, and they only operate in the Netherlands. Groenkeur is a copy-paste of Milieukeur. MPS is internationally accepted, which is important as Germany is a large customer. Horticulture export from the Netherlands is mostly limited to Europe, because it is too expensive to export to i.e. the U.S. The only exception are bulbs.

As MPS-GAP and MPS-SQ are benchmarked on other standards, the improvement processes are linked to those of these standards. Currently, MPS is developing a new version of the MPS-ABC system. They are putting the bar higher, so requiring better practices for certification.

We are currently working with GSCP. In choosing standards to benchmark ours to, we look with scrutiny at the quality of those standards. We also work together with other stakeholders in initiatives like the Floriculture Sustainability Initiative. Of course, we have massive amounts of data on the use of substances on farms, so we assure that this data is safe.

For MPS-ABC, MPS-GAP and MPS-SQ we do our own auditing, with MPS-ECAS. We expect that to change in the future to more local partners. MPS-SQ is audited every year, and the certificate is valid for 3 years, so one initial audit and two check-ups. A certification contract with MPS-GAP also lasts for 3 years, but it is valid for only one year so you need to get audited in advance to assure you get recertified before your certificate expires. With MPS-GAP 10% of the participants get an unannounced extra audit. Of the MPS-ABC participants 50% is audited

on site, on themes or full. The other half is tested via samples. Also, we have some additional desktop checks. The new Product Proof label and other additional requests may ask for more monitoring, but this is the basics

The foundation has a board that determines the general policy and strategy of MPS. Sector representatives like LTO are also part of the board. Content-wise, we have a committee of experts that determine the content of the standard. This committee is made up of representatives of the sector, such as growers. We formulate changes, pass that by the committee and the board and then it is policy. A point of critique we hear is that we are too focussed on the Dutch market, and I can see why. We only have one international board member. Our main focus is still to improve the position and sustainability of the Netherlands. We should have more active international members and representatives.

We have complaint forms, they often go via ECAS. And we have the local representatives to check what happens abroad.

ECAS has a committee of stakeholders that advises them on the audit procedures. MPS-ECAS, MPS-ABC and MPS-GAP are also accredited via the RvA. Benchmarking on international standards and ITC Standards Map also assure impartiality. The RvA demands to keep the consultancy, auditing and standard setting parts of MPS separate. Although MPS is sometimes criticised for doing their own audits, information of MPS-ECAS is completely inaccessible to the other MPS divisions.

MPS is not obligatory in the sector, but there are about 8-10 retailers that do demand MPS certification from their suppliers. Examples are Jumbo, AH, Rewe, IKEA, Aldi, Intratuin, Plantagen, Blume 2000, and some smaller. Retailers like supermarkets, for whom plants are a very small fraction of the revenue, just give their suppliers their demands, quite unilateral. They do not cooperate with growers to improve practices or determine the right standard. Some retailers like IKEA have a direct relationship to their supplier, using the preferred supplier method. However, the garden centres rely on the sales of plants, and therefore some have their own purchasing centre. So they directly buy from the growers, and have a stronger contact with their growers.

GERT OLBERTIJN, ACCOUNT MANAGER, NL GREENLABEL – 13-5-15

NL Greenlabel is set up by Nico Wissing and Lodewijk Hoekstra. Nico Wissing is a landscape architect who has a vision for sustainability in the gardening sector. He saw how we now source our products from China, while we can get them more locally, and we are paving our gardens shut. He wanted to change that. Lodewijk shared that ambition. NL Greenlabel got launched around the Floriade in 2012 in Venlo.

We want to promote sustainability in the outdoor space by sustainable material usage. We don't do this via certification, but we provide firms with a sustainability passport.

Royal Haskoning DHV got involved to develop a solid method to determine the sustainability impact of a product. This became a light version of the life cycle assessment. Herein we look at production but also at origin, transport, energy use, waste etc. This results in a scorecard similar to the energy label, but then focusing on all aspects of sustainability.

We started with the sustainable garden/outdoor space products. That became quite popular. Then we started with assessing the sustainability of gardens/outdoor spaces. We focus on both living and non-living materials. Until now we have mostly assessed non-living materials, but we are working on a model for living materials. We have some overlap with Groenkeur. But there are also criteria we differ on that they are considering to implement as well. So you can see that the available options are slowly growing towards each other. The best approach is maybe what we did with the non-living product label: we don't disapprove of the use of other labels, but they must meet our vision of a sustainable product. If not, they are considered a part of the total requirements. So if they meet the Milieukeur label for example, then the product scores well on a part of the scorecard, but has to show additional performance to score well on all. The idea behind NL Greenlabel could

definitely be considered similar to FFP, as a standard above other standards. I believe there are enough standards, and we should add something new. We could combine the existing standards to get the completest view possible.

For non-living materials, I think you should see NL Greenlabel as a sort of top label that enfolds various standards. The complaint was that there were too many standards that it became a maze. We saw that all those labels only covered a part of the total picture and we believe that the consumer is sick of that, because they don't get to see the entire picture. I think that you should first take all the important aspects and then pass judgement. That is what we do.

Our goal is for consumers to be able to pick more sustainable products and to stimulate the producers to continuously improve their products. We aim at all firms that produce and use products to be used in the outside space. This can be large firms that have more impact, and benefit from using NL Greenlabel. However, NL Greenlabel is also accessible for small firms. We ask a fee for becoming a partner, the exact price is tailored to the firm and the level of the partnership. We also ask a fee €1000 for each label.

Currently about 80 firms have their products labelled (the partners) and about 25-30 firms use the labelled products (so the landscape architects etc.). All firms using NL Greenlabel can decide for themselves whether and how they use NL Greenlabel as an eco-label.

We have formulated several criteria: where does the material come from, how was it transported, of what materials is the product made up (that also addresses energy use in production), the durability of the product, what is the product's waste impact, and what energy does it use. We don't set a minimal performance requirement; but if the performance is low you will get a low score. The fact that the product is assessed is more important than its score; if a consumer in the store wants to buy a product he or she at least knows the impact of a product, regardless of how high or low the impact is.

Up until now we have mostly seen frontrunner firms that want to get labelled. Some firms that got a C or D that got certified were reluctant to use that result for marketing purposes, while I think that a C is not bad. Currently, we compare product categories (such as stone and concrete slabs for paving) to a large extent, and not so much similar products on a very detailed scale (stone from company A or company B). If a firm has a G label, they do have a lot of improvements to make. Firms that have very unsustainable practices (such as child labour or release of toxic substances etc.) are excluded from participating in the label.

The assessment process is as follows. A firm approaches NL Greenlabel to become partner. This costs €1000. NL Greenlabel checks whether the firm meets the basic requirements. If the firm then wants to get products assessed, they make an appointment with Royal Haskoning DHV (and in the future me). Every product that gets assessed results in additional fees. Previously, the firms could download the assessment form and then filled it out. From June, I will fill out the form, together with the firm at location, combined with a check at the firm. So I function as the auditing body. I then send the form to someone at Royal Haskoning DHV. This way my assessment is checked by a second person, like an independent second opinion. We then communicate the score with NL Greenlabel who then hands out the scorecard. The scorecard is valid for three years, but every year the firm has to update its numbers to account for changes in production processes, knowledge on impacts etc.

Nico and Lodewijk, as founding fathers, want to keep everything 'light'. So, when we start using accredited auditing firms, a part of the firms will quit as they don't want to pay for the auditing costs. So, at this time we want to keep it simple. Now, we still have an oversight, of who says what. The control by my colleague at RHDHV provides assurance, as well as the involvement of Stichting Buitenleven, that acts as an independent oversight body that monitors the certification/assessment process. We are still trying to figure out how this should work, but the idea is that they should do regular checks on the assessments via sampling. We let the firms sign a truthfulness declaration, which is of course based on trust. But if we find out that the firm has

cheated on the scores, they are immediately expelled. We work based on trust and shared vision. So we work with firms that believe in sustainability. If we are at a firm and we see that they are just in it for the scorecard and not for the ultimate goal of becoming more sustainable than we might decide not to give out the scorecard. Therefore, we aim at frontrunners, but also firms that are not innovative per se, but just have a good sustainable product.

Of course, we are now in a process. Becoming more sustainable takes time. We want firms to start questioning their product, that it is not assumed to be good. We hope that by using the label, firms get a boost and their competitors are tempted to also improve their products and join us. We want to stimulate improvement, not pushing others out of the market. The focus is on brand awareness and conveying our message. I realise this is quite idealistic and that firms have to get a (financial) benefit from participating in NL Greenlabel.

I hope NGOs and society will keep pressuring industries to sustain their claims, and to question the practices used in sectors. In my opinion NL Greenlabel should only accept firms that have sustainability in their 'blood'. For instance, pesticide producers are not accepted to participate. In principle, everyone is welcome, as long as they want to improve their practices to become more sustainable and want to offer a good product.

Royal Haskoning DHV together with Nico and Lodewijk has made a list of the basic criteria an assessment framework should encompass. We have discussed this list with the TU Delft, the WUR, the VHG and more. The national Dutch government has approved the method.

How we operationalised the criteria depends on the criterion. For instance, transport is easy: that can be expressed in quantities of CO₂; same goes for certain materials used. For crop protection we say no chemicals is the highest score. We also look at how the business is run: if your product is good, but your firm is a mess, that is in our eyes also bad. How the scores are determined is a complex model that takes the form of an Excel sheet. The performance on all the criteria leads to a score. This scorecard is given to the firms, accompanied by recommendations on how they can improve their score.

As an example we assessed a firm that made its steel products in India, while they could easily do this closer to home. They switched, what increased their costs by a few per cent, but increased their score.

Compared to the FSC label, we have a stronger focus on locally produced products, as we look at transport. We look at a broader perspective.

We continuously update the scoremodel, based among others on the Ecoinvent database and on new knowledge development. We have committee of experts: for all criteria we use we have an expert on that committee. We don't have a stakeholder representation committee, but when we formulated NL Greenlabel we did consult stakeholders, such as Natuur & Milieu and Milieu Centraal.

The strength of the label is that we have actors of the entire supply chain involved.

For our living products label we are still thinking out the details. Nico would like to be chemical free, but we do accept firms that use chemicals currently, as long as it is not released into the environment. We want to avoid chemical leaching into the ground at all costs. We have to critically think of what is feasible and desirable. We still have to find the optimal balance between low environmental impact and feasibility.

DEPUTY DIRECTOR FSC - 27-5-15

You have to distinguish between FSC Nederland and FSC International. FSC International is the owner and manager of the standards. FSC Nederland is the official representative of FSC in the Netherlands, but we are mostly concerned with business/market development for FSC wood. We are not personally active with certification; that is of course part of the system: FSC is the manager of the standard, and third parties, like SGS, Control Union etc. are responsible for the certification.

FSC was founded in 1993-1994, in the same period as the Earth Summit in 1992. It was founded as result of discontent about the lack of effective public policy on forest protection. FSC is a private initiative of several organisations, firms, unions. Secondly, several standards entered the market at that time, aimed at sustainable forest management, like Rainforest Alliance. FSC acted as an umbrella organisation for those standards at that time.

FSC Nederland was founded in 1999. We try to create a market for FSC certified wood, and from the early stages the retail, including the garden centres have been included in that effort. A few years ago we started to map the quantities of certified wood (FSC & PEFC) and uncertified wood used in all sectors, to see how well they are actually doing in selling certified wood. Based on that we can make agreements and see where the improvements can be made. In hardware shops, about 70-99% of the wood is certified wood. For the garden centres we don't know these numbers. We really want them to get involved, but we can see some resistance from this sector. This is partially due to historic criticism by NGOs and the franchise system. However, recently the market leader, Intratuin, has taken steps as a result of new management. This will hopefully ignite some change. The 40% of the total amount of wood sold in the Netherlands is FSC certified. PEFC and FSC together account for about 75-80% of the total amount of wood sold.

PEFC and FSC do not mutually endorse each other's standard. You can mix PEFC and FSC, for the FSC mixed wood standard, but we do not directly accept PEFC certified wood as FSC. PEFC wood needs to meet certain criteria to be FSC certified. When it comes to the actual standard mixing is complex, but in our agreements with market actors, we specify sustainable wood as meeting the criteria of TEPAK, so FSC or PEFC (except for one Malaysian member).

FSC has their principles and criteria that are applicable worldwide. We are quite prescriptive on what sustainable forest management should look like. This means that the requirements for FSC certification are more or less the same worldwide, and the quality of the standards the same everywhere. That is the big difference with PEFC, which has different standards worldwide, and thus differences in quality.

FSC aims at hardware shops, garden centres, the construction sector, clients especially the government, paper and cardboard industry (more specifically packaging), and obviously the wood sector, so carpentry and timber industry.

FSC has two standards more or less. One aims at forest owners and managers worldwide and the other, the Chain of Custody, applies to all firms that work with wood. The latter has the consequence that it is not always properly compatible with the specific sector it applies to. We have that latter standard so that a consumer at the end of the chain can assume with confidence that the wood actually meets the FSC criteria.

The forest management standard is all-inclusive: it addresses environmental, social and economic topics. In general, the standard is based on ten principles. The first principle states that the forest management should comply with all relevant national and international legislation. The second principle covers labour conditions and the rights of employees. Principle three covers indigenous people, principle four covers local communities. Principle five addresses the economic benefits of the forest, six addresses environment and biodiversity. Principle seven covers the management plan and eight covers monitoring. Principle nine is about conservation value. Ten is a sort of remainder of the principles that have not been covered by the former nine. Seven, eight, and one are very specific, the rest tackled broadly all that falls under environment, social and economic sustainability. All ten principles are elaborated upon with specific, often quantified, indicators to specify the requirements for certified firms. In total there are about 250 indicators.

Certified firms pay an annual accreditation fee, which can be found on the website. We differentiate between COC and forest management standards, COC is relatively simple whereas forest management is relatively more difficult and thus more expensive. We charge for total wood volumes, so we charge proportional to revenue.

We don't differentiate between countries. These fees exclude the costs made for auditing and changes to be made at the firm to meet the standard.

FSC has published its new principles and criteria two years ago. That process took several years, because it considered revisions of the basic document or bible, so to say, of FSC. Many stakeholders are involved in this process and several consultations occur. Consultation is a key part of the process. In case of the COC standard; worldwide there are 30,000 certified firms; all these firms are considered stakeholders and thus have an opinion on how the standard should change. FSC is an association, so the general assembly of members is the higher decision making body. They convene every three years. No policy is formulated during the assembly, but the members can voice their opinions via resolution. This can concern any topic, including the content of the standard. This is where feedback or suggestions for change can be made. Additionally, several NGOs are members of FSC, so they can participate in the general assembly.

FSC works with a so-called three chamber approach: we have an economic, environmental and social chamber. The decision making process is so, that every resolution has to have a majority vote in each chamber. So, all interests are weighed equally.

We follow the ISEAL standard for the formulation of our standard. We are assessed by ISEAL and additionally our auditing bodies are all accredited by accreditation services international (ASI). The benefit of ASI is that they have specific knowledge on forest management.

FSC has a complaint system. Most complaints concern FSC certified firms.

For impartiality in the policy development, we have the three chamber system. When a group of experts or work group get together, a representative of the three chambers has to be present. Certification is in general a form of impartiality assurance, because you let a third party check whether a firm complies with a standard. Although, an auditing body and certified firm has a customer client relationship, but the standard setting organisation assigns non-conformities if necessary.

FSC has changed the world of forest management: historically, managers decided themselves what good practices were; now, NGOs like Greenpeace challenge them by asking what exactly we should consider sustainable forest management.

FSC Nederland however is a foundation, not an association. Other FSC locations and FSC international is similar to other associations. Their board is made up of elected members of the association and are accountable to the members.

The certified firms are audited every year for both standards. In general, they are announced. The management certified firms are required to do a stakeholder inquiry for feedback in advance. They have to have a list of stakeholders for all three pillars that are relevant to the area. Responses to the inquiry are not obligatory. Each firm is subjected to a field and a desk audit. An audit in a large high risk firm will last longer than smaller, low risk firms. Depending on the firm, experts on for instance social conditions are involved in the audit.

An audit body can note an observation. This is a slight non-conformity or situation that is not entirely as it should be. An observation does not have any consequences, unless the same observation is made the following year. Then it becomes a minor non-conformity. A firm needs to resolve this within a year, or it turns into a major non-compliance. A major non-compliance must be solved within three months or the certification is revoked. A certification is also revoked if a firm has five or more major non-compliances.

We have an online database with all certified firms info.fsc.org. In that database you cannot find whether a firm is suspended or terminated, but it does contain publicly available audit summaries for all FM firms. This also mentioned how firms process their observations or non-conformities.

COORDINATOR POLICY AND REGISTRATION – PEFC NL – 12-5-15

PEFC is an international organisation. PEFL NL is a member of that organisation. We are the contact for firms in the Netherlands who work with the standard, and we hope to also become the contact for forest owners. PEFC NL was started in 2008. The international standard was set up in 1999.

FSC was founded in 1994 because there were concerns about forest degradation and it was difficult to tackle this via legislation. PEFC was set up in Europe; forest owners and managers also wanted to show that they were sustainable, but they thought FSC was unsuitable, as it focused mostly on the tropics and large concession holders. In 2005 PEFC became an umbrella organisation for national standards.

There used to be many more standards than these two, but this reduced over time, largely because they became a member of PEFC.

There are many similarities between FSC and PEFC. There are some differences, such as that PEFC was set up in Europe for smallholders, but I don't know if that difference still exists. The big difference is that PEFC is an umbrella organisation that endorses many national standards. It is very bottom-up, whereas FSC is top-down where they reason from an international standard that applies to all. PEFC's bottom up approach ensures that national differences are taken into account. Also, FSC works with ISEAL, whereas PEFC works with ISO standards. PEFC communicates FSC products as accepted by PEFC, whereas FSC is not that easy.

I don't know the quantity of PEFC wood in the gardening sector. I do think PEFC wood is used in the sector, also because there is a large quantity of wood with the PEFC label, especially softwood. There are definitely firms that sell PEFC Chain of Custody products such as garden furniture. I suspect the visibility of PEFC in the Netherlands is lower than that of FSC. The total amount of certified wood is definitely increasing in the Netherlands, (which is confirmed by market studies commissioned by the Dutch government and performed by the Probos Foundation) as well as the demand for certified wood.

Our mission, in one sentence, is that people around the world manage forests sustainably. We aim at firms and forest owners. Firms as a concept is very broad: it encompasses everyone that does something with forest products.

PEFC has an international general framework, the Sustainability Benchmark, and the actual, national, standards. This system is this way, because there are always differences in national legislation; also, there are differences in ecosystems. You can account for those differences in the national standards. But PEFC always takes the highest standard: its own lines or that of the national legislation. So if a country hasn't ratified one or more fundamental ILO standards, the forest owner's forest management in that country still has to be in compliance with such fundamental ILO standards to get the PEFC label.

PEFC is a non-profit organisation and is financed by the members. The most important source of income for PEFC is the fees charged to the firms in the supply chain that use the Chain of Custody standard. The fees are in proportion to the size of the firm.

PEFC NL facilitates the process of standard formulation. We have gathered national stakeholder groups (national forest management organisation, labour unions, NGOs, recreation organisations) and divided them over several groups. Every group has one vote in the process of the formulation of the standard. When the standard is formulated, the international process starts.

The certified firms are always allowed to give us feedback and we are obliged to have a complaint procedure in place. I can confidently state that the international standard kept on developing and perfecting itself over the years. Experience is very important in this process.

PEFC manages the standard, but we don't execute the monitoring and certification process. An accredited certification body does this for us. The accreditation is done by an internationally accepted accreditation bureau, so it must be a member of IAF. The firms have to organise the audits themselves. All firms are audited in field every year, in an unannounced audit. Group certified firms are sample audited, but every firm has the same chance of being audited every year.

Non-compliance is based on procedures in our standard, ISO procedures and procedures of the certification body. If a forest owner doesn't comply with the standard, the sanction depends on the severity of the non-compliance. In the case of a minor non-conformity, the firm has a year to solve the non-conformity. In case of a major non-conformity, he has to solve it within three months. If he/she fails to do so, the certification is revoked. All certified firms are in an international database that is accessible online, to facilitate project managers or buyers to identify sustainable wood suppliers.

SFI is a national standard that is endorsed by PEFC, but only for the forest owners. The Chain of Custody certificate of SFI is not endorsed by PEFC.

There is always the chance that a product in a garden centre is in fact certified wood, but that it cannot bear the label, as one or more firms in the supply chain didn't have the Chain of Custody certificate. I don't know anything about quantities of wooden products in garden centres that have our label, but I do know that there are firms in the Netherlands that have the Chain of Custody label that produce garden products. I suspect that the frontrunners will be in the product sectors where wood is the main material, because the wood is very visible. I would expect organisations selling garden furniture and fencing etc. to pay quite some attention to certification, because it is a product that is very visible for end-users (for example timber used for transport like pallets are not that visible) and NGOs or competent authorities of the EU Timber Regulation are especially alert on the trade of tropical hard wood, because it originates from countries where there is a high risk of illegal timber harvest. I don't think that PEFC products necessarily always sell for a higher price than normal wood. I believe PEFC certification provides firms and forest owners a license to operate.

APPENDIX F – QUESTIONNAIRE ORGANIC HORTICULTURE

Aim of the interview: gaining information on the role organic horticulture plays in the transition to a more sustainable gardening sector.

BACKGROUND OF THE STANDARD

Could you please tell me more about the history of organic horticulture? When was it founded by whom and why?

Information on the regulations concerning organic cultivation can be found on our information leaflet “Biologische teelt van gewassen”, www.skal.nl “over ons”/ “publicaties”. The first European regulation for organic cultivation was formulated in 1991.

What is the relationship of SKAL with Tuinbranche NL?

We are a monitoring organisation.

How many firms are produce organic in the Netherlands and what type of products are we then talking about?

We are purely a monitoring organisation and do not have statistical information to our disposal. I would refer you to the LEI.

THE STANDARD

What is the mission of the standard? What is the target user of the standard? Which firms do you aim at?

All organic agricultural producers, and firms that process/distribute/store/import organic agricultural products.

If I am correct, organic agriculture is based on European regulations (so the EU is the standard setting organisation) and SKAL performs the audits and monitoring?

That is correct.

How is SKAL financed?

The registered organic firms pay fees for monitoring and certification.

What are the costs of getting the standard certified? Are the fees proportional to firm size or uniform?

See “tarieven” on www.skal.nl.

Does the standard have an eco-label?

Standard-setting

How was the standard and its criteria formulated?

This was done on the level of the EU. SKAL was not involved in this process.

How are the interests of all the stakeholders taken into account? Is their consultation of firms or NGOs?

The organic sector has various representatives, e.g. Bionext and het Biohuis.

How is the standard different from the other standards in the sector?

See leaflet Biologische teelt van gewassen. I am not familiar with other standards.

Are there regular moments of evaluation? Are there any other mechanisms to ensure continuous improvement?

SKAL has a quality system, which implements improvements continuously as a result of internal audits. SKAL is not involved in the formulation of EU regulations .

LEGITIMACY

How does the standard ensure impartiality? Who are in the daily board etc.?

SKAL is accredited by the RvA. For the composition of our board see www.skal.nl, "over ons".

Who performs the auditing and monitoring? What does the auditing process entail? How often are the firms audited?

The inspectors of SKAL perform the audits. These can go differently. Each location is audited at least one a year. Additionally, there is an unannounced audit.

How do deal with non-compliance?

See www.skal.nl, "inspecties" / "sancties".

How do you deal with input from the certified firms? How do you process complaints? And how do you deal with current topics and developments in the sector? Are the regulations regularly evaluated?

I don't understand the first and the third question. We always process complaints, if needed by our attorney.

We are not involved in the formulation of EU regulations.

APPENDIX G – INTERVIEW GUIDELINES SECTOR

Aim of this conversation: getting to know more about the practices concerning sustainable production and sourcing of plants and (garden)wood. [insert explanation thesis].

RETAIL

Could you describe the company structure for me?

What is happening in your sector concerning sustainability?

What is your company's policy on sustainability?

How do you approach issues like sustainability in your firm?

Do your suppliers of horticulture products have to meet certain standards? And for wooden products?

Are you familiar with the following standards:

- Groenkeur
- Milieukeur
- MPS
 - ABC
 - GAP
 - SQ
 - Fair Flowers Fair Plants
- NL Greenlabel
- Organic
- PEFC
- FSC

Would you be interested in using standards in the future/do you think your current policy will stay the same?

What are in your opinion important characteristics of a high quality private sustainability standards?

GROWERS

Could you describe the company for me?

Do you grow everything yourself or do you source certain products elsewhere? If so, where from?

Are the products you produce certified? If so, with which standard?

Are the products you source elsewhere certified?

Are you familiar with the following standards:

- Groenkeur
- Milieukeur
- MPS
 - ABC
 - GAP
 - SQ
 - Fair Flowers Fair Plants
- NL Greenlabel
- Organic
- PEFC
- FSC

Do you market your product explicitly as sustainable?

Do your customers demand certain standards from your firm?

How do you experience working with the standards you use? What are their strengths and weaknesses?

Which of the standards do you prefer working with?

What are in your opinion important characteristics of private sustainability standards?

APPENDIX H – TRANSCRIPTS INTERVIEWS SECTOR

DIRECTOR - ARIE BOUMAN – 19-3-15

Arie Bouman consists of two separate firms: Arie Bouman Tuinplanten and Arie Bouman Kwekerij. The former is a wholesales and distribution company, selling various types of plants to retailers. We purchase plants from growers, process and distribute them into fitting volumes. Eventually we offer a total delivery of a combination of plants to retailers. We offer 10,000 different plants. The latter is a growing firm of roses.

The plants we grow ourselves are MPS-A certified since two years. I think it is important to register what you are doing. It is quite difficult though, you have to find the systems that fit your company. There is some overlap. To properly follow MPS, that needs attention and time. Also, some of the forms of registration do not properly express the real world situation. The problem with MPS is that it is mostly just the registration of products used, and not a guarantee. There is a minimal monitoring of the actual practices.

We do not demand our suppliers to be certified, but we do recommend them to get certified. Most of the plants we work with are not dealing with the auction (Floraholland), so MPS is not particularly important. Some suppliers are certified, some are not.

Retailers are obviously demand to not use illegal substances. So do we. The import of crops makes it difficult to assure that these substances have not been used on the plants as other countries have different legislation towards these substances.

In the Netherlands we produce a lot of plants from seedling to full-grown plant. However, the growth of the plants is often exported to for instance Israel. We import about 10-15% grown plants, which becomes about 20-30% if including seedlings. But it differs throughout the sector.

Greenpeace measures substance use in thousandths, whereas Dutch legislation is expressed in one decimal. So there is a discrepancy. Another fact to consider is that in the legal substances, a distinction can be made between red and green substances. And although a green substance might be less harmful to the environment, if you have to use it four times, then it is possibly even more harmful in the long run, than the red, more harmful, substance, that you only need to use once.

We must consider that we cannot go without crop protection, and that it takes time to change practices.

We do not use an eco-label. We do aim to become more sustainable, but if you claim to be sustainable you have to back that up with real improvements.

An ideal standard has a lower pressure to register every single thing, while having more emphasis on monitoring and assurance. This provides certainty and avoids evasion the rules. This is what you see happening to organic product at the moment, as a result of an increased demand.

I do think it is good that the sector has stated to move in the right direction, even though it is forced.

The customer incentive to buy is still dominantly driven by price.

ACCOUNT MANAGER – GRIFFIOEN WASSENAAR – 30-4-2015

The company was founded in 1923. We have three lines of business. We grow plants, around a few million, depending the behaviour of the market (so we do not produce limitless, but in response to demand). We are supplier of plants to garden centres in North-Western Europe (Scandinavia, Germany, Benelux). We deliver entire concepts, so not just the plants, but an entire sales package with point-of-sale materials. Lastly, we have

the public green spaces business. We offer a fixed plants concept, Green to Colour, to public bodies for parks etc. These plants are low in maintenance etc.

We grow most of our products ourselves. What we don't produce ourselves is produced by two contract producers. They produce specifically for us. We buy our seedlings from two firms, and then grow them into actual plants.

We are MPS-A certified, and we will apply for MPS+ when it is issued, because we meet most of the new criteria already. We are also NL Greenlabel B certified. We might consider Groenkeur when it will incorporate the new ISO standard. Currently, there are some criteria in the Groenkeur standard that are impossible to meet in practice. Groenkeur has our preference, besides MPS, because we can also use it for our public green spaces business.

The problem is that our customers ask us to produce a certain selection of plants. The quantities are not specified, so it is a very unpredictable business. This means that we have to stay flexible. By certifying our products, we risk not being able to source enough, certified, seedlings and thus, not being able to deliver our customer the right plants at the right time. So we might need to source elsewhere, with firms that might not meet the standard. And I do not believe in window dressing, so I want to meet the standard 100%.

The problem with MPS is that there is very little monitoring. MPS-A is workable, but its monitoring is weak. Basically, the growers monitor their own work. It is very easy to trick the system and avoid compliance. If you don't write something down, no one will notice. I would prefer a standard that performs several unannounced audits a year. We do give regular feedback to MPS and I believe that this feedback is used.

We only have the B-label with NL Greenlabel, because to get the A-label, we have to meet criteria that with closer inspection are not very sustainable. We would have to heat our greenhouses with wood chips, which need to be imported from Canada, for example. I have my doubts about NL Greenlabel. They are getting quite commercial and non-transparent. What I don't like about NL Greenlabel, and some other standards, is that they are aggressively marketed to the point where you feel like you are obliged to get certified, but if you critically read the standard, you see that it is impractical and not realistic. It feels like window dressing.

MPS-GAP is too much in my opinion, as far as I know it is also largely focused on food. I don't know MPS-SQ.

Organic is fine, but from a business perspective it is getting really complicated. There is a high demand, but only for certain products. Others are experiencing market saturation. Moreover, the yield of an organic production is much lower. So the prices have to go up to make the same revenue, and no one wants to buy your product for that price.

I know Milieukeur, but I cannot meet all the criteria.

From next years both our suppliers have to be MPS-A certified, and of course the focus is also on crop protection.

We perform above compliance tasks such as recycling of our plant pots, especially in Scandinavia. But these processes are not covered by any standard. This is why I prefer a standard such as ISO that looks at risks, because it sees what your impact on the market. We, growers, do want to be clean and sustainable, but our crops are our capital so it has to be protected. It is impossible to use solely natural processes, in a sector that is not natural to begin with.

We market our products as durable, which is also a form of sustainable. This reduces the amount of peat and plastic used. We also try to reduce the use of peat in general, replacing it with coconut. We use organic fertiliser, not artificial. We use the clippings of the mowing as mulch for nutrients for the plants. This means we

only have to apply fertiliser once a year. We don't use an eco-label. We also try to match the plant with the environment, not only aesthetically, but also suitability.

This year, we got the request from abroad, Scandinavia, to get certified (MPS-A). The standards in the Netherlands are one of the strictest, except for the UK. Intratuin has also given us a deadline for the UITFASEREN of certain products. Intratuin can be considered a benchmark for sustainable sourcing; if you mention you supply to Intratuin, it is internationally understood you meet the necessary standards.

I know that producers that produce according to the Milieukeur standard, often also sell plants from other producers that do not use this standard, as Milieukeur. That is what I call window dressing. It is understandable from the firm side, as they cannot deliver if they do not source their products from other firms every now and then, but I would then choose to not get certified at all.

I want a standard that monitors frequently, that is set up from the point of view of both the customer and the supplier and give them both the opportunity to look at the process transparently. The customer should know that the supplier is checked unannounced; the supplier has to be able to work with the standard in the supply chain. I object to incorporating unrealistic demand in a standard. Content wise, I think that it should contain a ban on finite substances, like peat. Incorporate a recycle system for the plastic plant pots. Only use curative crop protection, not preventive. Increase the monitoring of the supply chain, to clarify what comes from where (which is difficult with the variation in standards throughout Europe. So, like Intratuin we should only allow products that are allowed in the Netherlands). And of course it should be workable and concise. Otherwise no one will comply properly.

PR/COMMUNICATIONS ADVISOR - INTRATUIN – 9-4-15

Intratuin works as a franchiser. This means we have about 40 franchise holders with their own opinion. Intratuin is a green company, we have a green image and we thought we were already doing quite well; most of our suppliers were MPS-A certified. So we were negatively surprised by Greenpeace. Where we normally get about 40 e-mails a day we were now confronted with about a 1000. So it was quite a shock.

This was a large incentive to change. We now realize that although we are already doing well, we can and need to do much better still. We first identified what we were doing already, to see what we still need to do. Low hanging fruit first. For example, FSC certified wood; we are already offering a lot of certified wood. We want to have 95% of our products certified in the future. Herein the focus is on the larger products; it is difficult and less relevant to certify the wood on a handle on a BBQ. This is largely from a reputation point of view. On the other hand we are approaching it from a larger point of view: what can we address when? We have so many different products that it is a difficult question to determine where we should start.

So I organised a brainstorm session where I asked the question what should be our priorities? Now I am trying to set goals and deadlines for the goals, with our Green Team. These are multidisciplinary teams, where all stakeholders are represented, who are responsible for the implementation.

Currently, we do not have strong demands regarding certification of our suppliers. We are planning to change that. Until now we based a lot on trust, as with MPS, but that has cost us. So we are now more actively setting purchasing requirements on social and environmental topics. We need to get a product guarantee, like with FSC, on where something comes from and the life cycle of a product.

We have our own direct import, from risk countries such as China and Vietnam etc. So it is very important to set clear demands in that direction.

We sell products that are MPS-ABC, MPS-GAP, FFP, Groenkeur and Milieukeur certified. Only some of our herbs are organic. I haven't heard about NL Greenlabel. PEFC and SFI are approved by FSC, so certification via FSC can use those standards as well. We have decided to demand certification via FSC for the wood products, and

Groenkeur, Milieukeur and MPS-Product Proof for the plants etc. We are part of the pilot for Product Proof. We wanted to develop a similar standard ourselves first, but have decided to let MPS do that, as it is important that the new standard is adopted by the auction. We have chosen for these standards because they assure product quality, they are already in use and they are approved by independent societal actors; we asked several NGOs and stakeholders what they thought was a good standard. We need the assurance that the standard will achieve the goals that society expects them, and us to achieve.

We base our criticism on the current standards and thus our choice for the future on the conclusion of these societal actors. Our criticism on the MPS standard was that their requirements are not specific enough and some are unclear, the frequency of audits is too low, and the non-compliance mechanism is weak. So we need to include another similar standard.

We offer our suppliers three options, so we have a larger pool of suppliers to choose from. We only need to get the suppliers that are MPS-A certified to adopt Product Proof. As far as I know, GAP is only used on flowers and not on plants.

We have formulated several criteria a standard has to cover: avoiding neonicotoiden; integrated pest management; sustainable crop protection; maximal residue on product; obligatory registration of substance use; evaluation of use and environmental impact; possibility of unannounced audits; non-compliance mechanisms; and a well-formulated and practical standard. If a standard or a product does not meet these requirements we will not accept it.

Tuinbranche NL has played a very important part in convincing other actors in the supply chain and other retailers to take part in this initiative. This has created support throughout the sector.

Even though we compete with other retailers, I believe green products should be 'green'. So this is more important than our competitive advantage. This benefits the entire sector. Moreover, on our own we are not going to make this happen. We have 1% of the market.

We start with our largest suppliers, that are already MPS-A certified, to make sure that we have enough certified supply and make some quick progress. And then we will expand to other, smaller suppliers. Our short term focus is on the crop protection, but long term we aim for full sustainability. We start at the open field producers (glass cultivation does not influence bees as much) and then move to indoors. By 2020-22 we want to have our top 100 suppliers, 70% of our supply, to be certified. This gives suppliers the time to make the necessary changes. We will play an active role in the process.

The lack of a CS policy makes that your actions as a firm don't have a direction. By formulating a policy you set goals you can work towards. This gives you the possibility to show your mission to NGOs and to make substantiated statements.

We will also do our own sample controls, as an extra on top of MPS.

DIRECTOR GROENRIJK – 13-5-15

Groenrijk is a franchise organisation of 40 garden centres. It is a cooperation, but we don't have an overarching formula that was imposed on the business owners, but they together formulated a strategy that was then centralised. We exist 22-23 years. We are a soft franchise organisation. With normal franchise you can maximally require your franchisers 80% of the products, but with soft franchise this is even less. We have a central retail organisation and together with GRS a central purchasing platform. We have a condition structure, so we have a general framework for purchasing, but we are not part of the supply chain. The franchiser purchases its products directly from the supplier, independent of the other firms. This makes it difficult to organise a certification policy. Due to the franchise structure, it is always possible for a business owner to source differently from its fellow franchisers, and thus offer non-certified products, under the franchise name

Groenrijk does work with certain preferred suppliers. Those are often big firms that are used by all firms in the gardening sector. Our flyer offers are always, for example, FSC certified. But the products from for instance China, which are also distributed by our preferred suppliers, we can't control those. We stimulate our firms to purchase certified products, but we can't force them.

We don't have a central sustainability policy. It is mentioned in our core values, but we don't have a specific sustainability plan. We respond to the current events, when they occur. I am actively participating in discussions on crop protection. We are involved in conversations with FSC on voluntary agreements, and we try as much as possible to comply, but they are very difficult to uphold. And I believe that if we can't comply, we should take part.

The behaviour of our franchisers is dominated by the market. The only way to really tackle problems is by trade. NGOs believe we as retailers can impose change, but in the horticulture, we are such a small part of the production. Compared to the food market, we are twenty years behind.

I think that in the horticulture sector profit is very important. Many sustainability efforts are profit driven. All steps of processing the plant cost money. So the grower wants to limit that as well. However, there is also a component of good, responsible practices. I do think that the growing importance of sustainability is a good development.

I know Groenkeur, Milieukeur, MPS-ABC (in our product selection), MPS-GAP, FFP and organic. I have seen a presentation on NL-Greenlabel, but don't really know any specifics. I know PEFC; I think you should name that together with FSC. But that is also the problem with certification, that they have overlap, but they're not exactly the same. If you don't watch out that you don't lose sight of the actual goal. You have to put it in perspective. Currently, everyone is promoting the use of vinegar as crop protection, but pumping too much acetic acid into the soil is also unsustainable. Sustainability is a way of working and living; you should ignore the marketing part. And that is the risk of certification.

We thought that MPS-ABC was good, but now we realise that there we need important aspects that MPS-ABC does not address. SKAL is really good; of course, every now and then something goes wrong, but in general they really have it well thought out and are very strict. The intentions of all standards are good. We have had some disappointments in the past with MPS-ABC, but that is also because we were misinformed. You might think that with MPS you have the entire crop protection discussion covered, but that isn't the case.

The problem is that most horticulture is cultivated in monocultures. You need to protect those. So organic is really difficult for the horticulture. Also, the distribution of organic products is not organised well enough for the horticulture sector. Another sustainability issue is that we want products at times, when they are not actually available. We want roses when they are not in bloom, so we have to manipulate them to bloom. These unnatural practices are difficult to deal with from a sustainability point of view.

Certification should focus on the topics that are not addressed properly by legislation. The same goes for ISO. In the end, the amount of paper around the certification process is so big that you lose sight of the core and the goal of the standard. Instead, we should target the risk factors in a business.

From the current developments, I do think that the sector is getting more and more certified, because of the crop protection discussion. They want to mainstream sustainability.

We can only change things at the source, so at the production. I think that the message of certification is being heard and applied. A lot of growers are also getting certified because of the market. They have invested a lot in marketing, as they had to commercialise and think from the customers. But now they are again focusing on the primary processes, that they take care of that, also in the interest of the customer.

I think that we should stick to MPS, MPS-plus, that properly covers crop protection in a way that you are free to do what you prefer, within certain limits. I prefer a method that is a reporting obligation, to register when you act. This assures that in case of an extreme event, you can use more, preventively. But you have to register, so that it is always traceable. You should ensure that the frontrunners are sent up to a higher level.

MPS should develop a method that can deduce from the residue how much crop protection was used, so we have a form of predictability. This could prove to be a large change in the right direction. I don't think we should ban crop protection. I also think we should stick to MPS, because otherwise we have to burden the growers with yet another new standard. That is not desirable. And get the auction involved, just like with the vegetables.

I think that we can always be confronted with another urgent subject, but I don't think we should preemptively act. We should tackle that when the problem presents itself. I know there are places you should want to get your products from, and you can resist and fight that, but you have to look at the market standard. The fact is that a lot of products are being produced in those countries, and those countries don't have strict legislation. I don't think we as gardening retail can't change the world. The big corporations dictate these standards. We also don't have control over the labour conditions in countries like these. We don't set up our own production locations, so we are dependent on the existing facilities. We can't make demands there. If a country develops they will also get more standards and better working conditions. But then other countries will come up.

CONTACT LIAISON LTO – 30-4-15

I coordinate the policy and action on different subjects between the different agricultural sectors. Crop protection is a very hot item at the moment.

I know all the standards you look at, except for NL Greenlabel.

Many growers participate in MPS-ABC, but that is mostly a registration system, so you record what you do and that is checked. But it isn't really a quality assurance. Some work with Groenkeur, and even less work with Milieukeur. In the bulb sector they are planning to set up something with Milieukeur, because they don't think MPS is distinctive enough.

Growers are getting certified as a response to the market. Retailers in Western-Europe are increasingly demanding certification from the sector. This serves as a method to assure the firms are complying with the law.

Milieukeur and organics are above legal compliance and therefore distinctive.

I believe that we currently have a maze of standards. I don't know if that is convenient. This doesn't give buyers any clarity. I think the sector should move to only a small selection of standards in the future. A few distinctive ones and maybe one or two regular standards.

Customers in the sector largely buy plants based on appearance and price. Therefore, there is little pressure on growers to become more sustainable. However, NGOs are exerting pressure on the growers.

MPS-ABC is the standard in the sector. If you want to keep your options open, you need to be MPS-ABC certified. I agree with the idea that the sector doesn't realise that MPS-ABC is meant to be used differently than the other standards in the sector. People think it is a guarantee, that it is a product certificate. However, it certifies a process. That is exactly the problem with MPS-ABC. They have suffered from this themselves as well. From the checks by Greenpeace it showed that MPS-ABC firms performed worse than not certified firms. This has damaged their image, because no one wants to hear that is only meant to certify a process. So, they should adopt a product standard as soon as possible. Everyone should switch to Product Proof.

GLOBALG.A.P. is not very distinctive either, so MPS-GAP is not that exhaustive either.

I hear good stories of Groenkeur, from Anthos and the other trade organisations.

In the horticulture, organic is really small. Only some bulb growers use it, especially growers of spring bloomers. These grow in winter, when there are little plagues and such, so it is easier to grow them organic. Organic plants are often visually less attractive; they're smaller and compact. I also think the demand for small plants is really small.

Milieukeur is really small, also because the demand is really small. The consumers who want plants like this, with a minimal environmental impact, go for organic. There was a time when Milieukeur was largely demanded by municipalities for the public green, for the sustainable purchasing. But that has changed with the budget cuts and the economy.

In the arboriculture sector, there are quite some growers actively trying to improve their practices, for several years now. In the bulb sector, this trend has come up as well, quite recently. The latter is related to the market; bulbs go abroad for a large part, where no one asked for sustainable practices. However, this is changing, especially in the U.S. Although these actors are only interested in crop protection, it does provide an incentive to certify, as certification is the best method to guarantee compliance. Floriculture Sustainability Initiative, an initiative set up by MPS, among others, plays a part in this trend.

I believe we should move to a product certificate that ensures more sustainable practices in the sector, less crop protection, different forms of cultivation, soil quality, fertilisation. It would be ideal if we could coordinate this effort, otherwise the NGOs can push us around and force us to outbid each other. Certification is only a tool to boost sustainability. And we should make sure that we demand the same from our foreign suppliers. We need a supply chain approach. You can prevent the mixing of certified and non-certified by committing to certain suppliers, and create a firm supplier-buyer relationship. I assume this is how Intratuin and others will start working in the future.

CHAIRMAN OF ZLTO DEURNE/HEAD OF ARBORICULTURE GROUP/GROWER OF PERENNIALS – 22-6-15

I am the chairman of the arboriculture sector organisation in the Netherlands, as a part of LTO. At the same time I am involved with several international organisations such as AVIH (*Algemene Vereniging Inlands Hout*) and ENA (*European Nurserystock Association*).

The interest of the sector for certification is two-fold. Firstly, the sector has to answer to society when it comes to sustainability. The actors that supply the government and/or consumers would like have a sort of checklist, so that if something turns out to be insufficient, they can hold the primary producer responsible, and deny any responsibility themselves. That is what most certification systems pursue. Any supplier that is certified then be held accountable if a product does not match expectations, as the certification should guarantee of certain standards.

Secondly, people increasingly want quality; not necessarily organic, but they do want environmentally and socially responsibly produced products. The most important aspect is that the demand is very broad; we can see it in many sectors. However in the garden plants, we see the same as with food, that in the end the consumer will still choose the cheapest product.

For governmental projects, we had one important standard here, Milieukeur; Groenkeur and MPS were derived from that. So the Milieukeur criteria are still the guidelines for institutional horticulture (so big public projects). These standards are requested because the specifications and conditions demand this. This way the responsibility is transferred to the growers, so that when a product is delivered with a certificate, the project

manager can always say he/she bought it in line with the conditions. Which standard is the most important changes constantly. Currently, there is no real leading standard. For public projects, often the lowest price also rules. Under these bottom prices, certification is often not even possible.

What we see for retail, is that Greenpeace's actions have sped up the process, when it comes to being certified. Every organisation that offers some kind of certificate is currently trying to get firms to get certified. The problem with certification is that in a way it is a sham guarantee; although all standards perform audits, they are never 100% watertight.

The criticism on MPS is not entirely fair. MPS is a registration system. As long as everything is correctly written down and the numbers stay within legislative boundaries, a firm can participate in MPS. MPS does perform an administrative audit, but if a firm decides to keep a shadow administration, no one will notice. But honestly, no other certificate can notice this either. Therefore, we must ask ourselves whether certification is the answer.

We should develop a system that ensures we can meet the demands of the retail. Currently, the demands of the retail are not feasible to meet from a cultivation perspective. So, together with the retail we should develop criteria that meet the demands of the retail and the consumer, while being achievable for the growers. The second step is to determine the best method of assurance that firms really meet these criteria. I think the only way we can do this sample testing of leaves. The chemical analysis of leaves can trace the use of chemicals on the plant back to over a year. These tests are getting cheaper. So more and more actors will use these tests. At the same time, I think we might move to a good practices certificate, in other words, a firm that shows good practices and passes tests well for a few years, it will become a part of a club of best practices.

Every grower in the sector working with MPS in one way or another. At the end of the year you get an overview of how your firm is doing in comparison to the sector.

None of the current standards is suitable for this task. Currently, the standards all focus on crop protection, more specifically even the neonicotoids. Even though, Milieukeur mentions other topics, but they do not address them with enough emphasis. But there are many more topics that are important. I think the discussion will shift to how we should deal with sustainability as a whole. We should move to a standard that covers crop protection but only as a part of a greater picture. To be prepared for the future, we should for instance tackle CO₂ emissions and storage. In case of arboriculture, this could even work in our benefit, as the impact might be negative.

We have developed the Green is Life scan (*Groen is leven scan*) for the arboriculture sector. The website offers a risk scan and a sustainability scan. This is a tool for growers to identify how they perform compared to the legal minimum and where the low hanging fruit is for improvement. We notice that when we work with this tool together with firms that it is in their nature to want to make these improvements, to work more sustainably and use less minerals, water, energy and crop protection. However, we do notice an aversion to certification. This has an historical background. We used to have a standard in the sector, Qualitree that promised less regulatory pressure of the government in turn for more sustainable practices. So many firms adopted this scheme, with all the associated changes, costs and strict audits, but the government never reduced the regulatory pressure. A similar thing happened with Milieukeur. The government demanded Milieukeur or a similar certificate, otherwise firms could not supply to the government anymore. But in the end, the government was solely price driven, and the certified firms, that offered more costly products, made the effort for nothing. So there is an antipathy against certification because it sets really strong requirements for each theme, although firms are inclined to become more sustainable.

We want a system that shows the improvements we have made in the past, because over the course of ten-fifteen years we have reduced the amount of crop protection with 85%. Reducing this even further will cost a high amount of energy, but we are slowly making progress. The grower wants a system in which he has the space to operate, so he can decide for himself which CSR topic he will improve on. This way he can distinguish

himself based on CSR strategy. Firms can decide, within the financial possibilities, how far beyond compliance with national regulations they want to perform. It also allows firms that already perform really well on certain themes, say crop protection, to meet the necessary improvements through another theme, like labour conditions. To allow firms to fill in the details themselves, they will be more motivated to change.

We could even design the system in a way, that the best performing firms get five stars, and laggards one or two, so the performance becomes a competitive advantage tool, a way to distinguish yourself. As long as they stay within the legal frame, this should not be an issue. And through samples the system can be monitored.

In summary, we need a system that continuously motivates the user to keep on improving its processes. And if the legal requirements change, the system changes with it, so the grower keeps on being challenged to improve.

NL Greenlabel has a major flaw and that is its lack of impartiality. I believe a standard system should allow a sector organisation to provide input, but the standard setting organisation and auditors should be 100% independent. NL Greenlabel is definitely not independent, and they have a commercial goal, that it carried by only two people. They try to bin firms to their organisation. When these kinds of conflicts of interests arise, I think an initiative is bound to fail. The experts that should ensure relevance are only involved to fake legitimacy, to counter the seeming commercial motivations. What you already see is that, because of the commercial interests, the criteria are weakened so partners get a better performance grade. The influence the commercial parties have on the standard is my biggest worry.

A proper standard formulates criteria that incorporate input from the sector, both from the consumer and the producer side to ensure a balance between ambition and feasibility.

APPENDIX I – MULTI-CRITERIA DECISION ANALYSIS SCORECARD

Criteria	Clarity of standard formulation	Relevant objectives	Strong M&E system	Broad reach	Accessibility
Alternatives					
Groenkeur	1	0.25	0.5	0	0.5
Milieukeur	1	1	1	0.33	0.75
MPS-ABC	1	0.25	0.5	1	1
MPS-GAP	1	0.5	0.5	1	0.5
MPS-SQ	1	0.5	0.5	1	0.75
FFP	1	N/A. ^{vi}	0.75	1	1
NL Greenlabel	0.25	1	0	0.33	0.5
Organic	1	0.75	1	1	0.5
FSC	1	1	1	1	0.5
PEFC	1	1	1	1	1
	Coordination	Efficiency	CI and learning	Trustworthy assurance	Impartiality
Groenkeur	0.5	0.5	0.66	1	0.8
Milieukeur	0	0.5	1	1	1
MPS-ABC	0.25	0.5	0.66	0.75	0.8
MPS-GAP	0.5	0.5	0.66	1	0.8
MPS-SQ	0.75	0.75	0.66	1	0.8
FFP	1	0.75	0.33	1 ^{vii}	1
NL Greenlabel	0.5	0.5	0.66	0	0
Organic	0	0.25	1	1	1
FSC	0	0.5	1	1	1
PEFC	0.5	0.25	1	1	1
	Truthfulness	Transparency	Stakeholder engagement	Financial sustainability	Compliance with legal regulations
Groenkeur	0.8	0.71	0.33	1	1
Milieukeur	0.8	0.86	1	1	1
MPS-ABC	0.8	0.57	0.33	1	1
MPS-GAP	0.8	0.57	0.33	1	1
MPS-SQ	0.8	0.57	0.33	1	1
FFP	0.8	0.71	0.33	0	1
NL Greenlabel	0.2	0.29	0.33	1	1
Organic	0.8	0.86	1	1	1
FSC	1	0.86	1	1	1
PEFC	0.8	0.86	1	1	1

^{vi} Highly dependent on the chosen standards

^{vii} The social standard and FFP terms and conditions are monitored on a yearly basis. The environmental standard depends on the specific standard. In case of MPS-ABC the auditing is insufficient.

	Matching to existing sustainability issues	Economic benefits	Appealing to the consumer	Appeal to the producers	Match with the firm's context
Groenkeur	1	0.5	0.4	0.5	0.66
Milieukeur	1	0.5	0.2	0.5	0.33
MPS-ABC	0	0	0.2	1	0.33
MPS-GAP	1	0	0.2	0.5	0
MPS-SQ	0	0	0.2	0.25	0.33
FFP	0	0.5	0.6	0.5	0.66
NL Greenlabel	0	0.5	0.6	0.5	0.66
Organic	1	0.5	0.6	0.75	0.66
FSC	1	0	1	0.75	1
PEFC	1	0	0.6	0.75	0.66
	Total				
Groenkeur	12.34				
Milieukeur	14.45				
MPS-ABC	11.77				
MPS-GAP	12.49				
MPS-SQ	12.32				
FFP	12.89				
NL Greenlabel	8.75				
Organic	15.52				
FSC	16.95				
PEFC	16.17				