

## Thesis

Research report

AAS Year 4, Semester 2, 2014/2015



# Developing company etiquette to improve the image of the pig sector

---

Iris Bos  
Major *Applied Animal Science*  
*Van Hall Larenstein*  
Company supervisor Rosanne Vos  
Thesis Attendant Marco Verschuur  
Company *Nederlandse Vakbond Varkenshouders*



## Abstract

The negative image of the pig sector in the Netherlands is an important topic for The *Dutch labor union (Nederlandse Vakbond Varkenshouders) (NVV)*. The negative image of the pig sector emerged by the swine fever (1997), zoonosis, up-scaling, antibiotic resistance, particle matter etc. (Termeer, 2013). The negativity has led to a gap between citizen-consumers and farmers and ignorance<sup>1</sup> by the citizen-consumer about the pig sector. Therefore, this research for developing company etiquette that needs to improve the image of the pig sector is conducted.

This qualitative research about the opinion of pig farmers about the design and implementation of the company etiquette is performed. The main question was formulated as follows:

*'What company-etiquette needs to be designed and implemented in practise in the perception of the Dutch pig farmers?'*

In the performance of the questions about the company etiquette asked to the pig farmers deeper knowledge is attained in the society performance of the farmers and what the farmer understands by the 'Wishes of society'. Furthermore, the implementation, check and design are researched, because this is needed for starting-up the development of the company etiquette. Thereby, the opinion of the farmer is leading because what does the farmer think of the idea to develop the company etiquette and does the pig farmer think the pig sector will become more representative.

The desk research focuses at the society development to attain deeper knowledge about the current demands of the society. Also, the procedure of regulations and the ministries involved in animal husbandry are examined to understand what is already compulsory in pig husbandry. Furthermore the desk research focuses at already existing quality systems applicable in pig husbandry to attain a clearer perception in how a quality system is organized, which main subject are examined and how these systems respond to the three P's of sustainability. In addition, connection features are examined, because this can help farmers to link activities for society to 'their' needs to connect with the citizen-consumer.

During the research period different interviews are also performed to collect additional information about certifications, society activities (already performed in the pig sector) and potential ways to connect farmer and citizen with help of communication scientists.

---

<sup>1</sup> Ignorance: A shortcoming of knowledge about the pig sector.



## Table of content

<b>Abstract</b> .....	2
<b>1. Introduction</b> .....	5
1.1. Problem definition.....	7
1.2. Research objective .....	7
1.3. Research questions .....	7
Main question .....	7
Sub questions .....	7
<b>2. Literature review</b> .....	8
2.1. Society development Agro & Food sector anno 2015 .....	8
2.2. Legislation in pig farming .....	13
2.3. Existing quality systems applicable in pig farming .....	21
IKB varken.....	25
Beter leven kenmerk (BLk) .....	30
Varken van Morgen (VVM)/ Sustainable meat initiative (SMI).....	32
Maatlat Duurzame Veehouderij (MDV) .....	35
Keten Duurzaam Varkensvlees (KDV).....	39
Vallei Boert Bewust (VBB) .....	41
Brabantse Zorvuldigheidsscore (BZV) .....	45
2.4. Possible connection features between farmer and citizen.....	47
<b>3. Method</b> .....	53
3.1. Research design.....	53
3.2. Data collection.....	53
3.3. Data processing .....	54
<b>4. Results</b> .....	56
4.1. Results inventory research LIV .....	56
4.2. Results online questionnaire .....	58
4.3. Interviews .....	64
4.4. Correlations .....	71
<b>5. Discussion</b> .....	74
License to produce .....	74
Performing dialogue .....	75
Society acceptance .....	75
Main subjects company etiquette.....	76
Implementation and design company etiquette.....	78



Representatively pig sector .....	79
Reflection research method .....	80
<b>6. Conclusion</b> .....	<b>81</b>
7. Recommendations .....	82
<b>8. References</b> .....	<b>85</b>
<b>9. Annex literature</b> .....	<b>89</b>
Annex 1: General developments and trends in production of products .....	89
Annex 2: Cooperating parties UDV .....	90
Annex 3: Ambitions sustainable animal husbandry (UDV) .....	91
Annex 4 Notifiable animal diseases in livestock .....	92
Annex 5: <i>CoMore</i> .....	93
Annex 6: Organisations involved in IKB Pig .....	94
Annex 7: Monitoring obligations for blood sampling required by <i>IKB Varken</i> .....	95
Annex 8: Labels developed, managed, certified and assessed by ( <i>SMK</i> ) .....	96
Annex 9: <i>CGD</i> .....	98
Annex 10: BZV .....	99
Annex 11: Explanation participation ladder think along .....	100
Annex 12: Explanation participation ladder joint working .....	101
Annex 13: Explanation participation ladder doing business .....	102
<b>10. Annex Results</b> .....	<b>104</b>
Questions LIV .....	104
Questions online questionnaire .....	105
Results LIV .....	109
Results online questionnaire .....	113
Correlations .....	126
Results Agricultural questionnaire (2013) .....	130



## 1. Introduction

The image of the pig sector in the Netherlands is under pressure due to a critical civil society who has ignorance and therefore questions about the pig sector. The sector has to cooperate with citizen-consumers, who are critical about husbandry issues, anno 2015. For example questions arise about transparency of farm management, antibiotics use, up-scaling, animal welfare, environmental issues and food safety. The difficulty lies in communicating answers on these questions, where pressure groups try to use negative advertisement to persuade the citizen-consumer in having a negative opinion about the pig sector. Examples can be found in consumption of animal products, like the Dutch 'Plof kip' campaign. The *Dutch labor union (Nederlandse Vakbond Varkens) (NVV)* promotes the interest of the pig farmers. The NVV is the commissioner who will develop a company etiquette that fits the farmers and creates a positive image and space to share the real story about the pig sector, towards society '*Farmer and citizen in harmony*'. The idea for the company etiquette is based on the vision of the NVV '*Pigs belong to the Netherlands*' (*Varkens horen bij Nederland*) and the '*Recipe for sustainable pork meat*' (*Recept voor duurzaam varkensvlees*). In the vision of the NVV, in the subject Society Sustainability, is described that the NVV will act pro-active and expects that the Dutch pig farmers are willing and take responsibility to cooperate in the company etiquette. The NVV indicates that the company etiquette will be essential to counteract legislation as the *Brabant carefulness scores* (Brabantse Zorgvuldigheidsscore) (BZV). In the vision the NVV concludes that the company etiquette will contribute to the expected and desired society acceptance. Therefore it is important that every individual farmer will take responsibility to the company appearance<sup>2</sup> and the way the farm fit<sup>3</sup> in the neighbourhood and the company acceptance<sup>4</sup>, thereby the performance of the dialogue is also essential, because the dialogue is obligate in the BZV what the NVV will try to avoid for all the Dutch pig farmers.

The main reason for the BZV can be linked to up-scaling. The plans for up-scaling create many questions by the citizen-consumer. The reaction to these questions by the Dutch pig farmers was not sufficient in the opinion of the citizen-consumer from Brabant which eventually has initiated the BZV. The reason for farmers to scale up is presented, in the following chapter, to indicate the difficulty for the farmer and the indirect reason for developing legislation such as the BZV. The main question of citizen-consumers in relation to the BZV is about up-scaling of pig farms. In 2013, the total numbers of pig places maintained an equal level compared to 2012.

	2012	2013
<b>Number of pigs</b>	5.87 million	5.76 million
<b>Number of pig farms</b>	5,960	5,530

Table 1: The number of pigs and the number of pig farms over the Netherlands in 2012 and 2013 (BoerenBusiness, 2013).

The total number of pigs decreased from 5.87 million pigs in 2012 to 5.76 million pigs in 2013. The total number of companies decreased from 5,960 pig farms in 2012 to 5,530 pig farms in 2013. Still, the decrease in the number of pigs of 1.9% is not in contrast with the decrease in the number of pig farms of 6.6% (BoerenBusiness, 2013).

The reason for up-scaling is that farmers are forced to invest in for example particulate matter, ammoniac reduction and leaching of fertilizers. It is difficult to calculate a legible cost price for the investment costs in up-scaling. With up-scaling the impact of these increased investments cost can be equalised in the total cost price per pig. Other motivations for up-scaling are renewing,

<sup>2</sup> Company appearance: That the farm look well-cared-for

<sup>3</sup> Fit: That the farm fits in the rural area

<sup>4</sup> Company acceptance: That the farm will be accepted by the neighbourhood



innovations and automation of housing or farm processes by the farmer without additional regulations involved. This automation will increase the labour productivity. This offers possibilities for an increase of the production. Another effect of up-scaling is that it provides the farmer the opportunity to produce for a competitive price, guaranteeing his income level. Scaling-up can be a strategic method to create a strong base for a potential business acquisition for future generations (De Jong, 2011). Nevertheless, up-scaling is not well received by critics of animal husbandry; according to their opinion up-scaling leads to animal abuse and environment pollution. The *foundation Nature and Environment (Stichting Natuur en Milieu)*, direct and indirect neighbours and pressure groups are indicating that the impact of up-scaling in the rural area is too high and that these farm sizes belong to a business complex. Thereby, natural resources for animal feed is mostly imported from abroad, also the manure is either processed or despatched. Comparable with the glass-house horticulture, intensive livestock farming becomes a more industrial production, since the production process is not dependant on land or neighbourhood areas (Gies et al., 2007).

The up-scaling of pig farms in Brabant (a southern high pig dense province in the Netherlands) has led to negative expressions of the citizens which have led to the regulation, such as the *BZV*. The *BZV* has brought the farmers into a position where up-scaling is only possible when the farmers comply towards public health, animal welfare, animal health and physical habitat requirements. The *BZV* is one of the reasons that the *NVV* will meet the demands of the society by developing company etiquette, because the impact and power of the citizen-consumer is enormous (*Brabantse Zorgvuldigheidsscore Veehouderij*, 2015). The impact of the *BZV* is that farmers are restricted in sustainability developments, which is hard because the demands for sustainability are expensive and difficult to realize if the up-scaling will not be approved.

In contrast with the up-scaling issues and legislation as the *BZV* there are also positive image changes in the pig sector. This research indicates that the activities for society that are already performed show a positive response of society which partly indicates that the responsibility of the farmers themselves will be essential for generate society acceptance by use of the company etiquette. The research of *Growth of Knowledge (GFK)* showed a positive impact of pig promotion activities in relation to the image of the pig sector (GFK, 2012). *GFK* provides data of consumers, retail and media worldwide, the expertise of *GFK* offers their clients to transform many data into smart and specific data. The positive impact was based on the opinion of the citizen-consumer about the sector and their idea about the skybox concept. The data for this research was collected at *the weekend of the pig (Het weekend van het varken)*, which is a weekend dedicated to pigs and an initiative of *Pigs in Sight (Varkens in Zicht)*, a foundation to improve the image of the pig sector. In 2007; 41% of the respondents that visited *the weekend of the pig* thought that something needed to change in the conditions pigs were kept. In 2012, the percentage was decreased with 14% indicating that the image of the pig sector improved (GFK, 2012). These results show progress in image of the pig sector but will not decrease the regulation pressure or decrease actions of pressure groups.

A critical citizen-consumer, a decrease in the number of pig farms, up-scaling and the *BZV* all contribute to the problem of dis-balance between the citizen-consumer and the image of the pig sector. To improve the image and to create a better understanding between citizen-consumer and farmers, company etiquette will contribute in increased transparency and a better dialogue. The idea for the company etiquette is partly linked to the quality label *Valley Farms Knowingly (Vallei Boert Bewust) (VBB)*. This label focused partly at society wishes and the company appearance which is the aim for developing the company etiquette. The checklist for the company appearance (page #) is a direction for the company etiquette, because therein is the company appearance and fit in the neighbourhood examined. The additional focus to the society is the plus of *VBB* and also will be the plus of the company etiquette, because this is a pro-active reaction on the desires of the society.



### 1.1. Problem definition

The lack of knowledge and therefore question by the society about the management of pig farms and the pressure of civil society groups lead to a negative image for the pig sector. Nothing changes the low mutual trust between these parties if the pig sector does not react towards this negative image. Therefore, the pig sector reacts towards these negativities by developing a company etiquette wherein the farmer can involve the citizen-consumer and civil society groups without any regulations involved. These pressures can lead to political regulations such as the *BZV*, which legally regulate farmers to focus on topics like public health, animal welfare, animal health and environmental impact. Besides the *BZV* many other regulations are into practise for the pig sector which means that the production of pigs becomes increasingly difficult. Resulting in the decrease of 430 pig farms from 2012 till 2013 (*BoerenBusiness, 2013*). Therefore, the connection between the farmers and citizen is essential to stop the overflow of political regulations and to create a strong social foundation. The company etiquette will be developed to offer the pig farmers support in the appearance of the company, fit in the neighbourhood, transparency and dialogue. The first step to remediate the risk of a regulation such as the *BZV* is to gain insight in the view of the pig farmers about the content and design of the company etiquette and to be sure that the etiquette is developed for pig farmers, with pig farmers. The goal of the research is to improve the image of the pig sector '*Farmer and citizen in harmony*' (*Vision NVV, 2014*).

### 1.2. Research objective

The aim of the research is to collect the farmer's opinion about the content, design and implementation of the company etiquette wherein the company appearance, the way the farm fit in the neighbourhood and the acceptance of the farm will be the main focus. The reason for this development is too improve the negative image of the pig sector and to counteract regulations such as the *BZV*.

### 1.3. Research questions

#### Main question

- What the company-etiquette needs to be designed and implemented in practise in the perception of the Dutch pig farmers?

#### Sub questions

1. Which social and political developments influence the image of the pig sector?
2. Which existing certifications/etiquettes are already available and applicable in the pig sector?
3. What are the possible features to connect farmers and citizens?
4. Which themes are suitable for the company etiquette?



## 2. Literature review

### 2.1. Society development Agro & Food sector anno 2015

The society developments in matter of Agro & Food do have influence on the dairy, veal, poultry, agricultural, fishery and pig sector all over the world. All these producers and other chain parties are depending of trends and developments over the years and need to adapt to attain a living. In this chapter the following topics are described:

- History about trends and developments in the industrial production and consummation requirements over the last 50 years
- The mega trend in Agro & Food 'Sustainability'
- *Implementation agenda sustainable farming (UDV)*

#### History about trends and development in the industrial production and consummation requirements over the last 50 years

In the 20s century the car was produced which meant that a complex product was produced with the focus on low costs and efficiency in the process. However, a difficulty in the 20s century was that there was a lack of flexibility and choices. For example, there was only the possibility to buy a black car. In the latest 20s a statistical technique was developed to support the search for possible problems and solutions in the production process. This statistical figure helped the chains of production to react on the change in the wishes of the consumer. In the end of the 80s the market was more focused on short delivery times, low price, again quality and variety of products. The emphasis of these points had influence on initiatives in *America* and *Europe* that started to react on the market questions. These kinds of initiatives diminish mass production, because the future perspective of these initiatives was to be innovative by means of cooperation with suppliers and customers. At that moment *Supply Chain Management* was the new way to approach the market and to fulfil the demands of all partners involved in market products. In the 90s the retail also starts using *Supply Chain Management* to establish the question and offer between the chain partners. The important trends and developments between 2000 and this moment are the attention for the environment and sustainability (Van der Vorst, 2011). The general developments and trends in production of products are presented in (annex 1)

Period	1960s	1970s	1980s	1990s	2000s	2010s
Consumer demands	Price	Quality	Variety	Delivery	Uniqueness	Durable →
Focus organisation company	Efficient	Quality	Quality/ Flexibility	Flexible	Innovative	Triple bottom line
Performance company	Efficiency	Quality	Flexibility	Velocity	Innovative power	Durable →

Figure 1: Overview changed market demands by consumers, companies and company chains in the last 50 years, Adapted (Van der Vorst, 2011)

The presented market change demands (figure 1) are directly linked to the production method and the production offer. In the past the production of food was close to home, small scale, seasonal bound, standard and offered by home or in local shops. Nowadays, the groceries are offered by the



supermarkets, which are offering a large assortment with many foreign products. The quality and safety of the products needs to be sufficient and is arranged by a framework of systems that is focused on the involved supply chains. The production of food products is not small scale anymore. For example, farmers nowadays are mostly managers of large scale farms. The growth from small scale into large scale is highly depending of the technological developments. An example of a technological development can be the significance different in the expiration date of foods. This development helped supermarkets and other food stores to store foods for a longer time and for new packaging options that where marketing wise more beneficial in relations to sales and uniqueness. These technological developments have also provided the advent of the self-service shop. The first supermarket was started in the 50s. The difference of a supermarket in comparison with an earlier grocery was the various, large scale assortment. Another different was the start of competition between the different brands that where responsible for this various large scale assortment. The assortment increased from 5.000 products in the latest 80s till 25.000 products per assortment in the current supermarket (Van der Vorst, 2011). Between the 80s and 2010 continues pressure at the product price has provided discounts. The competition is focused at the consumer which is reached by offering the lowest price for a high quality product. Nowadays, a consumer can buy every product no matter which time of the year. The variety of products is enormous and it is imported from all places. Since the crisis with animal products (think of swine fever, 1997) the society demands for food safety, transparency and environment significance has increased. The developments in the last 50 years have changed the society demands for the Agro & food sector enormous. The following quote is a collection of the society demands for food products at this moment.

*"I would like to have something new, a product special for me (unique). It needs to be of a high quality, safe and easy usable. I would like to have it fast (preferred now!), for the lowest price and with a great customer service. And when the product is also durable then the feeling will be complete."*

Figure 2: Quote consumer demands anno 2010 till now (Van der Vorst, 2011)

### **Mega trend Agro & Food 'Sustainability'**

In the sub-chapter about history about trends and development in the industrial production over the last 50 years is sustainability the most important development. The definition of sustainability is:

*"Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Sustainability is important to making sure that we have and will continue to have, the water, materials, and resources to protect human health and our environment (Environmental protection Agency (EPA), 2015)".*

Sustainable entrepreneurship can be characterized by the 3 P's: people, planet and profit. The challenge for sustainable entrepreneurship is to find the balance between the P's and to create value for all three elements. Sustainable entrepreneurship is not only based to profit and numbers of loss, but also to the consequences of the company activities in case of people and planet. From animal husbandry companies is expected that they behave in a responsible way in line with what society demands. The responsibility of the farmers goes beyond legislation and regulations, because laws cannot arrange society acceptance. However, in the three P's the importance is that the elements are in balance, because the balance delivers profit and continuities for farmers and the society.



For defining the three P's in case of potential sustainability problems a tool *Triple Bottom Line* (TBL) is developed. The *TBL* is focused on the topics social, environment and economics and helped the production company to evaluate the performance in a broader context than only profit and loss.

In animal husbandry the subjects of the *TBL* framework are divided as follows. The social part of the three P's stands for welfare of human inside and outside the company, think of transparency, agricultural policy, traceability of products and the quality of relations within the different parties involved in animal husbandry. The element environment focuses at the effects of company activities for the neighbourhood and environment. For example, use of energy, animal welfare, animal health and emissions out of animal husbandry. The last part of the three P's is economic which focuses at the economic effect of goods and services. This element not only focuses at financial achievements, but also on work opportunities, innovation, revenues models, investments, infrastructure and involvement towards the society, for example social sponsoring (Wijffels et al., 2011). Figure 3 makes the general *TBL* framework visual.

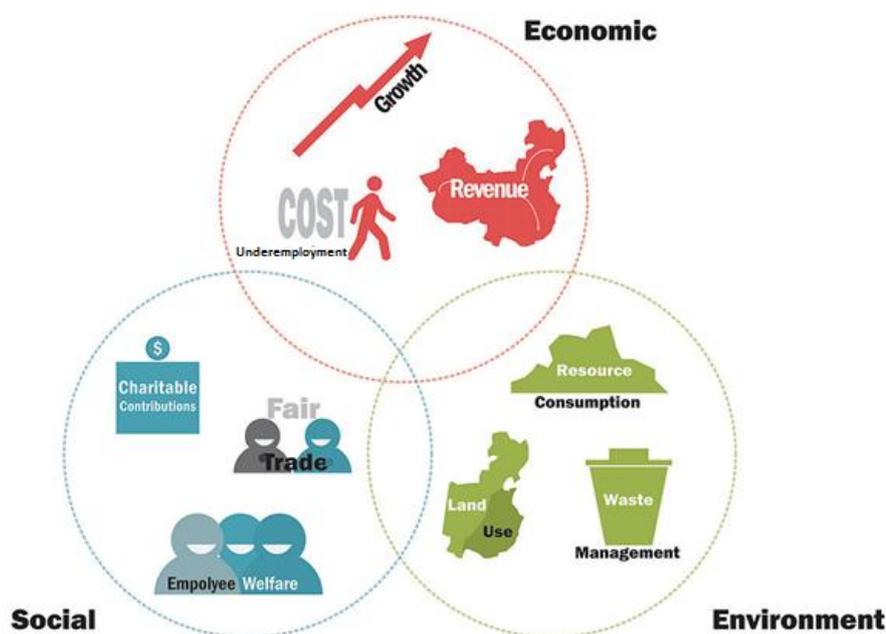


Figure 3: The accounting framework Triple Bottom Line (TBL) to evaluate the performance of production (Van der Vorst, 2011)

Besides the useable *TBL* framework for evaluation of the company performance in case of sustainable entrepreneurship there are many regulations involved in the production processes. These regulations have influence on the economics, environment and social factors involved in food production. The spear points for these regulations are described in the *Implementation agenda sustainable farming (Uitvoeringsagenda duurzame veehouderij)* (UDV).

#### Implementation agenda sustainable farming (UDV)

The *UDV* is the implementation agenda for sustainable farming that is composed by different parties see (annex 2). The *UDV* reacts at the sustainable trends and developments that are focusing at economics, environment and social factors that are of importance for animal husbandry and reacts on the society wishes. In the *UDV* also the *Ministry of EZ* is involved that focused at clear norms and suitable legislation related to the *UDV* spear points. The *UDV* focused at the following six spearheads:

- System innovation
- Animal health and animal welfare



- Integration of society
- Energy, the environment and climate
- Market and entrepreneurship
- Responsible consuming

For every individual spearhead the focus for the upcoming year is presented in the *UDV*. This focus is determined by the parties that have public participation into the *UDV*. The future focus per spearhead will be described to gain insight in the direction the Ministry of *EZ* and the other parties involved will focus at for the upcoming years.

### **System innovation**

In the innovation of farm systems is focused at an integral sustainable system. The focus for the upcoming year will be listed below:

- Continuing creating awareness for sustainable production.
- Stimulation of animal oriented housing systems
- Stimulation of shared goals in matter of sustainable farming.(Based at the fifteen sustainability ambitions)see (annex 3)
- Development of sustainable management and company processes
- System innovation focused at the monitoring and compliance<sup>5</sup> of the sustainable ambitions for *UDV*

### **Animal health and animal welfare**

The spearhead animal health and animal welfare focused at import and export of living animals, the distance of the transports, performance of natural behaviour, animal interventions and prevention of animal disease. The focus points in case of animal health and animal welfare for the upcoming year are listed below:

- Slaughter animals need to be slaughtered close to the production location with conditions that the market remains safeguarded
- Stimulants sustainable animal transport. The focus of this criterion is based at import and export, because there is much import and much export. How can the chain are organized in another way to decrease the need for transport with the risks for animal health.
- Interventions on animals will no longer be allowed this will be arranged by law. However, first tries *UDV* to stimulate researches which will help to stop interventions before a potential regulation will become obligate.
- Stimulants natural behaviour of animals
- Healthy animals have the ability to deal with difficult situations in the neighbourhood. The natural immunity of the animal is therefore important. The company management and individual animal management are crucial to prevent against contamination of pathogens

### **Integration of society**

In integration of society into animal husbandry is foremost focused at creating mutual respect. For the upcoming years this focus will be changed to another level which will be listed below:

- The focus of interaction between citizen and farmer was most of the times about sharing knowledge and understanding of each other's issues. The new focus will be about sharing and reacting towards each other's values and feelings. In the previous years this was less important, because the facts where stated as being more important. Therefore, the new

---

<sup>5</sup> Compliance: Comply with certain standards set by politics, quality systems



challenge will be to innovate in the connection between citizen and farmer at the level of norms, values and feelings of both parties. To accomplish this different way of connection there needs to be searched for a way to realize connection at another level.

- Building of new farms will be focused at the neighbourhood. So this meant that the elevation view of the farm fits the neighbourhood and rural area
- In discussion about animal husbandry there does not seem to be a shared interest between farmer and citizen. Therefore, the spearhead integration of society focused at creating shared interests. Realization of this is attempted by involving citizens in such a way that a shared interest will arise. For example, a reciprocal farm investment, involvement in decision making or joint working of a citizen.

### **Energy, the environment and climate**

The environmental part of *UDV* focused at activities that are focused at the feed-manure cycle, maximum use of minerals out of manure by manure adaptation and processing, sustainable production of all raw materials 2023 and a maximal production of sustainable energy by biomass, sun or wind energy. The focus of this spearhead will be listed below:

- Reducing phosphorus volume and ammonia emission
- Developing value out of residuals from manure. Development of new initiatives and new sales markets will be essential to connect mineral cycles
- Reducing residual from chains, to primary sectors
- Stimulating the knowledge about water quality

### **Market and entrepreneurship**

Nowadays, the focus for the wishes and demands of the consumer is an important for marketization of animal products. Therefore, market and entrepreneurship focuses at the total chain from farmer to consumer. The aim of the spearhead is to create association between chances and smart entrepreneurship which can be linked to sustainability. The focus points for market and entrepreneurship are listed below:

- Stimulating a uniform market for sustainable products
- Trust between producers and other chain parties in the appointments to realize sustainable market segments with an increasing income.
- Compensation of the additional cost farmer need to invest to produce sustainable products
- The society will be involved in the process of animal products and especially transparency, and information about the process is required

### **Responsible consuming**

One of the objectives of *UDV* is animal welfare which is also important for citizens. Therefore, the second spearhead tries to increase the availability of sustainable animal products with focus on welfare. The increasing availability of animal welfare oriented produced products needs to be stimulated by quality labels that are described. The division in quality labels will create more choice for consumers, but the focus on welfare is essential. The focus points for responsible consuming are presented below:

- The consumer needs to link sustainable animal friendly produced products to taste, comfort, price and traceability.
- The consumer needs to have the possibility to trace the products, therefore is regionalising of animal products the new trend.



## 2.2. Legislation in pig farming

In animal husbandry many political regulations are involved. These regulations are based on different topics like hygiene, manure, housing, environment, animal health and more. The following chapter presents an overview of political regulations involved in pig farming. The process of regulations is an ongoing process which can have a major impact towards the pig sector. Besides, the regulations are indirect and sometimes direct responsible for the gap between society and the pig sector, which cannot be influenced by the pig farmers.

### Legislation procedure

In the Netherlands the government makes laws in cooperation with the *Senate (eerste kamer)* and *the House of Representatives (tweede kamer)* these parties have the law giving power. A law starts with a law proposal and is finished after it will be publicized in the statute book. In between the proposal and the publication of a law are a couple of steps involved which is required for all law proposals.

When a minister or secretary of states would like to arrange a legalisation it will be outsourced to the civil servants. The civil servants will be responsible to make a proposal. In making the proposal is the civil servants responsible to involve the branch where the law is made for. This consultation between the civil servants and parties where the law will be made for can be arranged by an internet consultation. Besides the proposal will there also be written an *explanatory memorandum*. In the *explanatory memorandum* will be described how and why this law proposal is essential. In conclusion, the proposal will be presented for the *Ambtelijk Voorportaal* this is a consultation of high civil servants who are involved in the content of the proposed law. Besides the ministers or secretary of states are members of the *house of representatives* also in right to bring in law proposals this right is named *the right of initiative*. A proposal proposed by a member of the *House of Representatives* will be called an initiative legislative proposal.

After the consultation of the proposal in the *Ambtelijk Voorportaal* the legislative proposal will be discussed by the *onderraad* with only the substantively involved ministers. The next step is the consultation in the *Council of Ministers*. When the *Council of Ministers* agreed with the legislative proposal the proposition will be presented for the *Council of State*.

The *Council of State* is the highest advice college of the government. The council advised about all legislative proposals that will be further examined by the *Senate and the House of Representatives*. The legislative proposal will be secret so long it is in possession of the *Council of State*. The *Council of State* gives advice about the practicability of a proposed law and investigated if the legislative proposal is in line with the constitution. The final judge of the *Council of State* named *dictum* if the council stated a legislative proposal is a negative *dictum* the proposal needs to return to the *Council of Ministers*. The advice of the Council of State will not be binding, but this does not mean that the advice is extremely important. The involved minister needs to process the advice of the Council of State. The process and adjustments needs to be reported in the *nader rapport*.

The legislative proposal together with the *explanatory memorandum* and *nader rapport* will be presented for *the House of Representatives*. Besides, the three mentioned documents will there also be presented a royal message. This royal message offers *the House of Representatives* the legislative proposal. At this point will the legislative proposal be publicly. In *the House of Representatives* the proposed law firstly will be examined on the written part, this will be handled by a specialised commission. After the written examination the minister will defend the legislative proposal in a *plenary debate*. The sequel of the debate is a vote about amendment proposals of *the House of Representatives* members, subsequently there will be voted about the total legislative proposal. If *the House of Representatives* approved a legislative proposal it will continue the legislative process in



the *Senate*. The process in the *Senate* will be comparable with the procedure of the *House of Representatives*. The major difference is that the *Senate* can only accept or reject a legislative proposal and is not in position to modify the proposed law. However, if the *Senate* has objection against the proposed law then can the minister decide to agree with the modifications this modification is called a *Novelle*. The *House of Representatives* firstly needs to accept a *Novelle* before the *Eerste Kamer* can examine the legislative proposal again. A law which is accepted by the *House of Representatives* and the *Senate* is approved by the parliament. This does not mean it is a law, because first the king and responsible ministers needs to sign the law. The accepted law will be disclosed in the statute book. The following image gives a visual insight in the decision making steps involved in accepting a law (*RijksOverheid, 2015*).

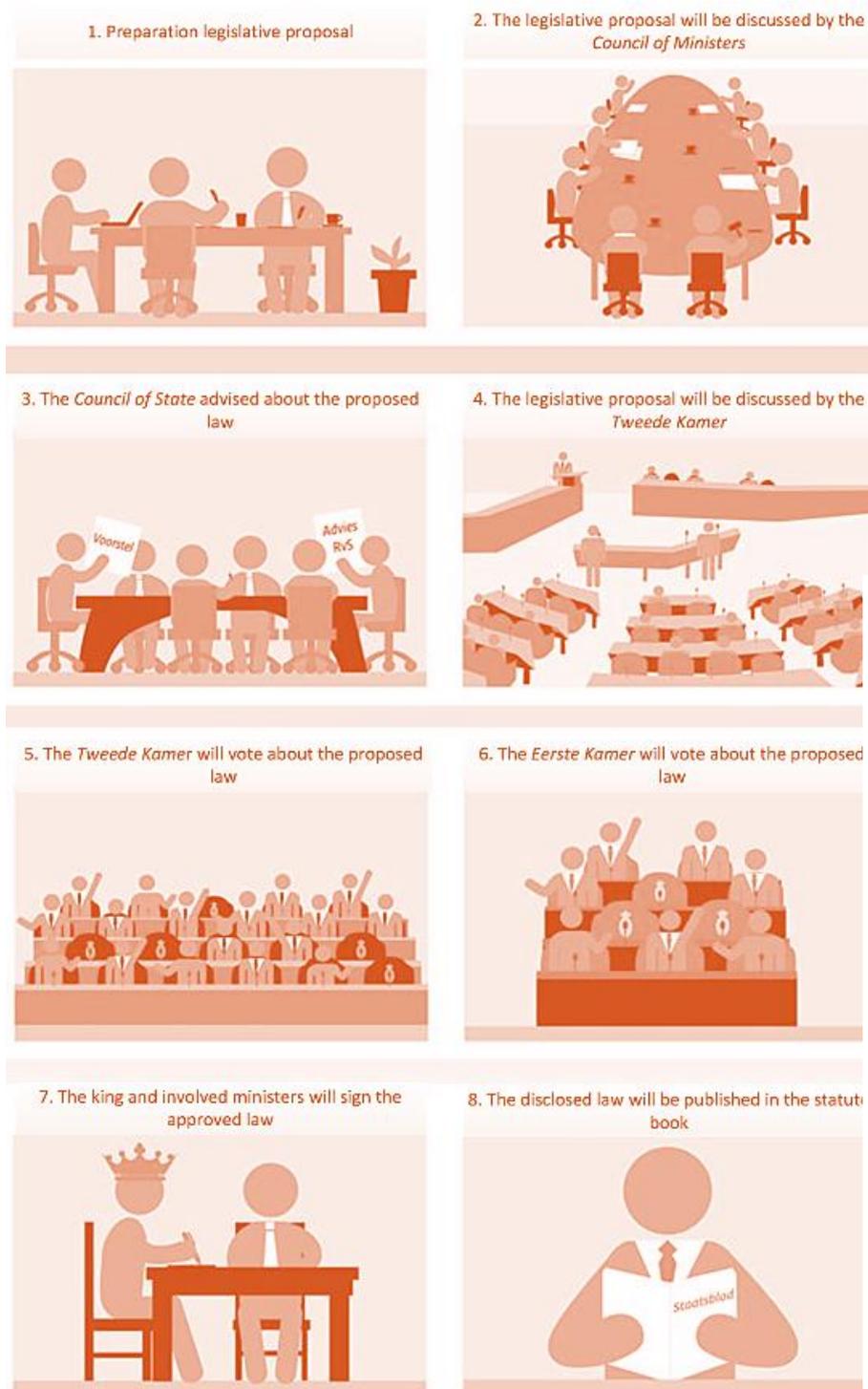


Figure 4: Steps involved in the legislation process, adapted (RijksOverheid, 2015)



### **Ministries involved in agriculture**

The ministries that focused on livestock, environment, nature, manure etc. and are of importance for the Dutch pig sector are the following ministries:

- *Ministry of EZ (Ministerie van Economische zaken) (EZ)*
- *Ministry of infrastructure and Environment (Ministerie van Infrastructuur en Milieu) (I&M)*

In this chapter the mission and strategy of both ministries will be described to give insight in the topics these ministries are focusing on, and what these ministries would like to accomplish in Dutch society.

### **Ministry of (EZ)**

The ministry of *EZ* focuses at a sustainable enterprise, an excellent entrepreneur climate and strong international competition position. *EZ* would like to create conditions for entrepreneurs to grow and renew in the described focus points. These focus points are accomplished through stimulate cooperation between researchers and entrepreneurs, these cooperation will help to maintain position in agriculture, industry, services and energy. The strategy of *EZ* will be focused at the following subjects:

- A competitive entrepreneur climate by less legislation, but higher quality legislation and a well performing fiscal policy.
- Innovation wherein *EZ* would like to be the governmental office window where companies can find guidance in innovations, export and financing. Especially, chemistry, water and energy will have additional attention by creating suitable conditions.
- An agro food sector of world class by investing in innovation and sustainability will this position become stronger
- Support by international entrepreneurship
- Clean and always available energy for the Dutch population and as high profitable export product
- Entrepreneurship with focus for animal welfare and nature. This needs to create a balance between economy and ecology.

*(RijksOverheid, 2015)*

### **Ministry of (I&M)**

The ministry of *I&M* focuses on liveability and reachability in a clean, safe and well organised neighbourhood. The ministry aimed to create powerful connections off roads, rails, water and air. Also, *I&M* tries to protect the society against water nuisance and improves quality of air and water. The Ministry works result oriented and with connection between essential parties to create the safe, well organised neighbourhood. *I&M* works together with parties such as:

- Particulars (focused on infrastructure and environment)
- Companies (focused on infrastructure and environment)
- Society organisations
- Local governments

The laws and regulation require maintenance, because these need to stay in line with the wishes of the Dutch society. Also, increasing pressure on the environment deserves attention, because this is essential to create the liveable, reachable and safe Netherlands. The strategy of *I&M* will be focused at the following subjects:



- Development and quality of networks off airways, waterways, railways, harbours and roads
- Secure safety and sustainability of networks mentioned above
- Responsible adjusting of the networks into the neighbourhood
- Secure a healthy and safe neighbourhood
- Manage help sources and environmental space

(RijksOverheid, 2015)

### Nederlandse voedsel-en waarde autoriteit (NVWA)

The Dutch food and value authority NVWA is a service and authority involved in the ministry of EZ. The NVWA consists out of seven components, five divisions, staff management, office for risk examination and programming for research.

The NVWA supervises compliance of regulations for animal welfare, animal health and human health. The health of animals is of importance in consumption of animal products or being in contact with animals. The production of safe food and provision of the right information to the chain partners and eventually consumers is the responsibility of business. Therefore, the inspections of NVWA are not only based on a farm level, but involved chains will be examined. The supervision of NVWA focusses on the subjects presented in (table 2):

Proceedings NVWA	
<ul style="list-style-type: none"> <li>• <b>Animal Health (prevention)</b></li> <li>• <b>Animal Health (Combating and finishing suspicion)</b></li> <li>• <b>Animal welfare</b></li> <li>• <b>Veterinary products</b></li> <li>• <b>Protection of crops</b></li> <li>• <b>European and National subsidy regulation</b></li> <li>• <b>Food safety in catering industry, retail and institutions (meat, eggs, milk)</b></li> <li>• <b>Trade of plants without diseases</b></li> <li>• <b>Food safety industrial food products</b></li> <li>• <b>Extraordinary food and drink goods</b></li> </ul>	<ul style="list-style-type: none"> <li>• Animal feed</li> <li>• Animal by-products</li> <li>• Chain of fish</li> <li>• Nature</li> <li>• Manure</li> <li>• Tobacco</li> <li>• Safe products for consumers</li> <li>• Import of animals, animal products, plants, feed products and other consumer products</li> <li>• Export of animals, animal products, plants, feed products and other consumer products</li> </ul>

Table 2: Subjects of importance for EZ proceeded by NVWA (NVWA, 2015)

An important subject of the proceedings of NVWA is meat. Therefore, the NVWA controls meat by different parties in the production process. Suspicion of fraud can be a reason to start an investigation in the total chain so slaughterhouses, cutting premises, processing of carcasses, cool storage till meat processing production companies. When the suspicions are based on reality the permissions will be repealed or suspend. Besides the control of the NVWA the food chain is also responsible to investigate potential fraud, because the authenticity and safety of the products needs to be guaranteed. So the food industry researched if the content will be the same then the information presented on the products label. If a meat product provenance is insecure meat products need to be recalled. The NVWA checks if the performance of the recall is well organised and handled carefully (NVWA, 2015)



Besides controls in case of fraud or other suspicions of not compliance, the law are there also other reasons for a company inspection. In these inspections focused the NVWA at the following laws:

- *Law Animals (Wet dieren)*
- *Decision keepers of animals (Besluit houders van dieren)*

These controls focus at occupational keeping of sows, boars, goats, fattening pigs and piglets. In these controls are there different reasons for the NVWA to start an inspection procedure such as:

- The NVWA vet controls the animals at the slaughterhouse
- The NVWA controls pig farms where the welfare of the animals by the delivery at the slaughterhouse was not up to standards
- Notifications of animal cruelty will be investigated
- A random investigation at several companies without notification at forehand

In the controls of NVWA is the *Besluit houders van dieren* directive. The regulations out of *Integrated Chain Management (IKB)* do not include all regulations of *Besluit houders van dieren*. Some differences between the law and the quality label *IKB* are articles out of *Besluit houders van dieren* such as:

- Article 1.2 Ratio with the law of animal experiments
- Article 1.3 Forbidden behaviour with respect to animals
- Article 2.8. prohibiting supply treated animals
- Article 2.14 Aggression
- Article 2.23 Light intensity and level of sound
- Article 2.27 Import of pigs out of third countries
- Article 5.1-5.9 Killing of production animals

(Overheid, 2015)

When the legislation out of *Besluit houders van dieren* and *Wet dieren* controlled by NVWA is not complied, an official report or penalty report will follow. Besides, these reports cannot compliance also meant discount on the income support. NVWA can also decide to recuperate a situation wherein the welfare of animals is seriously in dangerous (NVWA, 2015).

### **Rijkswaterstaat en Inspectie leefomgeving en transport (ILT)**

The *Inspection for living environment and transport ILT* is a service and authority involved in the ministry of *I&M*. The ministry has developed a policy to inspect the compliance of laws. The executive organization of *I&M* is *Rijkswaterstaat*. The subjects performed by *Rijkswaterstaat* are indirect linked to Livestock. The subjects are:

- Greenhouse gas emission of agriculture
- Surface quality
- Protection quality of groundwater

The *ILT* can be compared with *NVWA* and focuses at compliance of legislation involved in the *Ministry of I&M*. The controls of *ILT* are focused at the neighbourhood and transports which are important subjects included in the ministry of *I&M*. In case of agricultural controls *ILT* companies that are of risk for the environment, for example the emissions of ammonia. Another focus point are the



use of *Genetically Modified Organisms (GMO)* used in livestock feed and risk substances like asbestos present in older agricultural buildings.

The control of *ILT* focuses on a high quality service, justice and adequate detection of potential risks. This will be performed in cooperation with other parties to reduce the supervisory burden. The ministry of *I&M* is partly responsible for the legislation, companies are responsible for the performance of the regulations and *ILT* focuses at the compliance of these regulations (*ILT, 2015*).

### Legislation in the pig sector

The legislation for the pig sector focused at reproduction and meat production in pig farming. The regulations are included in the following laws:

- *Law Animals (Wet dieren)*
- *Decision keepers of animals (Besluit houders van dieren)*

The regulations for pigs kept for a living is presented in the following table. Two regulations will be further described to get an idea about the criterion and potential risks linked to a regulation. Besides, regulations for professional keeping of pigs are there also rules for keeping animals by hobby, in a zoo or free in nature reserves, these regulations will not be described.

Regulations pig sector anno 2014	
Regulations for professional keepers of pigs for reproduction and meat production.	Drain of cadavers
	Animal feed
	Export pigs
	Import pigs
	<b>Identification and registration (I&amp;R)</b>
	Inspection pigs
	Emergency slaughter
	Physical interventions to pigs
	Group housing sows
	Reporting animal abuse livestock
	<b>Reporting animal disease</b>
	Transport of pigs
	Collecting and exhibit of pigs
	Welfare Standards pigs

Table 3: Overview regulations operative in the pig sector anno 2014 (*NVWA, 2015*)

### Identification and registration I&R

The regulation *I&R* meant for traceability and recognition of living animals. *I&R* regulation is in force in Europe and is compulsory for livestock animal such as dairy cows, sheep, goat and pigs. The identification and registration is arranged by use of an ear tag with an individual identification number per animal. The purpose of *I&R* regulation is traceability of animals in times of calamities, recognition of animals, guarantee of provenance of animals and combating of illegal trade (*NVWA, 2015*). The regulation indirect focused on human safety, because contaminated animals that cannot be traced can end up in the human food chain. The procedure to ensure that livestock will be registries starts by the farmer.

The farmer needs to register new born or new arrived animals by the *Rijksdienst voor Ondernemend*



Figure 5: A pig with an ear tag for identification and registration (*Google, 2015*)



*Nederland (RVO)*. The NVWA examined the identification and registration of livestock in situations of combating animal disease, export certification and control of slaughter houses.

The regulation about identification and registration arises for European regulations. The general national legislation is described in:

- Regulation identification and registration of animals
- Law for health and welfare of animals
- Resolution identification and registration of animals
- Regulation for trade of living animals and living products
- Regulation examination meat

The pig specific disposal is number 2000/678/EG and establishes registration of companies in national databases for pigs (NVWA, 2015)

### **Reporting animal disease**

Pigs can be contaminated by animal diseases that are compulsory to report. Reporting will be compulsory if an animal shows clinical signs of animal disease. This disease needs to be reported to the rural reporting office for animal disease. After reporting, the company information will be passed on to *Veterinarian incidence and crisis centrum (Veterinair Incidenten- en crisiscentrum) (VIC)*, part of the NVWA. Firstly, NVWA examines the notification, is the disease of a high risk then a team of specialist will send to the contaminated location. Is the notification less of risk then the specific company vet and a NVWA vet will classify the notification. The notification judged by the specialists will be categorised by the following categories.

1. The disease can be excludable  
This meant no samples need to be taken and no further action will be performed
2. The disease is unlikely  
This meant that animal samples need to be taking and that delivery/pick up of pigs is not required until the result is known
3. The disease is not excludable  
This category has the same procedure as category 2
4. The disease is likely/expected  
In this category samples are taking, delivery and pick up of pigs is not required and measures for the contaminated location will be arranged. In this stage proposals for supervision and restricted zones needs to be composed

The diseases notifiable for livestock that are restricted to notification are presented in (annex 4). The notifiable animal diseases are based on the *Regulation prevention, combating and monitoring of contaminated animal diseases and zoonosis and transmissible spongiform encephalopathy (TSE's) (NVWA, 2015)*

The results of the samples taking should be disclosed when possible. The time of result after sampling is depending on the disease and which test needs to be used. The possibility to take measures by suspicion or an outbreak of a notifiable disease is arranged by *gezondheids- en welzijnswet voor Dieren (GWWD) (NVWA, 2015)*. The European directives are added to the national legislation. Besides, the compulsory EU legislation for reporting animal disease every member state is in charge to tightening the regulations. The performing of the European legislative is recorded in the following Dutch documents.

- Law for health and welfare of animals



- Regulation for preventing, combating and monitoring of contaminated animals disease and zoonosis and transmissible spongiform encephalopathy (TSE's)
- Resolution suspicions animals  
(NVWA, 2015)

### **Political future perspective animal husbandry**

As stated in the introduction there is development in new legislations that are of influence to the pig sector in case of this research the *BZV*. The focus point of the Ministry *EZ* focused at a sustainable animal husbandry wherein the farmers, processing industry, and purchasers will take the lead. Also, the retail and supermarkets are having a determining role, because the demand for sustainable products increases. The government support the lead of the chain partners with clear norms and legislation focused on food safety, animal welfare and the environment. The focal points and ambitions are described in the *UDV*, which is outlined to reach a sustainable animal husbandry in 2023. Besides the six spearheads stated by *UDV* is the future perspective of *EZ*, also focuses at up-scaling. However, this does not mean that the ministry will not stimulate space for development, but the growth needs to be performed gradually. Therefore, regulations for spatial planning and the environment are important. This regulation gives provinces and municipalities the opportunity to demand strict measures at the agricultural development in the rural areas. Another future focus of *EZ* is the health risks for local residents of livestock companies. The ministry will investigate the potential risk, because this can help municipalities to decide about local development of livestock farms in a living neighbourhood. If this research will determine that the risk for health is too high a nationwide value will be set (*UDV, 2015*).



### 2.3. Existing quality systems applicable in pig farming

In the research for the development of the company etiquette information about existing quality systems applicable in the pig sector is collected. The reason for collecting information about these systems was to make an inventory of the different subjects, ways of certification, audits, the focus for the three P's of sustainability etc. This information was essential, because it gives direction in different 'licenses to produce' which is indirectly linked to the company etiquette, because the reaction towards the demands of the society in case of a company that fits the neighbourhood and look well-cared-for will benefit the negative image of the pig sector, but from another perspective. The reasons for developing quality systems can be linked to legislation, because the quality system can help to fulfil the obligate legislations set by the politics, think of *IKB* that covers many subjects out of the *Wet Dieren* and *Besluit Houders van Dieren*. Thereby, different quality systems react to the various demands of society which can be focused at food safety, animal welfare, animal health, transparency, the environment etc. Also generates a quality system continuously quality, because of the clear standards set the certification procedure and the audits involved. In table 4 the examined quality systems applicable in the pig sector are described. In the table is also the *BZV* included. The *BZV* cannot be described as a quality system, because the *BZV* is legally required by the Province of *Brabant*. However, the *BZV* is included in the quality systems, because the subjects can be compared with the other quality systems. Thereby, the aim of the *BZV* is also linked to sustainable animal husbandry with the attention for the three P's and a link to 'license to produce'. The parts of the quality system examined are listed below:

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• The subjects of the quality system</li><li>• The commission/organisation that have set the standards of the quality system</li><li>• The certification institute involved</li><li>• The organisation that have set the audits</li><li>• The control of compliance</li></ul> | <ul style="list-style-type: none"><li>• The involvement of an sanction framework</li><li>• The obligation of a quality system</li><li>• The link of a quality system to a pork meat product</li><li>• The link of a quality system with other chain parties</li><li>• The connection with the three P's of sustainability</li><li>• The region were the quality system is operating in</li></ul> |
|---|--|

After table 4 the remarkable parts per quality system will be further described. These descriptions give an inventory of the focus of these examined quality systems, which is important, because the company etiquette does not need to include topics that are incorporated multiple times in the other quality systems. Thereby, the understanding about the different procedures involved in certifications is important, because a way of control is essential to obtain 'license to produce'.



## Quality systems Applicable in Pig husbandry

Label							
English	<i>Integrated chain management pig</i>	<i>Better Life Feature</i>	<i>Pig of tomorrow</i>	<i>Benchmark sustainable pork</i>	<i>Chain sustainable pork</i>	<i>Valley farmed knowingly</i>	<i>Brabant Carefulness Score</i>
Dutch	<i>Integrale ketenbeheersing (IKB)VARKEN</i>	<i>Beter Leven Keurmerk (BLK)</i>	<i>Varken Van Morgen(VVM)</i>	<i>Maatlat Duurzame Veehouderij (MDV)</i>	<i>Keten Duurzaam Varkensvlees (KDV)</i>	<i>Vallei Boert Bewust (VBB)</i>	<i>Brabantse Zorgvuldigheidsscore Veehouderij (BZV)</i>
Subjects	<ul style="list-style-type: none"> <li>• Animal welfare</li> <li>• Animal health</li> <li>• Administration</li> <li>• Animal feed (GMP+)</li> <li>• Veterinary medicines</li> <li>• Legislation</li> <li>• Drinking water</li> <li>• Hygiene code</li> <li>• Transport</li> <li>• Veterinarian</li> <li>• Laboratory</li> </ul>	<ul style="list-style-type: none"> <li>• Animal welfare</li> <li>• Animal Health                             <ul style="list-style-type: none"> <li>• Space per animal</li> <li>• Enrichment material</li> <li>• Group housing sows</li> <li>• Castration of boars</li> <li>• Transport</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Animal Welfare</li> <li>• Animal Health</li> <li>• responsible use of antibiotics</li> <li>• Environment and Conservation</li> </ul>	<ul style="list-style-type: none"> <li>• Animal welfare</li> <li>• Animal Health</li> <li>• Ammonia</li> <li>• Company &amp; surrounding</li> <li>• Prevention of fire</li> <li>• Energy</li> <li>• Particle matter</li> </ul>	<ul style="list-style-type: none"> <li>• Animal Welfare</li> <li>• Environment</li> </ul>	<ul style="list-style-type: none"> <li>• Animal welfare</li> <li>• Animal health</li> <li>• Environment</li> <li>• Manure</li> <li>• Energy</li> <li>• The society</li> <li>• Company appearance</li> </ul>	<ul style="list-style-type: none"> <li>• Animal welfare</li> <li>• Animal Health</li> <li>• Human Health</li> <li>• The physical neighbourhood</li> </ul>
Standards set by:	Central college of experts Global Gap	The animal protection institute <i>Dierenbescherming</i>	GLOBAL GAP	Compass for sustainable entrepreneurship (SMK)	Advisory board KDV	Steering board in cooperation with VBB members	<ul style="list-style-type: none"> <li>• <i>Brabante Beraad</i></li> <li>• <i>ZLTO</i></li> <li>• <i>Natuur &amp; Milieu</i></li> <li>• <i>GD</i></li> </ul>



<b>Certification arranged by:</b>	<ul style="list-style-type: none"> <li>• Verification institute quality systems <i>VERIN</i></li> <li>• <i>Societe Generalede SGS</i></li> </ul>	<ul style="list-style-type: none"> <li>• Verification institute quality systems <i>VERIN</i></li> <li>• <i>Raad voor Accreditatie (Geaccrediteer de bedrijven)</i></li> </ul>	Verification institute quality systems <i>VERIN</i>	<ul style="list-style-type: none"> <li>• Verification institute quality systems <i>VERIN</i></li> <li>• <i>Council of accreditation</i></li> </ul>	Certification institute <i>CGD</i>	Internal certification commission	The municipalities in Brabant
<b>Audits set by:</b>	<ul style="list-style-type: none"> <li>• Hazard Analysis Critical Control Points (HACCP)</li> <li>• International organisation for standardization (ISO)</li> <li>• Normalisation and Norms (NEN)</li> </ul>	<ul style="list-style-type: none"> <li>• Hazard Analysis Critical Control Points (HACCP)</li> <li>• International organisation for standardization (ISO)</li> <li>• Normalisation and Norms (NEN)</li> </ul>	GLOBAL GAP	Normalisation and Norms (NEN)	International organisation for standardization (ISO)	Steering Board VBB	Province of Northern Brabant
<b>Control of compliance after certification</b>	<ul style="list-style-type: none"> <li>• Recognition inspection</li> <li>• Rechecking</li> <li>• Recover inspection</li> <li>• Shadow inspection</li> </ul>	<ul style="list-style-type: none"> <li>• Incoming inspection</li> <li>• Yearly inspection</li> <li>• Repair inspection</li> <li>• Shadow inspection</li> </ul>	<ul style="list-style-type: none"> <li>• Administrative control</li> <li>• Farm visit</li> </ul>	<ul style="list-style-type: none"> <li>• Administrative control</li> <li>• Farm visit</li> </ul>	<ul style="list-style-type: none"> <li>• Administrative control</li> </ul>		<ul style="list-style-type: none"> <li>• Administrative control</li> <li>• Farm visit</li> </ul>
<b>Sanction framework involved</b> - Yes - No	Yes	Yes	No	No	No	No	Yes



- Legally required - Initiative farmer	Initiative farmer	Initiative farmer	Initiative farmer	Initiative farmer	Initiative farmer	Initiative farmer	Legally required
Quality label linked to product - Yes - No	Yes	Yes	Yes it will	No	Yes	No	No
Quality system linked to other chain parties - Yes - No	Yes	Yes	Yes	No	Yes	No	No
The three (P's) of sustainability - People - Planet - Profit	Profit Planet	Profit Planet	Profit Planet	Profit Planet People	Profit Planet	Profit Planet People	Profit Planet People
Region	Nationwide	Nationwide	Nationwide	Nationwide	Nationwide	<i>Gelderse Vallei</i>	<i>Noord-Brabant</i>

Table 4: Overview and differences between the different quality systems examined that are applicable in the pig sector



## IKB varken

In the early 90's livestock farming have developed a system to guarantee the quality of livestock, meat and eggs. This quality system named *Integrated chain management (IKB)*. *IKB* focuses at all parts of the production chain, so from farmer to retail. The criteria and subject of *IKB* can differ per animal species and the chain involved. Besides, the guarantee of quality focuses *IKB* also at provenance of the products. *IKB Varken* is arranged by *CoMore bedrijfsdiensten BV (CBD)*. In *IKB Varken* are different parties and commissions involved who decided about the criteria standards of the quality system. The figure presents the organizational chart of *IKB Varken*. For additional information about the certification institute *CoMore* see (annex 5).

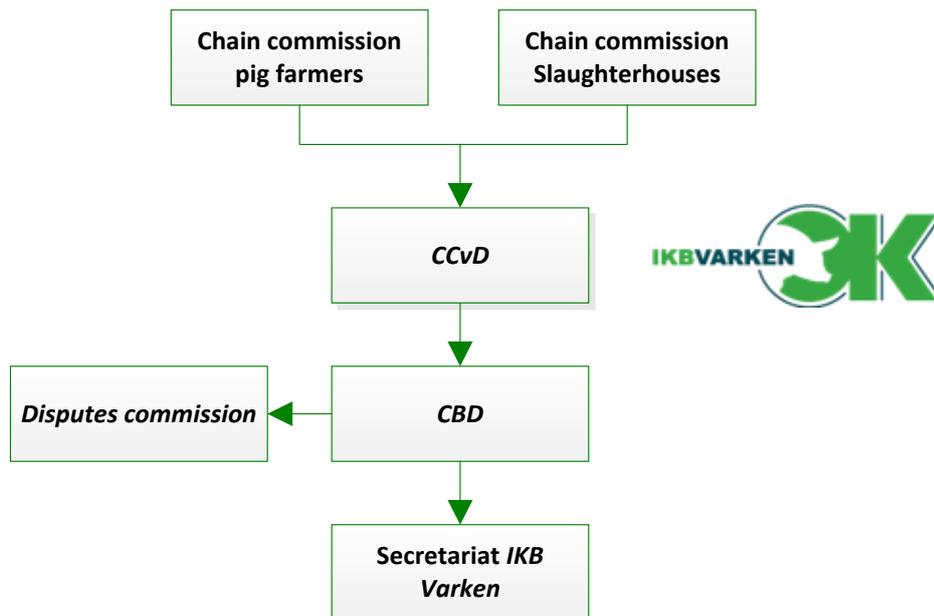


Figure 6: Organizational chart IKB Varken

The responsible party for the determination of standards for the *IKB* quality label is a board of expert: *Central college of experts (CCvD) (Centraal College van Deskundige)*. In this board different organisations are involved that are important to the sector. The involved parties are presented in (annex 6).

Besides the *CCvD* and all the parties involved there are also a commission of pig farmers and one of slaughter houses. These commissions are presented above the *CCvD*, because these chain commissions are responsible to judge the proposals set by the *CCvD*. These proposals will consist of potential adjustments or additions to the quality label. However, if there are objections, adjustment or addition to the *IKB Varken* quality label a disputes commission can be formed, because this is one of the regulations involved in the decision making process of *IKB*. This regulation is formed, because the quality system is developed with pig farmers so it needs to be possible to support the opinion of the farmers if needed. The commission of disputes is facilitated by *CBD*. *CBD* responsible for the arrangement of *IKB Varken* arranged the secretariat of *IKB Varken* and the certification institutes *VERIN* and *SGS* to perform the certifications of *IKB Varken* (*IKB Varken, 2015*).



### Certification procedure

The quality system *IKB* is developed for and with pig farmers. All persons involved in the production chain of pig meat can cooperate voluntarily. The pluses of *IKB* give the consumer guarantee of provenance, quality, animal welfare and food safety. The *IKB* system focused at four chain parties which include:

- Pig farmers
- Slaughterhouses
- Meat distributions companies
- Retail point of pork meat

The certifications of *IKB Varken* are performed by the certification institutes *Verificatie Instituut Kwaliteitssystemen BV (VERIN)* and *Société Générale de surveillance (SGS)*. The certification institute is one of the subsidiaries of *CoMore*. *SGS* is an international certification institute. *SGS* is world leading in inspection, verification, testing and certification company. *The company is recognized as the global benchmark for quality and integrity (SGS, 2015)*. The certifications are performed in command of *CBD*. The quality system of *IKB Varken* is licensed as mutual by international quality schemes like *GLOBAL G.A.P.*

Before a pig farm can be certified there are two quality systems compulsory, namely the *GMP+ international*, a quality label for the provenance of animal feed, and the regulation for *Geborgde Dierenarts* which meant that only one specific vet is involved in the company. When this demand is comply the inspection period can start. The inspections of *IKB* consist out of the next four inspection types:

- Recognition inspection
- Rechecking
- Recover inspection
- Shadow inspection

The recognition inspection is the first inspection which is focused at administration, building and the company management. The aim of this inspection is to make an inventory of the company is suitable to become an *IKB* member. An *IKB* certificate is valid for one year so the rechecking is for the yearly inspection when an *IKB* member would like to continue with the *IKB* quality label. The recover inspection is to control the compliance of required adjustments and the shadow inspection can be performed announced and unannounced and is an additional check without specific occasions. In the certification procedure of *IKB* are 5 statuses distinguished. A farmer starts with *IKB* status 1, however when some deviancies are found the status decreased to a status 2. A farm can return to status one if the recommended standard are met however, if the deviancies are not adjusted in a time frame of 6 week there will follow a decrease from status 2 to status 3. The decrease in status depends on the size of the deviancies. The status 4 will only be awarded if a farmer does not pay in the period that is stated for payment, the earlier stated adjustments are not adjusted, a company refuse a part of the inspection or that there is suspicion on use of critical substances. The status 5 meant that the *IKB* label is withdrawn and that the criterion of status 4 or all based on reality so the farmer does not pay, did not adjust the adjustments, refuse inspection and makes use of critical substances (*IKB Varken, 2015*)



The following figure shows the sanction framework of *IKB Varken*:

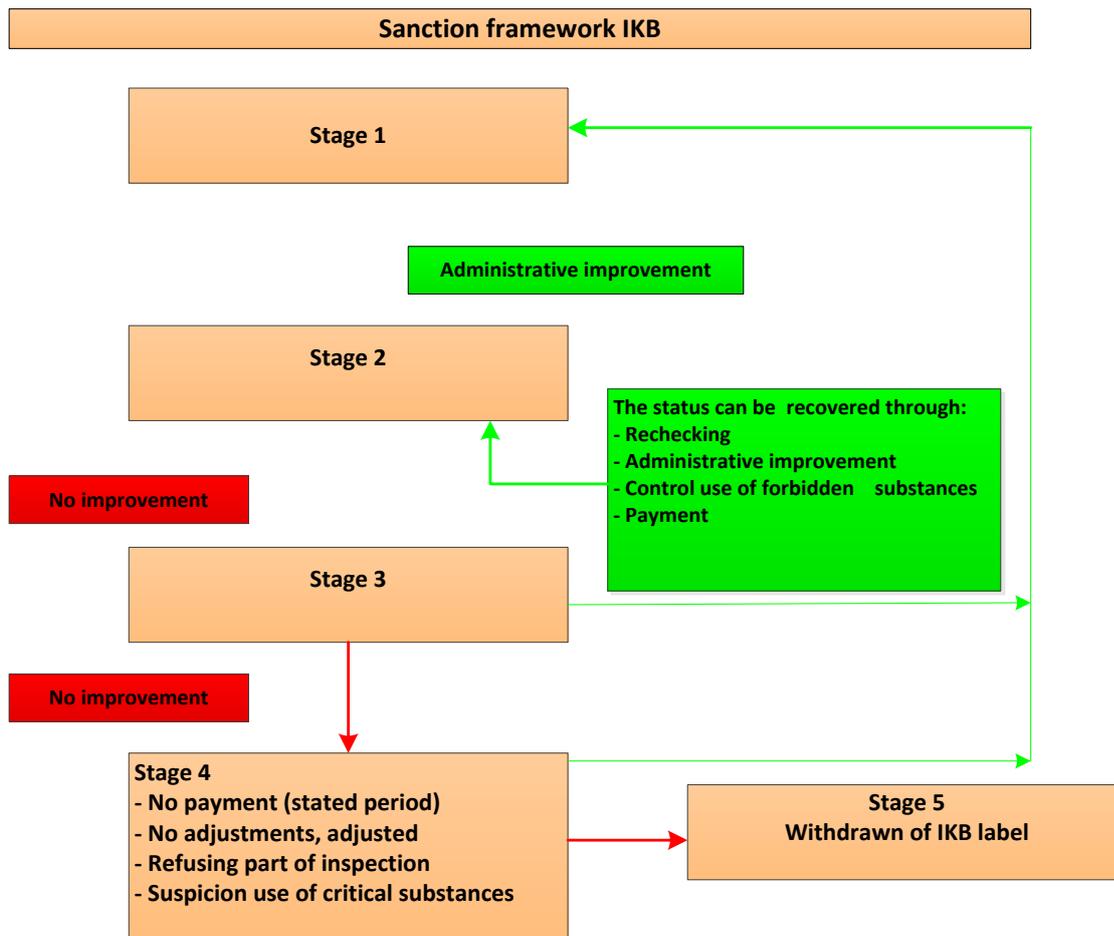


Figure 7: Sanction framework assigned certificate IKB Varken (IKB Varken, 2015)

### Criteria quality system *IKB Varken*

The *IKB* Pig quality system is focused on a strong position for the different chain parties. The focus points are giving pig farmers a strong position, because of the focus on traceability of pork meat, animal welfare, food safety and a high quality product. Another strength of the *IKB* quality system is that the meat of an *IKB* certified farmer can only be slaughtered, distributed and eventually sold by retail which is also *IKB* certified. The subjects handled are listed below:

- Veterinary medicines
- Legislation
  - Animal welfare
  - Housing
- Animal feed
- Drinking water
- Hygiene code
- Transport
- Veterinarian
- Laboratory
  - Blood samples
  - Salmonella



The three remarkable subjects handled in *IKB* will be more in depth described. The first subject handled will be about animal feed, because of the additional requirement of *Good Manufacturing Practice (GMP+)*. The second part will be about legislation, because *IKB* makes use of for example welfare criterion out of *Besluit Houders van Dieren*. The third subject will be about the laboratory requirements of the *IKB* quality system and which the outcome of the OD percentage means for the score and eventually category a farm will be placed into.

### Animal feed

The quality and safety of animal feed is important, because animal feed has a direct influence at the end products of animals such as meat, eggs and milk. The industry tries to full fill the consumer wishes to produce products that are safe, of high quality and of well treated animals. The direct influences of animal feed at the animal product have led to strict regulations for animal feed. On top of these strict regulations are there also animal feed producers that produce by GMP+ standards which mean that the animal feed is free of antibiotics, free of chemicals which can negatively affect land by fertilizing and other substances which can be of risk for human health. The GMP+ regulation can be used by producers and traders of compound feed and raw materials useable for animal feed. The background and requirement to make use of the GMP+ is the *Hazard Analysis and Critical Control Point System (HACCP)*. This system focused at critical point, which can influence the end product and the human health. The GMP+ offers animal feed producing and trading companies the possibility to demonstrate that the production and trade is performed by legal measures and extra-legal measures agreed between these chain parties (AgriHolland, 2015). However, if a farmer makes use of private cultivation of animal feed raw materials, *IKB* stated additional criteria to full fill the demands of the GMP+ requirements, because the quality label would like to guarantee the safety of the produced animal products.

### Legislation

In the subjects of *IKB* also legislation included, because *IKB* makes use of criteria out of the public legislation. For animal welfare and housing of pigs, the criteria out of *Besluit Houders van Dieren* used. Other criterions that are included in public legislation are the registration of veterinary medicines and the demand for a company health plan and company treatment plan. This meant that *IKB* uses the regulations listed below, however this does not mean that *IKB* covers all criterion demanded by the Dutch Government. In the chapter about political regulation under the subhead *NVWA* is described which articles out of *Besluit Houders van Dieren* are not included in *IKB*:

- *Besluit Houders van Dieren*
- *Wet Dieren*
- *Besluit identificatie en Registratie van dieren (I&R)*
- *Regelgeving preventie, Bestrijding en Monitoring van Besmettelijke Dierziekten, Zoonosen en TSE's*
- *Regeling Diergeneesmiddelen*  
(*IKB*, 2015)

### Laboratory

In the *IKB* quality system an examination of blood samples important for *Salmonella*, *Ziekte van Aujeszky (ZVA)* and *klassieke varkenspest (KVP)*. Therefore, different laboratory are associated in the *IKB* quality system. The licensed laboratories are listed below:

- *Gezondheidsdienst voor dieren (GD)*
- *Veterinair Laboratorium Gelderland (VLG)*

The analyses of the *ZvA* and *KVP* samples are performed by laboratory licensed by the *Nederlandse Voedsel en Waarde Autoriteit (NVWA)*. The salmonella analyse does not need to be performed by a *NVWA* licensed laboratory. The lab results of the *IKB* pigs are per individual farm presented at



[www.infovarken.nl](http://www.infovarken.nl) . The results assist the *IKB* member to compliance the monitoring obligation for the presence of *Salmonella*, *ZvA* and *KVP*. The table presents in (annex 7) specifies the monitoring obligations per different *Verordering varkens levering (VVL)*.

The monitoring of *Salmonella* is no legal obligation, but can be made obligatory by purchasers. *IKB* obligates the pig farmers to perform blood sampling for *Salmonella*, because of:

- *Salmonella* is a zoonosis
  - Pigs with salmonellosis do often not show clinical signs
  - *Salmonella* consist of different serotypes
  - *Salmonella* can be transmitted by
    - Contaminated animals
    - Manure of contaminated animals
    - Pests
    - Company visitors
- (*GD, 2015*)

The examination of the presence of *Salmonella* is focuses at the percentage antibodies expressed in an OD value. The sampling for salmonella will be performed every trimester see (annex 7). The higher the OD value the more antibodies are present in the blood serum. The OD value is the guidance for the salmonella category a farm needs to be placed in. The OD value is divided into three scores that are presented in the following table. The division in score is; score 1 (Ok) till score 3 (Bad).

Scores	Explanation
<b>Score 1</b>	20 percent or < of the blood samples needs to have and OD% > OD40
<b>Score 2</b>	More than 20% and < then 40% of the blood samples needs to have an OD% > then OD40
<b>Score 3</b>	40 percent or > of the blood samples needs to have an OD% > then OD40

Table 5: *Salmonella* scores based at antibodies present in blood serum presented in the OD (%) Value (*IKB Varken, 2015*)

The *Salmonella* category is divided in three categories. The stipulation for the categories depends at the total points scored over the three trimesters the *Salmonella* sampling is performed. For example trimester 1 (score one), trimester 2 (score 1) and trimester 3 (score 2) = 4 which means this *IKB* farm will be placed in *Salmonella* category 1. Table 6 presents the totals of three trimesters together, which leads to one of the three categories (*IKB Varken, 2015*).

Categories	Explanation category division
<b>Category 1</b>	Total score three trimesters (3 or 4)
<b>Category 2</b>	Total score three trimesters (5,6 or 7)
<b>Category 3</b>	Total score three trimesters (8 or 9)

Table 6: *Salmonella* categories depending at the total salmonella scores performed over the three trimesters (*IKB Varken, 2015*)

The division in categories gives insight in the risk of *Salmonella* contamination at a pig farm. The first two categories are of low to medium risk; but category three is of high risk. The sampling for *Salmonella* is required, but the actions to increase the positive samplings for antibodies are not required. However, *IKB* states that actions to reduce the appearance of *Salmonella* will be positive for the, quality of products, human and animal well-being and for the image of the pig sector. The actions for decreasing *Salmonella* can be provided by the company veterinarian. These actions are focused at hygiene, all in – all out, cleans and disinfecting etc. (*IKB Varken, 2015*).



## Beter leven kenmerk (BLK)

The 's Gravenhaagsche Vereniging tot Bescherming van Dieren' was in 1863 the first Dutch organisation that focused on the welfare of animals. One hundred fifty years later is the *Dierenbescherming* the biggest animal welfare organisation in the Netherlands. For example the *Dierenbescherming* is responsible for the abolition of the dog car, shooting of stray cats and the introduction of the *Beter leven kenmerk (BLK)*, in 2007. The reason for developing the *Beter leven kenmerk* had several reasons. The first reason to develop the quality label was to create more recognition for animal welfare in intensive farming, with the intrinsic value of the production animals as bases. The other reason was focused on the well-known 'Kiloknaller' used by the retail. In combating the 'Kiloknaller' the *Dierenbescherming* helped the farmer, because the 'Kiloknaller' do have a negative impact to the income of the farmer which meant less money to improve animal welfare. The *Dierenbescherming* linked a star label to the products produced by the standards of the (*BLK*) to offer consumers a recognizable product with a guarantee for well-performed animal welfare. The (*BLK*) offers the livestock companies a basic bundle with minimum standards that need to be full filled directly to be eligible for one to three stars and is examined as part of *IKB pig*. In the (*BLK*) many animal species are involved like pigs, poultry, cows, calves and rabbits. The basic norms are helping to discourage the worse cases of animal abuse which eventually have led to a better welfare for many production animals.

### First step for admittance *BLK*

The first step to make use of (*BLK*) is that the processor of animal products has a contract with *Stichting Beter leven kenmerk (SBLK)*. This can be an egg packaging station, slaughterhouse, cutting premises and meat processor. The processor of the animal products is responsible to deliver the contact information of farmers, suppliers and purchasers to (*SBLK*). Thereafter, the contact information is communicated to *VERIN* the inspection agency to start-up the procedure for a certification. For primary businesses is the requirement to participate in (*BLK*) working in chains and participation to private quality systems. This meant that farmers need to be in possession of:

- *IKB Varken*

The certification of *BLK* is linked to *IKB pig* which means that the certification described by *IKB* can be compared with the certification procedure of *BLK*.

### Criteria quality system (*BLK*) pigs

The *BLK* quality system is focused on animal welfare. The following topics are handled and are giving the pig meat a potential *BLK* label with one, two or three stars. The two remarkable subjects handled in *BLK* will be described more in depth. These subjects are enrichment material and transport.

- The pigs get more space (m<sup>2</sup>) per animal
- The pigs get more enrichment material
- The sows need to be housed in groups
- Not allowed to castrate piglets (other intervenes)
- Animal health is monitored and controlled by an animal health plan and the use of antibiotics will be decreased
- The transports of the pigs will be shorter and of higher quality



### Enrichment material

Pigs in nature are around 6 till 7 hours searching for food (Ekkel et al., 2006). Besides, searching for food consist the time spending of a pig also out exploring, chewing and rooting of the living environment. The opinion of *BLk* states that the enrichment material offered in conventional farming is not enough to support the pigs natural behaviour, which leads to boredom. This boredom can have the negative effect that pigs start to bite each other, which eventually have led to symptom combating measures as tail docking and tooth grinding. The ‘Beter Leven’ quality system focused on enrichment material which reduces the boredom and is easily useable for the pig farmers. The following table demonstrates the differences in enrichment material in conventional and *BLk* farming. The measures are the same by *BLk* one star, two stars and three stars

	Conventional farming	<i>BLk</i> 
<b>Enrichment material</b>	Chain (not required)	<ul style="list-style-type: none"> <li>- The enrichment material needs to be present in all pens</li> <li>- A provision for scrubbing needs to be present (scrubbing brush)</li> <li>- The enrichment material needs to med the following characteristics:               <ul style="list-style-type: none"> <li>▪ Biodegradable</li> <li>▪ Eatable/novelty (refreshable)</li> <li>▪ Rooting</li> <li>▪ The pig can easily explore (bite) in the enrichment material</li> </ul> </li> </ul>

Table 7: Criteria enrichment material in pig farming permits in *BLk* (Beter Leven, 2015)

### Transport

The transport to the slaughter house or another pig farm is stress full for pigs. ‘Dierenbescherming’ focused at transport material and at personal that is educated in handling pigs in such a way that welfare can be guaranteed. *BLk* focuses at the system, because after 2020 sloping tailboards are no longer allowed and is only loading with a lift required. In transport are piglets the most vulnerable, because the risks for diarrhoea and cold. These risks will be decrease after 2020, because transport of piglets is then only aloud in closed and climate controlled transport. The following table present *BLk* measures for transport.

	Conventional farming	<i>BLk</i> 	<i>BLk</i> 	<i>BLk</i> 
<b>Transport</b>	No time limit involved	Six hours of transport to a pig farm, and eight hours of transport to a slaughter house	Four hours of transport to a pig farm, and six hours of transport to a slaughter house	Four hours of transport to a pig farm, and six hours of transport to a slaughter house

Table 8: Criteria transport of pigs in *BLk* (Beter Leven,2015)



## Varken van Morgen (VVM)/ Sustainable meat initiative (SMI)

The *Varken van Morgen* is an extensive variant of 'Beter Leven Varken'. The norms of the quality label are based on the plusses program of *Global Gap*. The name of this plusses programme is 'Sustainable Meat Initiative'. The quality label is originating from the deal between food services and supermarkets, united in *Centraal Bureau Levensmiddelenhandel (CBL)*. The aim of the quality label is to make all Dutch produced pig meat sustainable. The involved standards are at an extra-legal sustainable level which helps to improve the conditions of human, animal and environment. The quality label is represented by the *Nederlandse Land- en tuinbouw (LTO)* and *Centrale organisatie voor de Vleessector (COV)*. The implementation of the quality label is arranged by *Verbond van Den Bosch*. Participation to *VVM* is the initiative of the farmer. The certification is also arranged by the subsidiaries of the holding of *CoMore BV*. The first contact for the quality system is with *VERIN (Verificatie Instituut Kwaliteitsystemen BV)*. The level of the standards is divided in major must and minor must. All the standards need to be inspected, unless there is a written agreement of the pig farmer to inspect only the major must.

### Criteria quality system 'Varken van Morgen'

The *VVM* is a quality system for pig farmers with focus on sustainably production of pork meat. The subjects are focused on animal welfare, animal health and the environment. The quality system works with three modules:

- Animal health and responsible use of antibiotics
- Animal welfare
- Environment and conservation

Per module different standards are set. The standards per module are presented and two of these standards are described further in depth.

### Animal health and responsible use of antibiotics

In the three modules different standards are involved. In the first module the following criteria are involved and needs to be performed:

- Biosecurity
- Antibiotic use and documentation of antibiotics
- Health & treatment plan
- Identification of slaughter animals
- Antimicrobial reduction plan
- Claw management sows
- Water analyses

One example of compliance criteria of module 1 will be described. The antimicrobial reduction plan is complained when a written veterinary health plan is annually assessed and reviewed by the specialized contracted pig veterinarian. The average daily dose per animal per year should not exceed above the warning area for 2 consecutive years. Farmers who have an animal day dosage that is substantial higher than required needs to present the cause in a detailed report with a plan to decrease the antimicrobial use. When the daily dose per animal per year is too high, then a sufficient reduction of the amount of antimicrobials used must be achieved. This decrease needs to be met in one year (*GLOBALG.A.P. ,ADD-ON, module 1, 2014*). Figure 8 gives an overview of the different areas involved in the animal day dosage. In the presented figure the different area of fattening pigs is presented (*SDa autoriteit diergeneesmiddelen, 2014*).



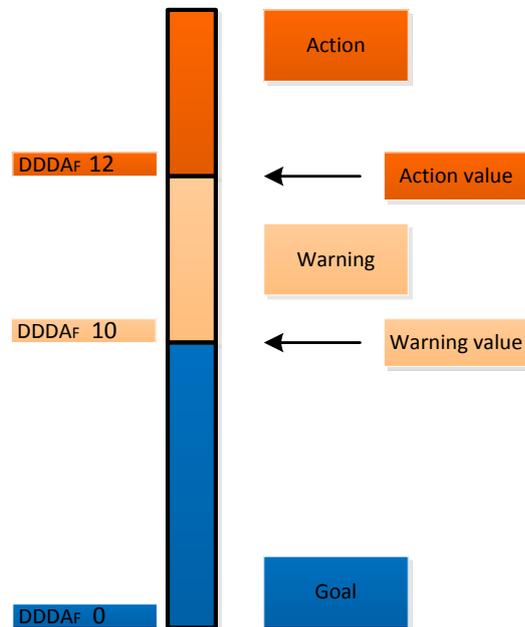


Figure 8: Critical standards animal day dosage (DDAF) for in fattening pigs (SDa, 2014)

Figure 8 presents the animal day dosage for fattening pigs. The value needs to be between (0-10), because otherwise the farm gets in the warning area which meant that the use of antimicrobials needs to be reduced. When the value of the farm is above 12 then immediate measures needs to be taken to make sure that the animal day dosage decreases (SDa, 2014).

### Animal welfare

In the second module the contents housing and the equipment in the housing systems are assessed. Thereby, handling of the pigs is taking into account such as:

- Tail docking
- Castration
- Transport
- Four day regulation

### Environment and conservation

The third module is focused on environment and conservation. The standards are:

- Ammonia
- Manure management
- Electricity
- Phosphorus efficiency
- Responsible use of soy
- Communication plan, about the performance of production

One example of compliance criteria of module 3 will be described. This will be about ammonia, because the reduction of ammonia is a current requirement from the politics called *Besluit*



*emissiearme huisvestingssystemen landbouwhuisdieren*. The level of emission limits in kg NH<sub>3</sub> required by SMI in 2015 are presented in table 8.

Pig types	NH <sub>3</sub> per pig place per year
Weaned piglet	0,23 kg NH <sub>3</sub>
Farrowing sow	2,9 kg NH <sub>3</sub>
Pregnant sow	2,6 kg NH <sub>3</sub>
Finishing pig	1,5 kg NH <sub>3</sub>

Table 8: level of emission limits in different pig types for 2015 (GLOBALG.A.P. ,ADD-ON, module 2, 2014)

Another standard to comply with of this control point is that new stables or renewed stables need to meet de ammonia reduction as listed. In the control point of ammonia is also a recommendation for 2020 added, based on the verification of environmental permits as issued by the local municipalities.

The VVM partly exists out of the ideas of the *Verbond van Den Bosch*. The *Verbond van Den Bosch* was a covenant between supermarkets, *Dierenbescherming*, meat processors and *Stichting Natuur & Milieu* focused on voluntary following the same guidelines for welfare and sustainability in chicken and pig meat.

The VVM goes beyond the legal demands and asks high adjustments in the company process and gives less space for aberrant cases. The aim is to give the pig sector a more open character with the focus to transparency and to make the sector easily controllable. Unfortunately, commotion arises around the VVM, because there is not yet an agreement about the increase in costs for the sales attached to the end product of pork meat. Another risk for the VVM is the *Authority consumer and market (ACM) (authoriteit consument en markt)*, who is responsible for the disapproval of the 'Kip van Morgen' which can be compared with the VVM. The ACM is of opinion that a consumer needs to have the possibility to choose. When a nationwide agreement is met about the production value and the extra compensation in money for VVM produced products this will be negative for the consumer, because the choice for a piece of pork meat becomes limited (*Foodlog, 2015*). This reaction of ACM has created distrust in the primary sector, which meant that the sustainable intention of VVM is inhibited and at this moment the launch of this quality system is still discussed. (*Foodlog, 2015*).



## Maatlat Duurzame Veehouderij (MDV)

Since 2007 ‘Maatlat Duurzame veehouderij’ (MDV) launched a certification system for integral sustainable livestock barns. The quality system set measures for animal welfare and animal health which contributes to sustainable livestock farming. MDV developed measures for different animal species as poultry, rabbits, ducks, turkeys, dairy goats, dairy cows, pigs, veal and beef cattle. In total are there since 2007 till 2013, 3.066 MDV stall-certificates obtained. In 2011 the certification criteria for species like ducks, rabbits and turkeys was presented and in total 10 farms participated. The following graph presents the MDV stall-certificates per animal species from 2007 till 2013 the participation of ducks, rabbits and turkeys is included in the number of poultry farms participating.

### Barn- certificate MDV per animal species

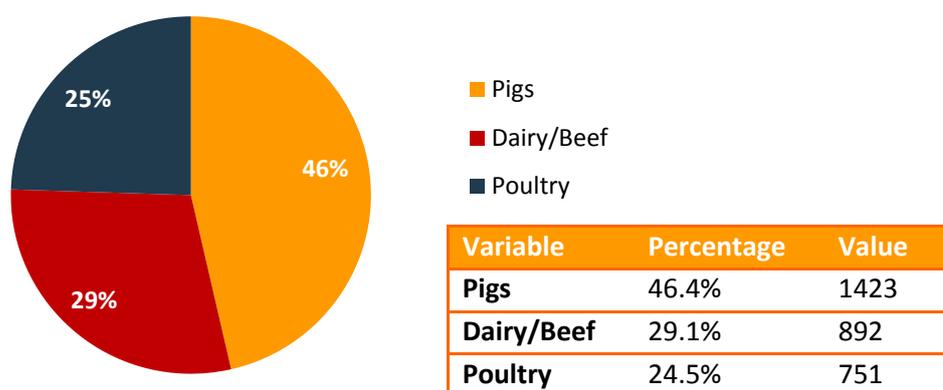


Figure 9: MDV stall certificate per animal species from 2007 till 2013 (MDV, 2014)

The MDV is part of the compass for sustainable entrepreneurship (SMK). SMK is the natural partner for businesses, branches, chains, governments and organisations by development, manage, controlling and monitoring of transparent sustainable criteria. SMK tries to link benchmark systems to the sustainable criteria and gives advice for projects to become more sustainable in processes, services and products. In development and advice trajectories is SMK regular approached by governments, branch organisations, retailers, advice bureaus, chain parties and other stakeholders involved in sustainable entrepreneurship. In managing the different quality systems SMK has developed, useable knowledgebase sustainable criteria checked by the *Council of Accreditation*, with a strong base of systematic modules and a wide external network of experts. In total SMK consist out of fourteen quality labels all focused on sustainability. The overview of these quality labels is presented in (annex 8).

The participation in MDV helped livestock farms to meet the sustainable objectives for governmental arrangements for subsidies and financing such as *Environment Investment Deduction (Milieu investeringsaftrek) (MIA)* and *Arbitrary depreciation of environmental investments (Willekeurige afschrijving milieu-investering) (Vamil) (Rijksdienst voor Ondernemend Nederland, 2015)*. The MDV certificate is not automatically bound to (MIA) and (Vamil). When a farmer would like to be eligible for the fiscal arrangement there needs to be a reference of the MIA of Vamil for the related topic.



### Certification procedure

The certification of *MDV* is also arranged by the subsidiaries of the holding of *CoMore BV* (see annex 5). The independent certification institute *VERIN (Verificatie Instituut Kwaliteitssystemen BV)* is the subsidiary company which assesses companies with new- and remodelled livestock farms by the criteria and assessment guidelines of *MDV*. The procedure of *MDV* consists out of several steps which will be presented in table 9.

Steps	Explanation
<b>Control procedure for the stall-design certificate (MDV) performed by the certification institute (VERIN)</b>	
1	The entrepreneur has building plans and would like to be eligible for the <i>MDV</i> certificate
2	The entrepreneur concretise the building plans and request for quotations
3	The entrepreneur request a neighbourhood permit for the building plans
4	The entrepreneur makes contact with the certification institute ( <i>VERIN</i> ). The certification institute has an agreement with <i>SMK</i> and works by the standards stated by <i>SMK</i>
5	The certification institute judged the building plans by the criteria of <i>MDV</i> . The following document needs to be present and if needed controlled: <ul style="list-style-type: none"> <li>• Copy of quotation and the complete neighbourhood permit</li> <li>• A detailed construction drawing</li> <li>• Checklist <i>MDV</i> with total scored points per topic</li> <li>• The entrepreneur signed the application (collateral for implementation of the presented building plans)</li> </ul>
<b>Results</b>	
6	When the building plans required for the <i>MDV</i> certificate are approved the stall-design certificate will be obtain.
<b>Control procedure for the stall-certificate (MDV) performed by the certification institute (VERIN)</b>	
7	After the stall is yielded the stall will be controlled by the certification institute. In this control moment is the importance that the criteria med the performed building plans and that the proposed building plan is accurately applied in practice. The administrative control will have insight in: <ul style="list-style-type: none"> <li>• Invoices</li> <li>• Complete neighbourhood permit</li> <li>• Construction drawing</li> <li>• Declarations</li> <li>• Other documentation of importance</li> </ul> The physical control is focused on the amenities and then not only the presence of the amenities, but also the function of the amenities.
<b>Result</b>	
8	When the administrative and physical control are med the required criteria, the <i>MDV</i> certificate will be obtain. The <i>MDV</i> stall-certificate needs to be awarded within two years after obtaining of the stall-design certificate

Table 9: Procedure request *MDV* quality label (College van Deskundige *MDVA*, 2015)

### Criteria quality system *MDV*

The criteria of *MDV* differ between gestating sows, farrowing sows, weaned piglets, fattening pigs and breeding boards. Besides, these differences are the criteria also depending on company size. The differences in criteria in company size are applied in pigs, poultry, dairy cows, veal and rabbits. The company size is calculated by use of the *Nederlandse grootte-eenheid (nge)*. The *nge* of a particular company is calculated before the certification of the *MDV* barn-certificate will be performed. For this



quality label only the pigs are calculated and not the hectares of grassland and fodder crops. The companies with a large and extremely large amount of animals have higher standards for animal welfare, animal health and company and neighbourhood. This difference in standards is requested by the government. In the calculation of the company size is not only the new or rebuild farm calculated, but the entire yard. The calculation of *nge* in the *MDV* quality system is defined at three levels which are presented in the following table.

Company size in (nge)	≤ 350 nge
	> 350 nge en ≤ 700 nge
	> 700 nge

Table 10: *nge* criteria used to determine company size in the *MDV* quality system (College van Deskundige MDVA, 2015)

\* The *nge* based on reliable economic standards which is based on the *brutostandaardsaldo (bss)*. The *bss* = proceeds minus certain specific costs. The *nge* standard is a tool to measure the economic size of a certain agricultural activity and wherein crops and animal species can be compared in economic regard. In 2010 the *nge* is replaced by the *standard omzet (SO)* therefore is the *nge* not offered anymore, but are the *nge* determined. (LTO Noord, 2015)

The topics assessed in the *MDV* quality label are:

- Ammonia
- Company & neighbourhood
- Prevention of fire
- Animal welfare
- Animal health
- Energy
- Particle matter

The three remarkable subjects handled in *MDV* will be more in depth described. The subjects further described are company and neighbourhood, prevention of fire and particle matter.

### Company & neighbourhood

The four criterions discussed in this topic are:

- Landscape
- Water
- Disturbance
- Focused on the neighbourhood

In the theme landscape will be focused at the appearance and the fit in the neighbourhood of a company so the characteristics of the barn, planting, food storage etc. The theme water focused on the drain of water. The importance for this theme is that contaminated water will not pollute in surface water which can be disturbance for the environment. In the topics disturbance focused at the neighbourhood requirements by society are taking into account. In these themes requires the *MDV* that a farmer do not disturb the neighbourhood by noise, odour and excessive light, also is required that a farm is transparent and informs the neighbourhood. The criterion included in the theme neighbourhood is:

- Offer company information in image and word and which is accessible from the road
- The farm needs to be digital accessible (website, social media)



- There needs to be the possibility to follow the animals by livestream (this can be accessible by the company website or at the company).
- Visitors barn
- Multifunctional room

The standardization of this topic differs per building plan, because a stall can be rebuild, a complete new stall can be build or a stall will be built at a new location. The stall at a new location will score the highest points (maximum of 50 points), because the design of the stall can be fully med the *MDV* requirements.

### Prevention of fire

This topic focused at three themes prevention, combating and decreasing impact of fire (when a fire has taking place). In these themes differs the criteria per company part. For example the technical installations such as feed processing systems, manure processing systems, air washers, cold storage and storage mobile machinery are of a higher risk for fire and needs to have additional attention.

### Particle matter

The systems used for the reduction of partial matter are the compulsory standards set by the ministry of *Infrastructuur en Milieu (I&M)*. The standards for partial matter are divided in two criteria. The first criteria is focused on the air quality in the stable and the second standard focuses at reduce emission out of the stable. An example of one of the criterion which can have a positive effect at the air quality in the stable is the use of mush feeding. This liquid characteristic of mush feeding dimes the partial matter which normally is released by feeding of normal compound feed. The second standard can be performed with use of bio *fILTer*/ bio matrass which is presented in the following image. The bio mattress consists out of organic material such as compost, wood chips, tree bark, peat and coconut fibre. This organic material needs to cover a specific surface which can be seen in (image #). The importance of this air wash system is that the surface stays humid and that the products such as ammonia, nitrate and nitrite are removed to counteract acidification. The air wash system needs to have a data logger to register the water use, humid balance and acidity of the bio *fILTer*/ bio matrass. The importance in air wash systems is that the system met the capacity for decreasing the emission. Therefore, controls *VERIN* the compliance by administration, with use of the standards set by *Kenniscentrum InfoMil* out of the *Activiteitenbesluit emission (MDV, 2015)*.



Figure 10: Bio mattress to reduce emission out of the barn (Google, 2015)



## Keten Duurzaam Varkensvlees (KDV)

The foundation *Chain sustainable pork meat (KDV)* involves Dutch pig farmers, slaughterhouses, butchers, meat processors, retail and caterers. The mission of the organisation is to involve the consumer by creating awareness for sustainable choices that are available in pork meat (KDV, 2015). To fulfil this mission KDV is active in the stimulation and facilitation of innovations at farm level. The quality system focused on three topics: the environment, animal welfare and pork meat with a high quality taste and texture. KDV tries to get all members in one line in case of communication to the citizens, because one message instead of different messages creates trust and clarity. The initiators of KDV are presented in the organizational chart in figure 11.

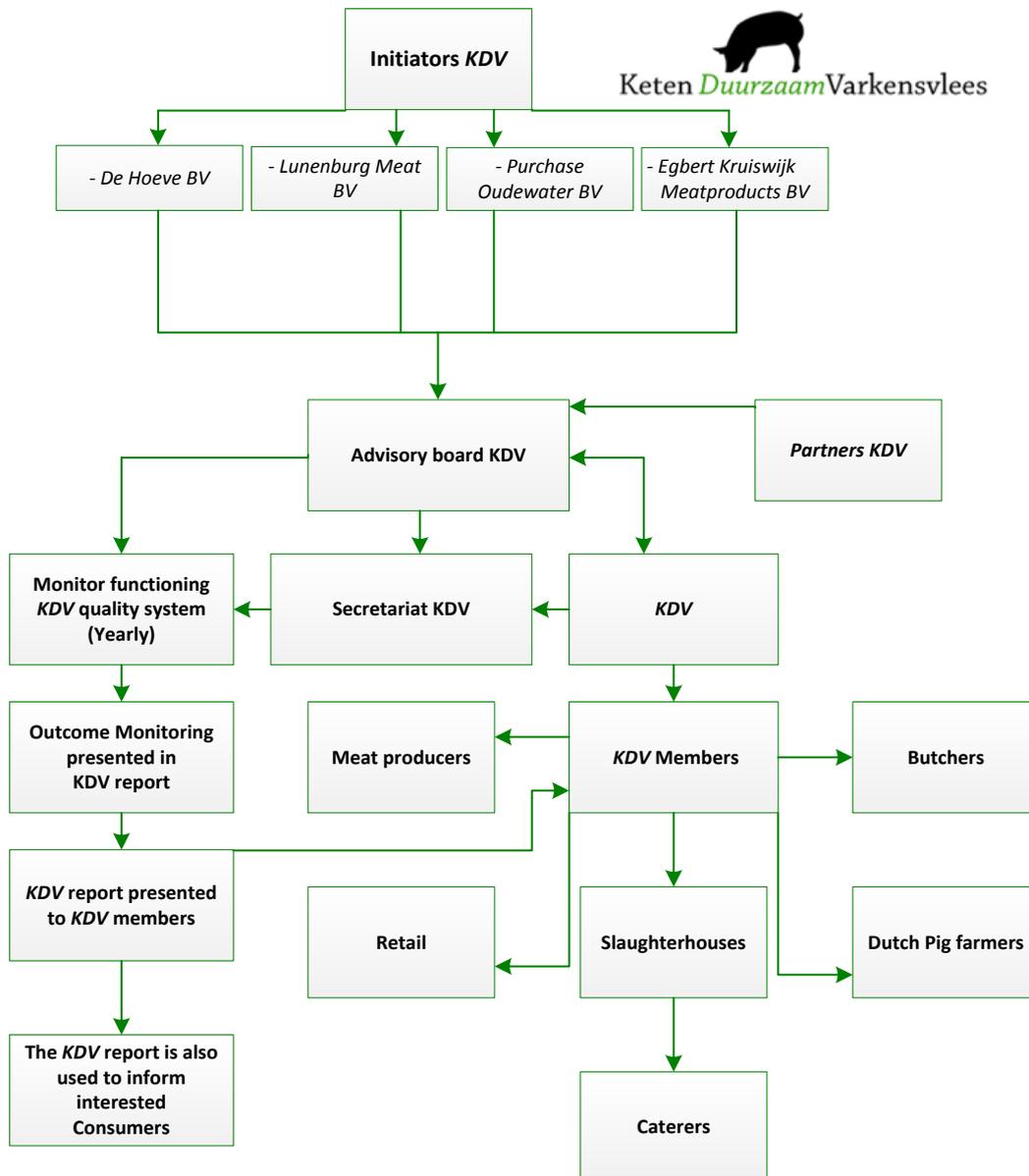


Figure 11: Organizational chart and monitoring functioning KDV

The partners of KDV are involved in the advisory board and are responsible to be critical at the innovations stimulated by KDV and offering ideas for improvement if needed. The secretariat of KDV is responsible for the PR and publicity of KDV for all members. The secretariat is also responsible as communication centre for partners, members and citizens if questions about KDV arise. The



organisations monitors the function by publication of a *KDV* report wherein reflecting and future objectives are the content. This report gives insight in the reached goals and the description of plans for the upcoming year. This keeps partners, consumers, pig farmers, butchers etc. involved in the development of *KDV* and potential changes. Also, the reflection in this report ensures the quality of the label, because potential improvements and well performing subjects are noticed.

### **Control procedure *KDV***

The farmers that would like to fulfil the criteria of *KDV* need to meet high standards in case of animal welfare and environment. Another requirement is possession of the *IKB* quality label. The certification institute involved in the *KDV* quality label is *CGD* an independent certification institute focuses at system and product certification. For additional information about *CGD* see (annex 9).

In *KDV* different chains actors are involved who also need to be examined such as of butchers, retail and meat processors. The control of these chain actors is a continuous process performed by *KDV*. This control focuses on the kg's processed pork meat to ensure that the meat is indeed taste full and sustainable produced. This can be controlled by examining the purchase invoices and administration of the *KDV* members. The purchase invoices will be compared with the number of kg's in the sales administration. Besides the continue examination of purchase and sale of kg's pork meat there are also visits performed by *KDV* and the certification institute *CGD*. In case of the retail and butchers there is also offers support to improve required results, when needed.

The examination of slaughterhouses is firstly focused on animal welfare by educating employees over the characteristic, natural behaviour and needs of pigs. Another requirement for the slaughterhouse of the *KDV* quality label is the continuous camera view to all areas of the slaughterhouse to control the compliance of the animal welfare standards. Besides, the welfare is another importance the traceability of the *KDV* products. Therefore, the production routs of the *KDV* meat are monitored from slaughterhouse to retail by an administrative control.

### **Criterion quality system *KDV***

The *KDV* quality label focuses at sustainable animal welfare and environment. In the two subjects stimulation of innovation is important, because it can help to bring standards to a higher level. The standards of *KDV* in case of animal welfare are focused at healthy pigs, without stress with enough enrichment material and well-functioning hygienic housing systems. Especially, healthy pigs are important because *KDV* aimed to reduce antibiotic use by 90% which is already met by some *KDV* members. Another part of *KDV* is the 'pig whisperer' who focused at the intrinsic values of a pig and educate employees involved in the pig sector to understand the needs, characteristic and natural behaviour of pigs. The reduction of inconveniences does have a positive influence for the farmer, because it will positively influence the growth, quality of meat and reduction of antibiotic use.

In the subject environment focused *KDV* one reducing the use of energy and stimulating the use of generating energy. Another important aspect is reducing of emissions polluting the air, ground water etc. Also, responsible use of animal feed is important, because in responsible animal feed no substances are added that can have a negative influence at the environment. Especially the use of copper and zinc concentrations in animal feed is important, because when it is not presented in animal feed it can also not negative influence the environment. Another positive criterion for the environment performing by the *KDV* quality system is the use residues of the human food industry such as; potato peelings, rapeseed, whey and residues of producing beer. The re-use of these residues meant more sustainable pig farms, because the feed prices can be decrease and the quality of the feed can be adjusted to the condition and phase of life of the pigs. Another, part of the subject, 'The cycle' is the demand that every part of the total pig will be used. For example are the bones and skin used for different products such as medicines, candy, glow, paper etc. (*KDV, 2015*)



## Vallei Boert Bewust (VBB)

The quality system *VBB* cannot be compared with the other described quality system, because *VBB* is a project, the certification of *VBB* is arranged intern and the project focuses at one region (*Gelderse Vallei*) instead of nationwide. The project *VBB* started in 2013 with a group of pig farmers that would like to involve the citizens into the farm. The main goal of the *VBB* project is transparency of the livestock companies. The *VBB* project is focused at all species such as: calves, dairy, pigs, beef cattle and poultry. The group of farmers that had taking the initiative for the *VBB* project have involved different partners and financiers to facilitate and generate the ideas of the initiators. The figure 12 presents the partners of the *VBB* project the organizational structure of the project and the partners of

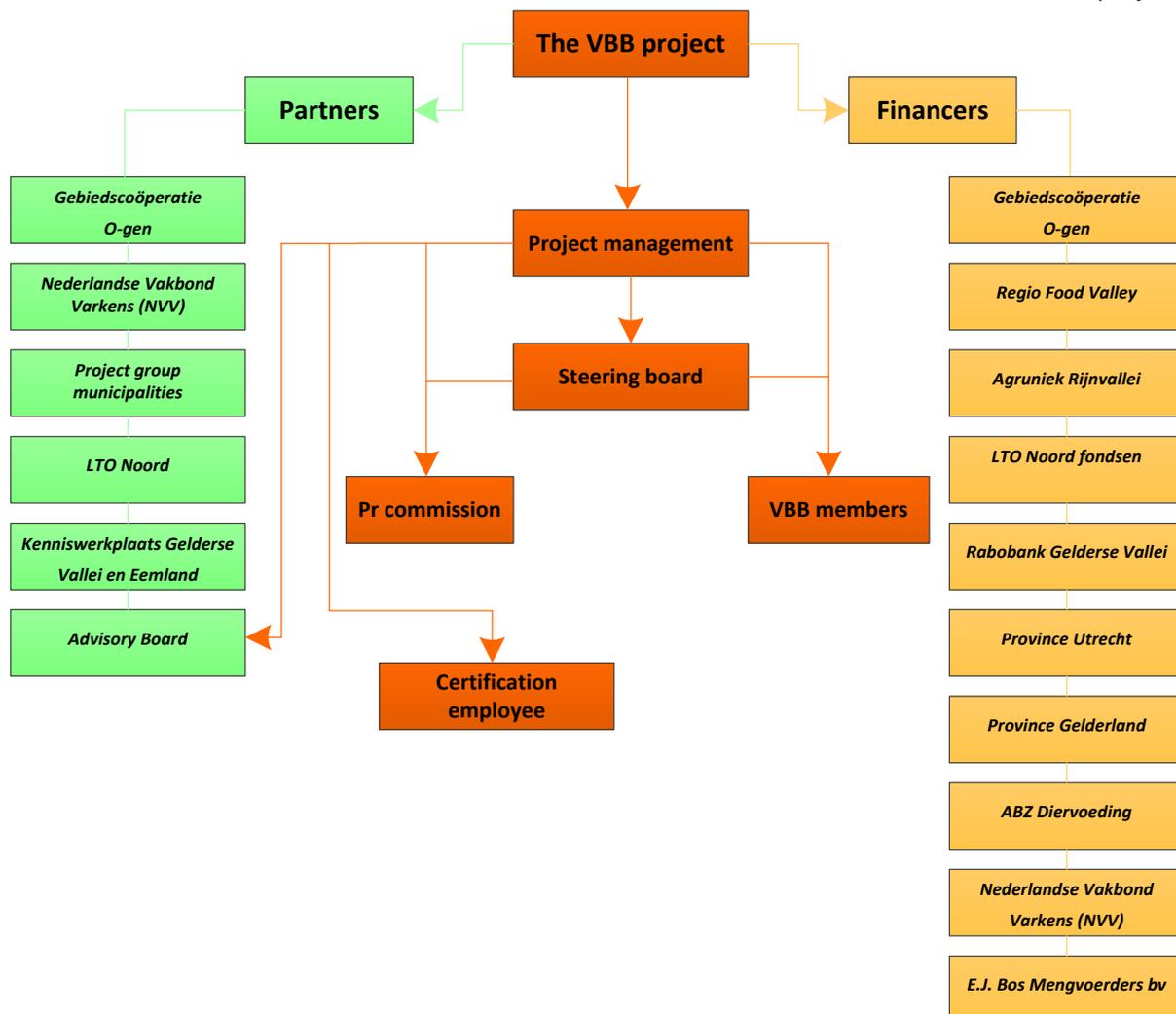


Figure 12: Organizational chart VBB with partners and financiers of the project included (Bos, 2015)

The partners presented in figure 12 are the *Gebiedscoöperatie O-gen* who is responsible for the agricultural network, office work (*secretariat VBB project*) and a part of the project management. The *Land-en Tuinbouw Organisatie Nederland (LTO) Noord* is offering a project manager *Gerdien Kleijer*. The *Nederlandse Vakbond Varkens (NVV)* contributes in time and then especially in hours to support the communication of *VBB*. The *Kenniswerkplaats Gelderse Vallei en Eemland* makes the connection between education and the project *VBB*. Through this organisation has the project the opportunity to use the knowledge and expertise of students to research topics that can be off use for the project. The advisory board consist of peoples who are working in the *Gelderse Vallei* and are expert in



projects that have influence to society and the *neighbourhood*. The *Advisory Board* gives advice in all the facets off the project thereby is the board also there to reflect to the progress of the project. The *Regio Food Valley* is an organization into the *Gelderse Vallei* who tries to develop an *Agro Food Centrum* where knowledge and innovations in healthy food and sustainability are the focal points. This organisation is spread over the following municipalities *Barneveld, Ede, Nijkerk, Renswoude, Rhenen, Scherpenzeel, Veenendaal* and *Wageningen* all located into the *Gelderse Vallei*. These municipalities are together with the municipalities *Leusden, Putten* and *Woudenberg* the *Project group municipalities Gelderse Vallei* this group is responsible for progress monitoring and advices. Another aspect of the *Project group municipalities* is that the *VBB* project needs to justify their choices and expenses to this group of partners, because the *Regio Food Valley* is one of the biggest financers of the project *Vallei Boert Bewust*. The financial partners of *VBB* are giving the project the opportunity to invest in the project management, activities, certifications, communication, promotion, publicity and accountant costs. Besides the provinces *Utrecht* and *Gelderland* are there also the municipalities of *Regio Food Valley* that invest in the project. The financing of these provinces, organisations and animal feed companies will stop at January 2016 this meant that the costs for the *VBB* project needs to be arranged at another way which is at this moment one of the major focus points to ensure that the project can continue after 2015.

The organizational structure of the *VBB* project started with a team of three members who are responsible for the project management of the project. The project management is together with the steering board the directors of the project; however this does not mean the farmers do not have the opportunity to participate in the decision making process and future perspective of the project. Also, focus *VBB* at PR which is arranged by a group of enthusiastic people who are all involved in agriculture in another way. The PR commission is the executive organ of writing the newsletter and arranging of events which is essential, because *VBB* would like to increase in number of farms that are cooperating into the project. The responsibilities and tasks of the certification employee are described in the certification procedure of *VBB* (Bos, 2015).

### Certification procedure

The certification procedure of *VBB* cannot be compared with the other quality systems, because *VBB* is arranging the certification internally instead of hiring a certification institute such as *CoMore* or *CGD BV*. The certification commission of *VBB* consists out of 3 members: one member of the steering group. Another *VBB* member (the same animal species) and an external employee hired for the certification. Before, a certification procedure is started one of the *VBB* members will visit a farmer with interest for the *VBB* project and will explain the certification scheme and other parts involved into the *VBB* project. If the interested farmer will continue the procedure there will be planned a certification date wherein a minimum of 10 plusses needs to be achieved. After the certification a farmer will be asked to write something about the farm which will be presented at the *VBB* website. Another important aspect of *VBB* is the traceability and recognisability of a *VBB* farm by a *VBB* board. The following image presents the *VBB* board which only can be found in the *Gelderse Vallei*, because the *VBB* project is focused on region instead of nationwide. The compliance of the scored criterion will not be controlled yearly. However, *VBB* looks for ways to let the recheck be performed by student or other



Figure 13: VBB board (Google, 2015)



VBB members, however at this moment there will not be performed a recheck of compliance of the scored pluses.

### Criteria quality system VBB

The quality schemes used by VBB differ per animal species, but the subjects examined are the same. The subjects in the VBB quality schemes are handled and are focused at extralegal measures. In total there need to be achieved 10 pluses with a maximum of 3 point per theme. The subjects examined in the VBB quality scheme are listed below:

- Environment
- Energy
- Animal Health
- Company appearance
- Manure
- Animal welfare
- The society

The two subjects that are described more into depth are the society and the company appearance, because these two subjects are the leading subjects to reach the objective to create transparency in livestock companies.

### The society

The criterion included in the subject society focused at transparency, but also a bit at informing citizens about the *INS & OUTS* of the affiliated livestock companies. In comparison with the other subjects is the demand for this subject to score a minimum of 2 pluses. Two other obligations of this part is the VBB board and an individual page with information about the farm at the VBB website. At this individual page will also be presented and described how the farm has scored for the subjects and which criterion is achieved. Table 10 presents the criterion included in the subject society:

The society	
Extralegal criterion	Pluses per criterion
• Private website	1
• Sight stall	2
• Farm- education, minimum of 3 groups per year	2
• Livestream	1
• The possibility to receipt citizens	1
• Farm shop	1
• Social media <ul style="list-style-type: none"> <li>○ Facebook</li> <li>○ Twitter</li> <li>○ LinkedIn</li> </ul>	1
• Open day, 1 open day per 2 year	2
• Assistance at VBB other VBB projects	1
• Control electric installations, 1 per 2 years	1
• Meadow bird management	1

Table 10: Extra-legal criterion society part, performed at the certification of VBB (VBB, 2015)



### Company appearance

The other notable subject of the VBB certificate is the criterion for the appearance of the livestock company. This part is focused on the performance of a plan for the courtyard, which focused on the company appearance, planting, local suitability of a company and reduction of potential nuisance. Another, criterion of this subject is the place where cadavers are placed, because it is known that this is not well-received by citizens. Therefore, this criterion requires a wall or hedge that makes sure that the place for cadavers cannot be seen at the adjacent road. Besides these two criteria a checklist for the company appearance will also be performed. This checklist will not be involved in the maximum of 10 pluses, but is developed to give farmers an idea about the opinion of an outsider about the appearance of the company. This checklist will be helpful, because it brings the farmers company blindness to the front which maybe can positive influence the appearance of the livestock company. Table 11 presents the checklist for the company appearance which is partly focused at the region so the *Gelderse Vallei*:

Checklist company appearance		
Criterion	Examination	Advice VBB certifiers
The courtyard	Good/moderately/Bad	
Situating silos		
Architecture		
Planting yard		
Residential house		
Suitability to the region architecture		
Culture historical heritage		

Table 11: Checklist company appearance, performed at the certification of VBB (VBB, 2015)



## Brabantse Zorgvuldigheidsscore (BZV)

In March 2013 the Provincial States of Brabant (a southern high pig dense province in the Netherlands) have decided to develop the *Brabantse Zorgvuldigheidsscore (BZV)*, with the aim to recover the balance between citizens and farmers by demanding sustainable entrepreneurship. By sustainable entrepreneurship is meant that the farmer needs to score points on subjects that react towards the demands of the society. The BZV cannot be compared with the other quality system examined, because the BZV is compulsory in the Province of *Brabant*. However, the province has developed an implementation agenda. The development of this agenda is started in 2013 and focuses on making an inventory of the proceedings of the farmer in case of human health, animal welfare, animal health and the environment and neighbourhood of the farm. Figure 14 present the three subjects of the BZV and the sub themes per subject.

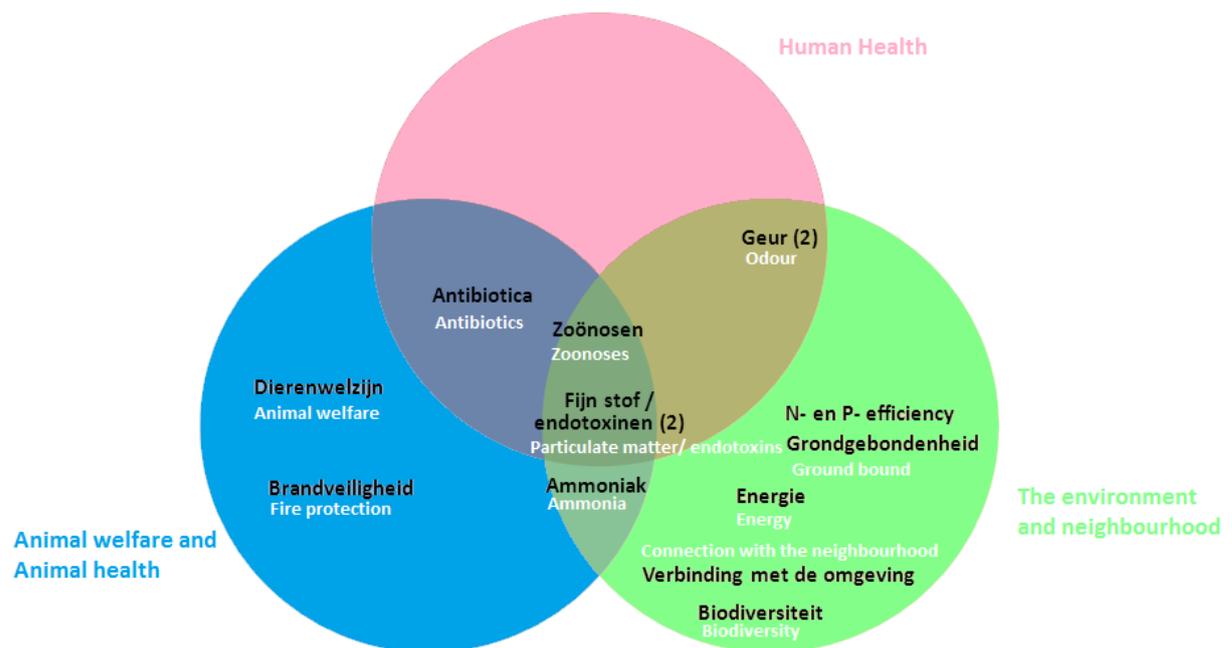


Figure 14: Subjects and sub themes included in the BZV (BZV, 2015)

### Certification procedure BZV

The build-up and procedure of the BZV cannot be compared with the other quality systems, because the BZV works with a system to score points instead of compliance with certain standards. The BZV consist of three pillars:

- Certificates
- Environment and neighbourhood
- Innovation

The first pillar *Certificates* is included in the BZV, because the BZV will not create additional regulation pressure, because many of the existing quality systems do already perform extra-legal activities in case of the 'BZV subject' animal welfare and animal health. Examples of quality systems that met these sub themes are *MDV* and *IKB Varken*. The participation in these quality systems gives the farmer that is obligate to meet the BZV legislation, additional points. In case of *MDV* the additional points (between 2-9) depend on the degree of adjustments to the farm, so a new- or remodelled livestock farm. In case of *IKB Varken* the farmer can earn additional points (8) *Brabantse Zorgvuldigheidsscore Veehouderij*, version 1.1, 2015). The additional points scored are count and divided



by a conversion factor of 40. In case of the pillar *Environment and Neighbourhood* the remaining sub themes presented in (figure 14) will be examined. Per sub theme a maximum of 100 basis point can be scored in case of the sub theme 'Connection with the neighbourhood' is the maximum 50 basis points, because the standards set in this sub theme are in the opinion of the BZV easily achievable. This means that the farmer can score maximum of 750 basis points for the subject *Environment and Neighbourhood*. To this score a conversion factor of 250 is linked. The reason for the conversion factors is because the BZV score is from 6 to 10. The score start with 6 points, because this indicates the farmer meets the legal requirements. The pillars *Certification* and *Environment and Neighbourhood* need to score points above the 7 points, because then the farmer gets space for innovation the third pillar of the BZV. Figure 15 presents the division of points used by the BZV. In (annex 10) an example of a BZV calculation score for a pig husbandry farm is presented.

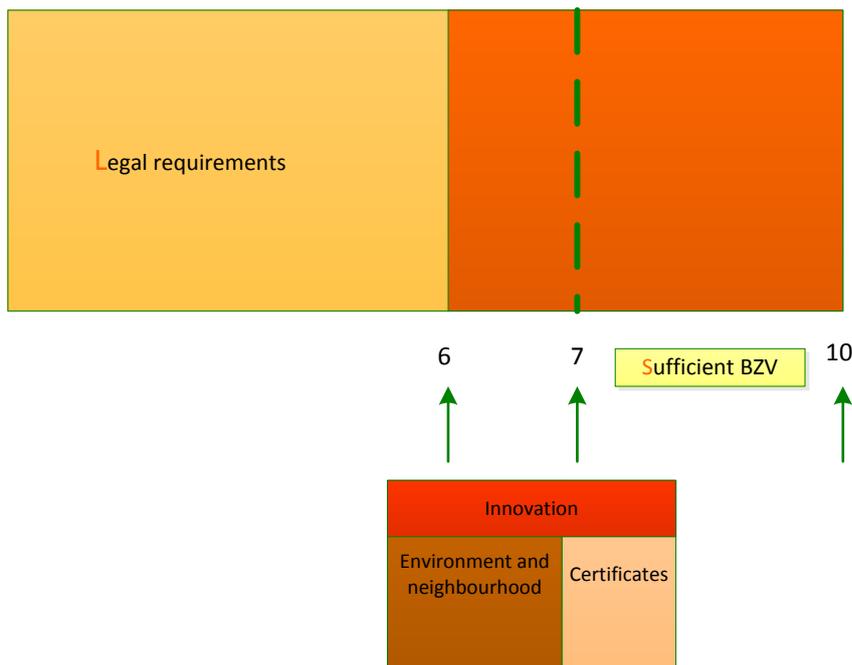


Figure 15: Points division BZV, Adapted (BZV, 2015)

The certification of the BZV is arranged by the municipality where the farm is located in. The control of compliance is also arranged by the municipalities. The control consists out an administration control and a farm visit. There is no sanction framework involved as in IKB, because not complying towards the earlier scored basis points means one warning and otherwise a mulct. In case of burden of odour, particle matter and ammonia there is a yearly control by the *Province of Brabant*.

### Future perspective BZV

The BZV needs to continue development, especially in case of human and animal health. The aspiration of the BZV is that there will be developed certificates that cover all the sub themes included in the BZV, so that these certificates are enough to fulfil a sustainable farm management and that the addition of the pillar *Environment and Neighbourhood* will not be needed anymore. However, before this can be realized the *Panel Carefull Animal Husbandry (Panel Zorgvuldige Veehouderij)* will continue gathering additional and new information about the included sub themes, because this helped the BZV to stay in front in case of new developments in animal husbandry in case of ammonia, energy, biodiversity, zoonosis etc. Once a year the developments and additions to the BZV will be communicated to the BZV farmers. However, the BZV hopes that it eventually will become superfluous. Therefore, the BZV hopes that the chain is challenged for developing new certificates that cover all sub themes of the BZV, linked to new revenue models to create a new 'license to produce', because the BZV is intended to bring and keep the total chain in motion.



## 2.4. Possible connection features between farmer and citizen

The possible ways of connection between farmer and citizen-consumer researched is based on the requirements of more connection by the society and politics, which is also described in the *Implementation agenda sustainable farming (UDV)*. Thereby, the development of the company etiquette is partly linked to dialogue and needs to generate society acceptance, which partly can be realized through involvement of the citizen-consumer. But 'How does a farmer need to react at the developments of more connection with society?' The described models in this chapter gains insight in the potential needs of a farmer linked to connection, the experience world of a citizen-consumer and potential levels of participation of the citizen-consumer in a farm. The different levels of connection can be linked to society activities. However, the farmer needs to stay in charge in the possible ways of connections and the application of the linked society activities, because the development of the company etiquette will give farmers the opportunity to act pro-active instead of obligations for performing society activities as in the *Brabant Carefulness score (BZV)*. (NVV, 2015).

### Connection

In the research of *Veen et al., (2010)* connection means the relation between the agricultural entrepreneur and the citizen wherein there is interaction. Interaction will lead to discovering the world in little steps in a group of people which will lead to a joint vision about shared experiences. The results of interaction and communication are that people understand and agree with certain aspects involved in farming. In the connection with the citizen-consumer a division can be made between products, services and perception. These ways of connection will eventually bring the citizens to the farms. However, in the description of potential activities for product, service and perception connection the focus is foremost on the multifunctional farming which makes the possibility to make connections incomplete, because multifunctional farms are not able to start connecting. One of the key words of connection is transparency, because the farmer is open about what he/she is doing and how the farmer is managing the farm. The Winter, M. et al (2007) distinguishes seven outlines of transparency: website, open day, company visits, education, recreation and the opportunity to think along and help with decisions. The transparency will lead to connection, because of the interaction. The openness of the farmer, dialogue of management of the farm and other additional businesses involved in farming will lead to a closer connection between farmer and citizen-consumer which is essential for creating a strong society foundation for the pig sector.

### Hierarchy of need

Agricultural entrepreneurs are having different reasons to connect with the citizen dependent on what the entrepreneur would like to achieve. This connection is depending on the need hierarchy of the farmer. A farmer can have the need for social contact, recognition or possibilities to sell new products/services. The general hierarchy of humans starts with the basic needs: eating, drinking and sleeping. The general hierarchy is essential, however after these needs there are four other needs of hierarchies that are deciding the different ways of connecting per farmer. In figure 16 are the need hierarchies of Maslow presented (*Veen et al., p17, 2011*).



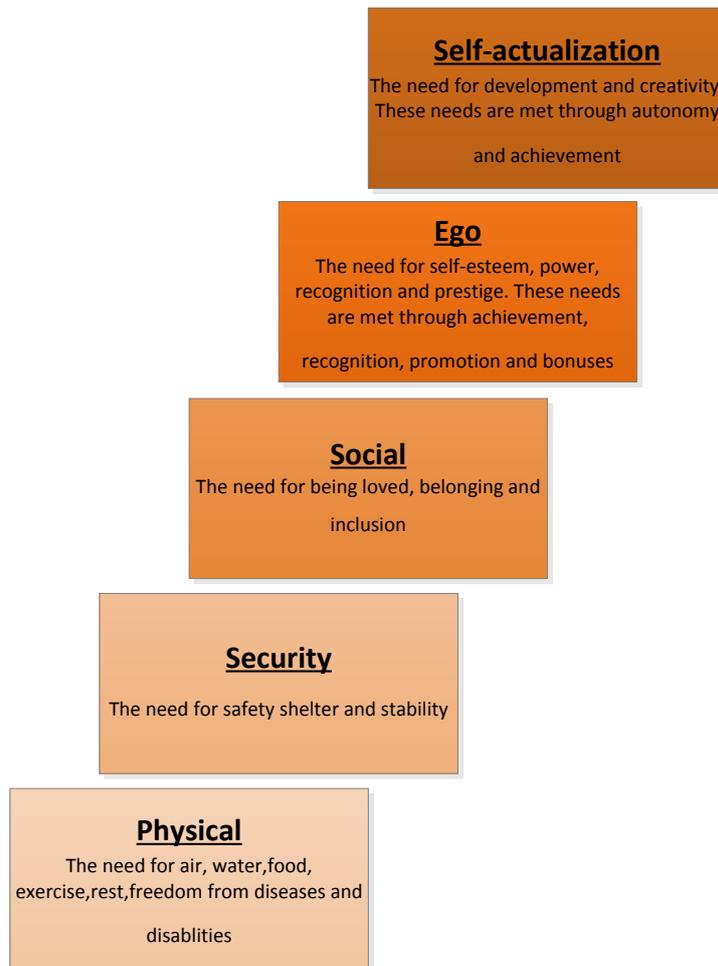


Figure 16: Maslow's hierarchy of needs, Adapted (Veen et al., p 17, 2010)

If a farmer for example does have need for new social contacts, then there is the possibility to start a farm shop. However, if a farmer has the need for actualization then the farmer may prefer searching for developing a new concept. The ego part of the hierarchy of need is linked to expectation, because this farmer expects to generate recognition, promotion and an extra income of a connection with the citizen. (Veen et al., 2010). In the model of Maslow's comes forward that the social needs of people are the key to generate the connection between farmers and citizens. So the farmer needs to focus on topics like transparency, animal health, animal welfare, the environment, generalising etc. The hierarchy of needs of farmers generates a wider network which eventually can lead to a network wherein the farmer can involve citizens to think along, helping with decision making and also self-actualisation of the farmer.

### Experience world

The hierarchy of needs from 'Maslow's' revealed that the need of a farmer can offer a direction in how to connect with a citizen-consumer. However, besides the knowledge about the needs of the farmer it will also be beneficial to gain insight in the experience world of the citizen-consumer. The experience world of a citizen-consumer can clarify the expectations of the citizen-consumer. So there are different reasons like products, services, relaxation, culture and adventure etc. which can trigger the citizen-consumer to experience the countryside. The experience of the citizens-consumer is a cycle and does not need to be linked to a particular person or a particular direction, because the world of experience can switch in one and the same person.



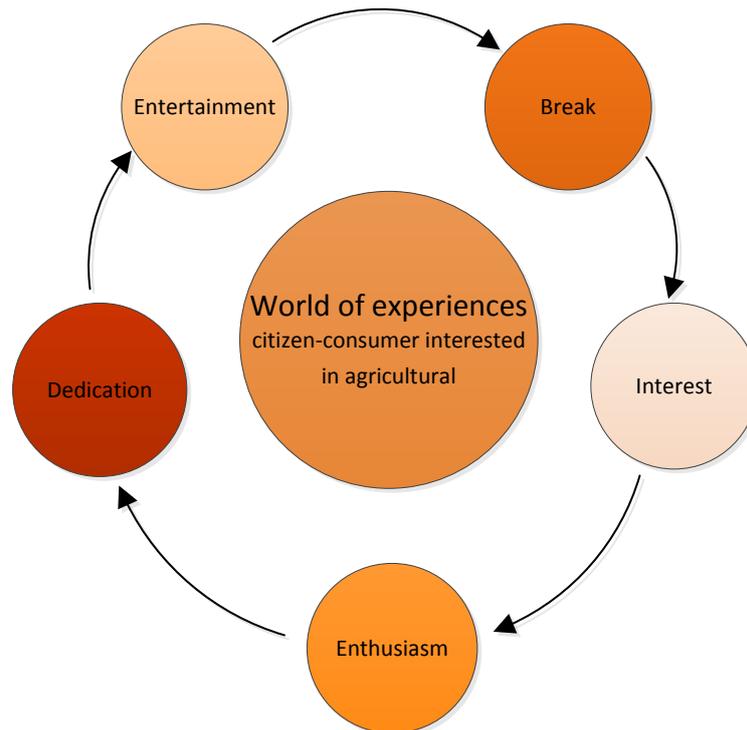


Figure 17: The cycle in the experience world of the citizen-consumer, adapted (Veen et al., p 17)

The experience world of the citizen-consumer is divided into 5 different levels. There is a structure in the experience cycle, but this does not mean that a citizen-consumer is placed in one of the five circles, because the need for a certain experience can fluctuate per moment and in one and the same person. The contents of the cycle have differences in activities that can fit the experience level. The differences will be explained to create understanding about this cycle, which can help the farmer to respond to this need inquiry to experiences agricultural. The contents entertainment, break, interest and enthusiasm are focused on different levels to experience the agricultural sector. The topic entertainment is focused on sociability and comfort, in other words: an uncomplicated form of entertainment. Another reason that citizen-consumers would like to experience the agricultural neighbourhood is to take a break. Work stress is high and also the high expectations of today's society decreased the need for an easy, relaxed and outer space experience. Social activities that can fit these worlds of experience are farms with the availability to stay and the possibility to really experience the country-side. There are more activities to create this experience, but these are potential examples. Another world of experience, and also an important experience is the interest in agriculture by citizen-consumers. This world of experience is essential, because in this stage the farmer gets the opportunity to explain to the citizen-consumer what animal husbandry means. In this part of the cycle there is interest to understand the unknown. The interest of the citizen-consumer can be triggered by several activities. For example, guide tours, farm education and dialogue. Besides the interest topic there is also the world of experience wherein the citizen-consumer is enthusiastic and will experience the farm by activities. In this world of experience the citizen-consumer has the need to discover the farm. The types of activities of farms that can be connected to this world of experience are sight stables, region markets and open days. The end of the cycle is dedication; this experience is at such a level that the citizen-consumer will experience the farm by joint working. This happens if a citizen-consumer experienced the agricultural neighbourhoods that positive that he/she would like to be more involved. This level of experience is a dedicated citizen-consumer that would like to experience the agricultural sector as ordinary.



## Involvement and say

Another way of looking for the connection between the citizen-consumer and farmers can be researched by participation of a citizen-consumer. There are different ways of participating citizen-consumers into a farm; however the farmer is in charge in which kind of way the farmer would like to involve the citizen-consumer. For participation is there a model developed by *Arnstein (1996)*, this model is developed to decide in which degree the citizen is required to think along with the farmer. Over the years the model has adapted to 5 layers. Figure 18 present from the bottom to the top are the following steps of participation involved; informing, consulting, advising, co-producing and decision making.

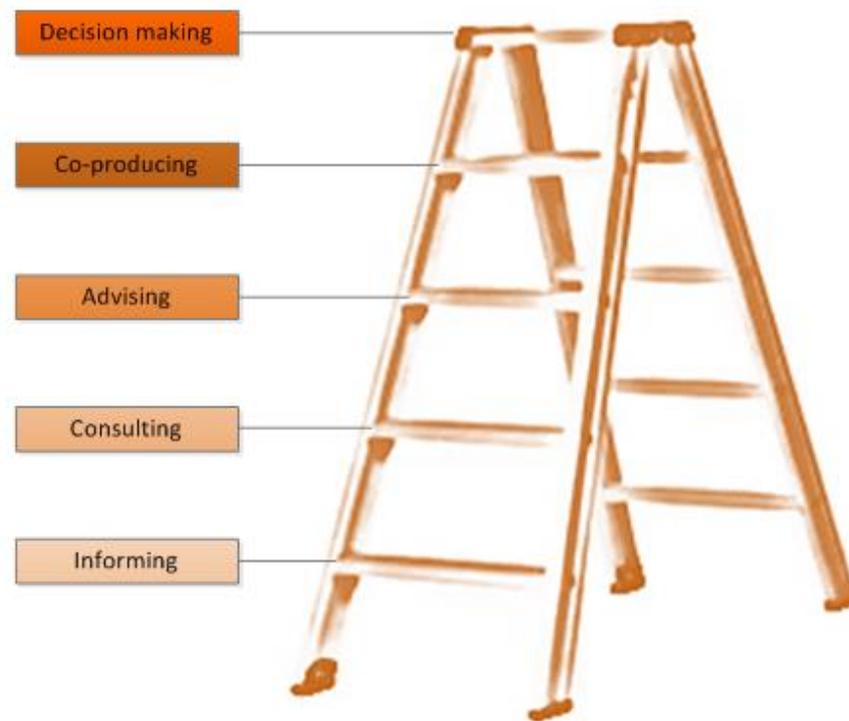


Figure 18: Participation ladder, Adapted (Veen et al., p 19)

The participation ladder presented in figure 18 gives the citizen the possibility to think along with the farmer. The definition of these 5 layers is presented in (annex 11). Besides this participation ladder which gives the citizen-consumer the possibility to think along, there are also two other participation ladders presented *De Nooy-van Tol and Verschuur (2010)*. The other participation ladders are focused on joint working (annex 12) and citizen-consumer and farmer are doing business together (annex 13). The aim of all ladders is to bring citizen-consumers and farmers together by offering the citizen-consumer the possibility to take initiative and responsibility into an agricultural business. The level on the ladder gives insight in to which extends the farmer would like to involve the citizen-consumer. However, the enthusiastic and responsible attitude of the citizen-consumer mostly offers the farmer a more open state of mind which means that the products are becoming more a product of both parties. The practical involvement happened by the participation ladder gives also an instinctive involvement in an agricultural business.



### **The five tastes of connection**

The need-hierarchy of a farmer, citizen and level of participation can give direction in which potential society activities can fit the farmer. However, in line with this model there are the five tastes of connection. The connections are called tastes, because it needs to be clear that in these five tastes there is a difference in the way a citizen is connected, without a level of better and worse connection. The content of the tastes are different in content and intensity, but all tastes are valuable for a potential connection. The tastes of connection are distinguished as:

- Citizen as visitor
- Citizen as Neighbour
- Citizen as Gold card member
- Citizen as partner
- Citizen as Con-joint worker

Besides the awareness in the hierarchy of needs of farmers and citizens the most suitable taste and level of participation, the connection is also dependent on the farm situation. The region, location, another sales market and also the company type can have influence on the involvement of the citizen, in a particular taste and level of participation. The farm situation influences the possibilities of society activities per individual farm, because for example different citizen workgroups in the taste 'partners' cannot easily be realised by farrowing and gestating sows because of hygiene measures and risks for potential disease transmission. However, these tools can give the farmers a direction by making the connection with the citizen-consumer wherein the connection preference of the farmer is the starting position. The overview of the connection tastes, the content of the connection, the levels of the participation ladder, the experience worlds of the citizens, competences for the farmers and the society activities linked to these different levels of connection is presented in table 12



1.The five tastes of connection	2.Content	3.Topics participation ladder	4.Experience citizens	5.Competences farmer	6.Society activities
<b>Visitor</b>	<ul style="list-style-type: none"> <li>- Brief, once-only company visit</li> <li>- Not binding ancillary activity</li> <li>- Maintenance landscape</li> <li>- Region fair, local market</li> </ul>	Informing	Entertainment	<ul style="list-style-type: none"> <li>- Communication skills</li> <li>- Telling the story, transparency</li> <li>- To welcome</li> </ul>	<ul style="list-style-type: none"> <li>- Website</li> <li>- Open days</li> <li>- Region fairs</li> </ul>
<b>Neighbour</b>	<ul style="list-style-type: none"> <li>- Area processes</li> <li>- License to produce</li> </ul>	Consulting	Interest	Previous + <ul style="list-style-type: none"> <li>- Society orientation</li> <li>- Focus towards the environment</li> <li>- Tools stakeholder management</li> </ul>	<ul style="list-style-type: none"> <li>- Sponsor activities</li> <li>- Reveal of the Significance for the region</li> <li>- Presage common problem</li> <li>- Citizen panel/ kitchen table conversations</li> </ul>
<b>Gold card member</b>	<ul style="list-style-type: none"> <li>- Ancillary activities like concern and subscription</li> </ul>	Advising	Interest	Previous + <ul style="list-style-type: none"> <li>- Vision developing towards concern citizens</li> <li>- Analysing the needs of citizens, listening to citizens</li> </ul>	<ul style="list-style-type: none"> <li>- Citizen panel</li> <li>- Contentment examination</li> <li>- Patient council/ elder organisation</li> <li>- Newsletter</li> </ul>
<b>Partner</b>	<ul style="list-style-type: none"> <li>- Area processes</li> <li>- Public private cooperation</li> <li>- Schools</li> </ul>	Co- producing	Ecstasy	Previous + <ul style="list-style-type: none"> <li>- Cooperate, communicate</li> <li>- Deliberate, fine tuning in cooperating</li> <li>- Team rolls, volunteers</li> </ul>	<ul style="list-style-type: none"> <li>- Joint strategy and business plan</li> <li>- Work groups</li> <li>- Involvement volunteers</li> </ul>
<b>Con-joint responsible</b>	<ul style="list-style-type: none"> <li>- Pergola companies</li> <li>- Citizen carries the risks</li> <li>- Big financial involvement citizen</li> </ul>	Participating in decision making	Attachment	Previous + <ul style="list-style-type: none"> <li>- Build-up of commitment</li> <li>- Convey vision</li> <li>- Build-up network</li> <li>- Organising and delegate</li> </ul>	<ul style="list-style-type: none"> <li>- Decision making organ</li> <li>- Clear-up Rights and duties</li> <li>- Shareholder meeting</li> </ul>

Table 12: The five tastes of connection, content, participation, experience world citizen, competences and society activities Adapted (Veen et al., p 29, 2010)



### 3. Method

#### 3.1. Research design

The aim of the qualitative research was to collect insight in the opinion of pig farmers about the idea to develop the company etiquette focused at, the company appearance and the fit of the pig farm into the neighbourhood. The research is foremost focused on the opinion of the farmers, because the *NVV* is the interest group for pig farmers and the subjects, design and implementation of the company etiquette needs to be chosen 'For and By' the opinion of the pig farmers. In this research desk research is performed to gather information about existing quality labels, society developments, the politics and possible connection features between farmer and citizen-consumer. The field research was started at the *Farming day's intensive livestock (LIV) (Landbouwdagen Intensieve Veehouderij)*. The other field research performed was the performance of interviews with experts in the fields of certification, society activities and communication linked to image problems.

The research started with an inventory research at the *Farming day's intensive livestock (LIV)*. The *LIV* fair presents new developments and innovations related to intensive farming and give the *NVV* the opportunity to recruit new members and to give existing *NVV* members the opportunity to ask questions or share difficulties etc. This inventory research was a start-up to understand the opinion of the farmer and their reaction towards the idea of the company etiquette. In total 30 pig farmers were interviewed and have given direction to compose the online questionnaire. The field study focused on the society activities performed by the pig farmers and their opinion about the company etiquette. The specific information and data related to the research about developing company etiquette to improve the image of the pig sector are examined by performing desk research including literature from primary, secondary and tertiary resources.

The literature review answered three of the four main questions and offers information for discussing the results of the online questionnaire. The literature review starts with describing the society developments linked to Animal Husbandry and the *Implementation agenda sustainable farming (UDV)*. The second part of the literature focused at the political procedure, Ministries involved in Animal Husbandry, political controlling institutes involved in animal husbandry and the politics and legislation involved in the pig sector. The third part of the literature described the existing certifications applicable in the pig sector and the differences between these quality systems. The fourth part of the literature described the possible connection features between farmer and citizen-consumer.

The design of the online questionnaire is performed in the same time as the literature review, because the thesis deadline was tight and the online questionnaire had to be sent rapidly. The online questionnaire is online designed with the use of the online program *Survio*. The subjects researched in the online questionnaire were society, dialogue, the company etiquette and the design and implementation of the company etiquette.

#### 3.2. Data collection

The data is collected by an online questionnaire programme *Survio*. The online questionnaire consisted of twenty-eight questions. In total 1303 questionnaires were sent by e-mail, while (n=232) questionnaires are completed and received. The online questionnaire was available from the first of April till the first of May. In this period of time one reminder email is send, because (n=104) questionnaires were received at the sixth of April which had not provided trustworthy results. The (n=232) questionnaires completed out of a sample size of 1303 (almost 18%) of the pig farmers will give a confidence rate of 90%. Besides the online questionnaire, data is also collected by interviews with different experts in the field. The reason for these interviews was collecting data about certifications, society activities and different communication approaches for image problems and possible connection features between farmers and citizen-consumer.

1) The first interview was with Luc Doornhegge of CoMore, the certification institute that performed the certifications for the quality labels integrale keten beheer (IKB), Beter leven keurmerk (BLK), Varken van



morgen (VVM) and Maatlat Duurzame Veehouderij (MDV). The reason for performing this interview was to get more understanding about the certification procedures and to brainstorm about potential ways to implement a company etiquette what should not be obligate, but needs to be compliant by the pig farmers.

2) Also interviews were performed with organisations that are socially active in animal husbandry. The reason for these interviews was collecting information about the implementation, design and promotion of these organisations to understand the value and positive direction of this kind of initiatives.

a) The first interview with a farmer that was socially active was with *Nicolien Peek* of organisation *Boerderij in de Kijker*. This organisation performed farm education for primary schools, in *Bunnik*. The reason for interviewing this organisation was gain insight in what a society activity like education can bring the farmer and how an organisation like *Boerderij in de Kijker* can be indirectly linked to the company etiquette.

b) The second organisation that performed society activities was *Stap in de stal*. The interview was performed with *Gerdy Haselhorst* and *Anneke Jeeninga* that are running a multifunctional care farm in *Lemele* with an intensive pig farm of 40 pigs. The reason for interviewing these farmers were, because *Stap in de Stal* is organising the *Weekend van het Varken* which is one of the biggest society activities known of the pig sector. Thereby, *Stap in de Stal* performed a research about the opinion of the citizen-consumer which showed a positive result in comparison with previous years (*GfK, 2012*). Also there was interest for what participating in an organisation as *Stap in de Stal* will bring the farmers and what can the sight stable concept linked to *Stap in de Stal* mean for the total sector and colleague pig farmers.

3) The last two interviews performed where focused at the image of the pig sector. The image of the sector is partly affected by the gap between citizen-consumer and farmer. The gap gives pressure groups and the media the opportunity to continue generating negativity which can hardly be broken. Therefore, two communication experts in animal husbandry are interviewed.

a) The first interview was with *Prof.dr. Noele Aarts, communication science, Wageningen UR*, the involved expert in the research about the connections between farmers and citizens. The interview was focused at potential connection models and how to react at a negative image in a sector with this many parties involved.

b) The other communication scientist spoken was *Ester Veen, communication science, Multifunctional and Urban Agriculture, Wageningen UR* and the head author of the report about the connection between farmer and citizen. This interview was foremost focused at the communication models described in the literature review. Besides this was asked what both communication experts will do to diminish the negativity towards the pig sector and how they think company etiquette focused at company acceptance, appearance and suitability needs to be developed.

### 3.3. Data processing

The data of the inventory research performed at the *LIV* are processed with the use of *Microsoft Excel*. The results of the online questionnaire are automatically saved in *Microsoft Excel*. The figures are made out of the automatically saved results of the online questionnaire. Besides this, the results are copied into *IBM SPSS statistics* to study for potential correlations between the questions performed in the online questionnaire. In the online questionnaire no questions were asked that can be connected to a scale variable, because the research was based at the opinion of the farmer and for the *NVV* is not essential to look for differences in sex, region or age. The questions asked at the *LIV* and the online questionnaire are presented in (annex 10 results). The highest percentage of the farmers will be men and the differences between age and region will not be essential for the design and implementation of



the company etiquette, because the company etiquette needs to fit all ages and needs to be of value for all pig farmers over the Netherlands. The interviews performed are processed with use of *Microsoft Word*. The description presented in the results gives a summary about all the answers given and are used in the discussion and recommendation of the research.



## 4. Results

### 4.1. Results inventory research LIV

The first step of the research was an inventory research at the *Farming day's intensive livestock (LIV)*. The result of this inventory research gives an idea about the opinion of the pig farmers over the idea to develop company etiquette focused at local integration and company appearance. The results of this inventory research have given a direction for the questions of the digital questionnaire which was focused at the design and implementation of the company etiquette. The results are not significant, but are giving a first impression of the reaction of the pig farmers. In total (n= 30) questionnaires are processed.

#### Results inventory research LIV

Variable	Percentage	Value (n=30)
Yes	80.0%	24
No	10.0%	3
Doubts	10.0%	3

Table1: Do you think that the pig sector becomes more representative through a company etiquette focused at local integration and company appearance? (LIV)

Table 1 presents that in the thirty questionnaires performed at the *LIV* (80%) of the (n=30) farmers stated that the pig sector will become more representative through a company etiquette focused at acceptance, suitability and appearance of the pig farm. The other (20%) (n=6) is divided, (10%) had doubts, because of costs that needs to be made. The remaining (10%) that did not believe it will help to become more representative stated that the negativity of pressure groups will continuously leads to a negative image which cannot be resolved by developing a company etiquette focused at appearance and local integration.



## Results inventory research LIV

Variable	Percentage	Value (n=30)
<b>Yes</b>	86.7%	26
<b>No</b>	10.0%	3
<b>Doubt</b>	3.3%	1

Table 2: Do you think that company etiquette can contribute to social acceptance? (LIV)

Table 2 presents the percentages of pig farmers that believe that the company etiquette can contribute to social acceptance of the pig sector. In total (87%) of the (n=30) pig farmers spoken stated that it will help to generate social acceptance. The (10%) that answered no did not believe it will help, because the social acceptance is not only based at appearance and integration of the company, but also on other topics like animal welfare, animal health etc. The farmer that had doubts about the etiquette where foremost not enthusiastic about the idea that there will be developed a new quality label, especially if this company etiquette needs to be compulsory.

The other question asked at the LIV where focused at the society activities performed by the pig farmers. These questions were focused at the society activities performed by the farmers to gain insight in the performance of society activities and the impact of these activities. The other figures of the inventory research are presented in (annex 10, results LIV)



## 4.2. Results online questionnaire

The main question of the research aimed at the design and implementation of the company etiquette. Also, the opinion about the main-subjects for the company etiquette is questioned. The objective for developing the company etiquette focused at company acceptance, appearance and suitability which eventually need to generate society acceptance and a representative pig sector that will diminish negativity towards the pig sector. The results of the online questionnaire will start with the results about the subjects that potentially can be used in the company etiquette. After the results of the subjects the results of the design and implementation of the company etiquette will be presented. Thereby, the results for society acceptance and a representative pig sector is presented, because this is linked to the research objective that stated that the negativity towards the pig sector needs to be diminished by development of the company etiquette. The other results of the online questionnaire are presented in (annex 10).

### The society

Variable	Percentage	Value (n=232)
Yes	95.7%	222
No	4.3%	10

Table 1: Do you currently take into account the needs of society?

In table 1 the percentage of taking in account the needs of society can be seen. The pie chart indicates that 96% of the (n=232) responding farmers focuses at the wishes of society. The 5% that will not currently react at the 'wishes of society' stated that the citizen-consumer first needs to pay for the additional activities a farmer need to full fill to meet the needs of society. Thereby, the farmer does not think that the demands of society are really based at the needs of the citizen-consumer such as transparency, animal welfare, globalising etc., but more at the needs of pressure groups such as *Wakker Dier*.

### Dialogue

Variable	Percentage	Value (n=232)
Yes	85.0%	198
No	15.0%	34

Table 2: Do you perform the dialogue with the neighbourhood?

Table 2 presents the performance of dialogue in the *neighbourhood*. Meant by performing the dialogue are formal meeting, informal meeting, open days, guide tours, social media etc. Of the (n=232) respondents 85% reacted that there is conversation with the *neighbourhood*. The other 15% will not perform the dialogue, because of multiple reasons. The first reason stated by the 15% was that it will not help to earn more money for the production of pigs. Another reason stated was that the legislation for production of pigs was met, what indicates that the neighbourhood have no right to complain. Foremost is stated that it will not help the farmers, because the negativity created by pressure groups is that high that the individual farmer can do nothing to diminish this negativity created nationwide.



## The Company etiquette

Variable	Percentage	Value (n=232)
Yes	72.0%	167
No	28.0%	65

Table 3: Do you think that the company etiquette will contribute to society acceptance?

Table 3 presents the percentage of the respondents that think the company etiquette will contribute to society acceptance. In total 72% stated that the company etiquette will contribute to society acceptance. The reasons that farmers believe in the contribution of the company etiquette is that farmers believe the company etiquette will generate space for sharing the 'real story' about the pig sector. Thereby, the focus for the farm appearance, representative and local suitability works, because this creates space for interaction. The 28% that indicates that the company etiquette will not contribute to society acceptance is foremost focused at the fact that the negative impact created over the years will not be resolved with the company etiquette, because there are much more aspects involved. Also, the negative impact of pressure groups and media will have the lead and will always negative influence the society.



## Subjects' company etiquette

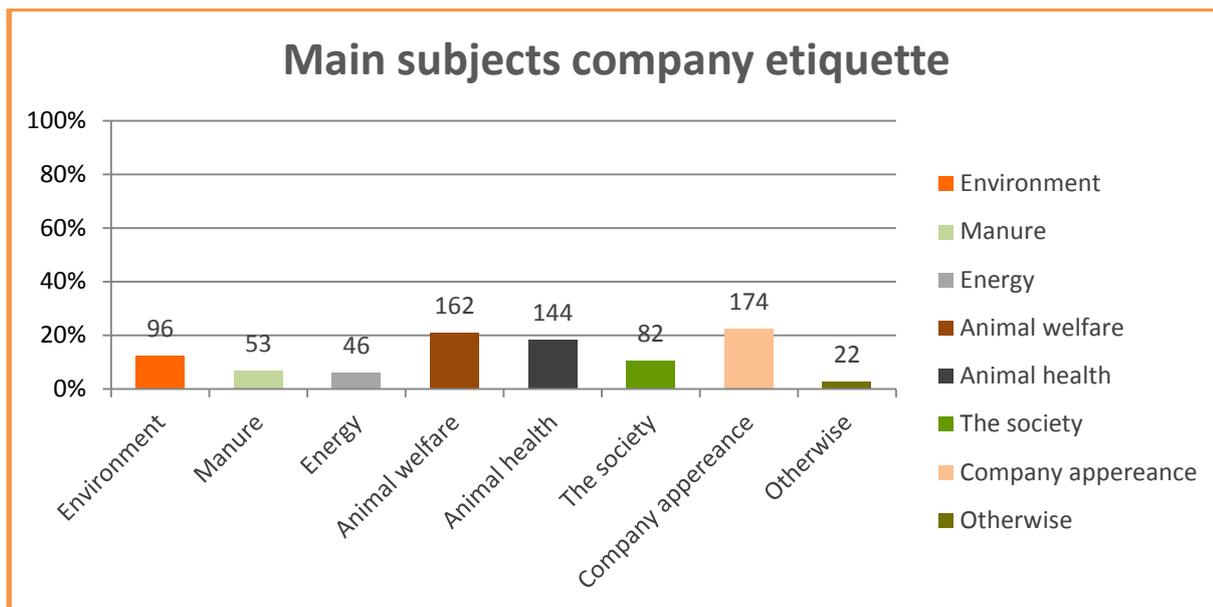
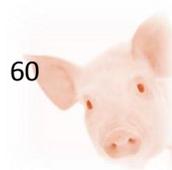


Figure 4: Which subjects should be included into the company etiquette (multiple answers possible)?

Variable	Percentage	Value (n=779) answers
Environment	12.3%	96
Manure	6.8%	53
Energy	5.9%	46
Animal welfare	20.8%	162
Animal health	18.5%	144
The society	10.5%	82
Company appearance	22.3%	174
Otherwise	2.8%	22

Table 4: Percentages and numbers of answers linked to the questions about the main subjects

Figure 4 presents the main subjects included into the company etiquette by opinion of the farmer. In answering this question there was the possibility to choose multiple subjects. The possibility to choose multiple answers resulted in the high values of answers described. The highest value of the main subjects for the company etiquette is the appearance of the company (22.3%). The second value is animal welfare (20.8%) followed by animal health (18.5%). The lowest values are manure (6.8%) and energy (5.9%). The percentage that had chosen for otherwise (2.8%) stated that all subjects need to be included into the company etiquette. Also stated by the respondents that chose for otherwise is that all these themes are already handled by the legislations involved in pig farming. Besides this the farmers stated that the choice options public health and nuisance of the pig farm was missing.



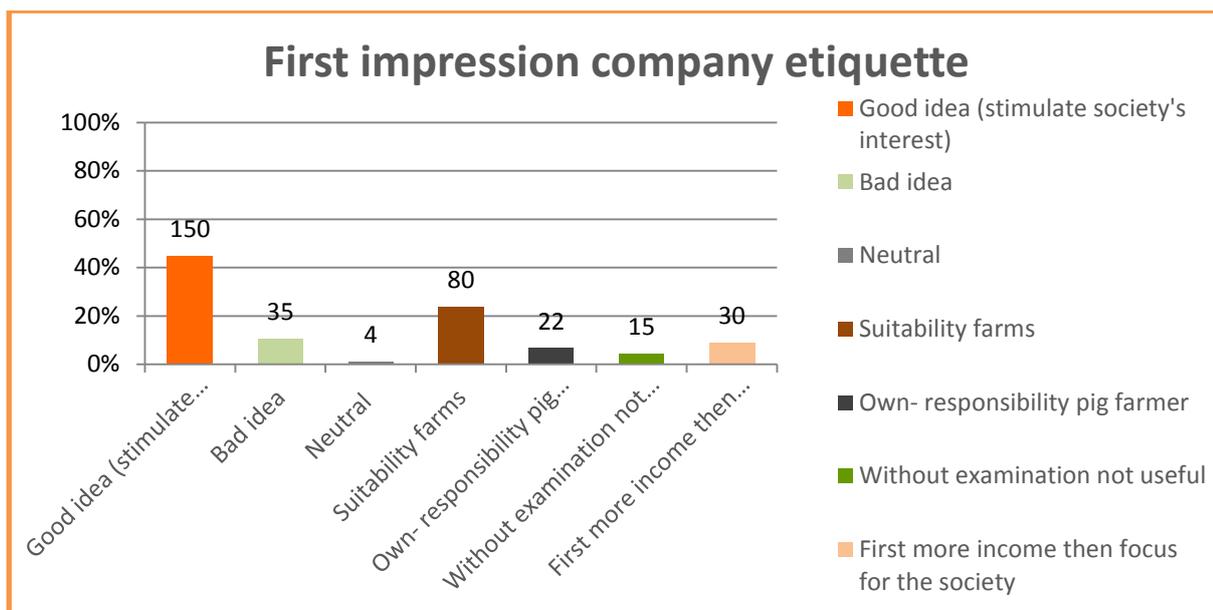


Figure 5: Can you explain the first impression of the development of the company etiquette which should contribute to social acceptance (Open question)?

Variable	Percentage (approximately)	Value (n=336) answers
<b>Good idea (stimulate society's interest)</b>	35.6%	150
<b>Bad idea</b>	12.1%	35
<b>Neutral</b>	1.4%	4
<b>Local incorporation farms</b>	27.7%	80
<b>Own- responsibility pig farmer</b>	7.6%	22
<b>Without examination not useful</b>	5.2%	15
<b>First more income then focus for the society</b>	10.4%	30

Table 5: Percentages and numbers of answers linked to the questions about the first impression

Figure 5 gives an overview of the answers given at the open question about the 'first impression of the company etiquette'. In answering this question an open answer is given. The possibility to give an open answer indicates the high values of answers described and mean the figure has no 90% probability, because a personal interpretation is involved. Overall, the highest value is positive about the idea to develop company etiquette (approximately 35%). Approximately 12% of the farmers think it is a bad idea and approximately 1% is neutral. Striking was the returning comments of the own-responsibility (approximately 7%) of the farmer without use of company etiquette. Also is stated that it will be beneficial for the suitability of farms in the neighbourhood approximately (27%), because the focus of the company etiquette is acceptance, appearance and suitability of the farm. Another comment stated by the idea to develop the company etiquette is that the farmer first want to generate more income before there is space for initiatives such as the company etiquette. Also came forward that the etiquette can be a beneficial activity, but the benefit will depend at the control of compliance, because without control moment the company etiquette will not be complied, which is answered approximately 15 times.



## Implementing company etiquette

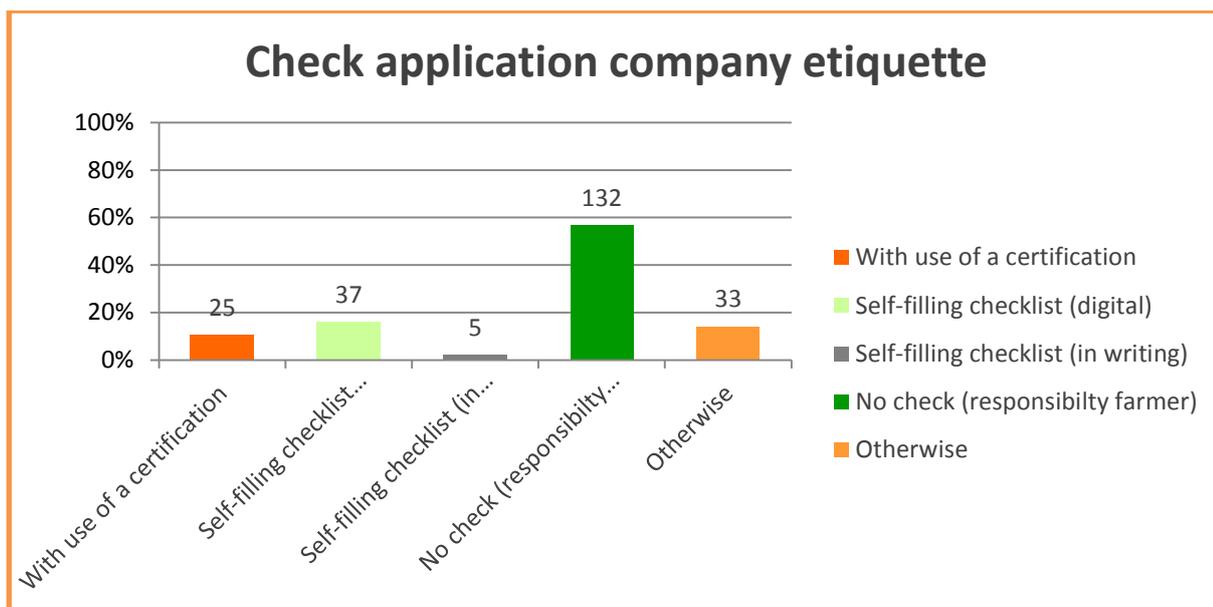


Figure 6: How the company etiquette does needs to be checked?

Variable	Percentage	Value (n=232)
<b>With use of a certification</b>	10.7%	25
<b>Self-filling checklist (digital)</b>	15.8%	37
<b>Self-filling checklist (in writing)</b>	2.1%	5
<b>No check (responsibility farmer)</b>	57.3%	132
<b>Otherwise</b>	14.1%	33

Table 6: Percentages and numbers of answers linked to the questions about the check of the etiquette

Figure 6 presents how the company etiquette needs to be audited in the opinion of the respondents. The figure presents that 132 of the 232 farmers have stated that the company etiquette needs to be their own responsibility. Secondly, the self-filling checklist (digital) (15.8%) is answered the most followed by 25 answers for the use of a certification. The lowest percentage is the self-filling checklist (2.1%) which is answered 5 times. The percentage that had chosen for otherwise (14.1%) stated, that performing an audit is not needed, but that it needs to be the responsibility of the farmer. Also stated by the farmers is that the company etiquette needs to become part of the *IKB*



## The Company etiquette

Variable	Percentage	Value (n=232)
Yes	75.4%	175
No	24.6%	57

Table 7: Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects?

Table 7 shows the percentage of respondents that expect and do not expect that the pig sector becomes more representative with use of company etiquette, based at their chosen main-subjects. With representative is meant the acceptance, suitability and appearance of the pig farm. From the total (n=232) respondents 75% expect that the sector becomes more representatives the remaining 25% percent do not expect the company etiquette will contribute to a representative pig sector. To gain insight in the reason for choosing yes or no there is asked why the farmers expect or do not expect the company etiquette will contribute to a representative pig sector. The reasons for answering “yes” is that the farmers that are performing bad in case of company suitability and company appearance are made aware of potential improvements which can change the local company acceptance. Another positive fact stated by the respondents is that the company etiquette will be a tool to involve and inform citizens-consumer which is also representative, but at another level. The reasons to respond “no” are that the sector can only become more representative when there is positive PR arranged by the farmers. Another reason was the negative image of the media, because one incident wills negatively influence the total sector and company etiquette cannot stop this major influence.



### 4.3. Interviews

The third part of the results is the interviews with experts in communication, certification, farm education and multifunctional farming. After the results the discussion part will indicate the remarkable results which eventually lead to the conclusion and recommendations of this research.

#### Interview 1

<b>Name</b>	Luc Doornhegge
<b>Organisation</b>	CoMore
<b>Date</b>	05-03-2015

At the 5th of March an interview was performed with *Luc Doornhegge*, located in *Zeist*. The aim of the interview was gathering knowledge about quality labels and the certification procedure. The main aim of the interview was to ask *Luc Doornhegge* how to implement the company etiquette without control moment.

The interview started with explanation about the structure of *CoMore* followed by the different quality labels facilitated by *VERIN*, a subsidiary of *CoMore B.V.* In the explanation of the certification procedures *Doornhegge (2015)* explained that it is essential to check compliance, because otherwise a quality label is not reliable which leads to questions that are actually tried to prevent (*Doornhegge, 2015*). Thereby stated *Doornhegge (2015)* that the participation in quality labels such as:

- *Integral ketenbeheersing (IKB)*
- *Varken van Morgen (VVM)*
- *Maatlat Duurzame Veehouderij (MDV)*

is the choice from the farmer, so in that case a control moment is not strange, because the farmer can also choose to not participate in a quality systems. Participating in a quality system requires control, to be continuously ensured about the required quality (*Doornhegge, 2015*). The idea for the company etiquette focused at the company acceptance, appearance and suitability is well- received by *Doornhegge (2015)*. However, *Doornhegge (2015)* advises to generate a low threshold for controlling the compliance, because otherwise it will be ruined by a small group which eventually will contribute in negativity which is tried to be diminished. Firstly stated *Doornhegge (2015)* that conditions as, participating in *IKB* can already give a quality direction of the management of the farm, because the subjects handled in *IKB* are close to the legislations in pig husbandry. The design *Doornhegge (2015)* would develop is a digital checklist wherein the farmer can check the company appearance, suitability and acceptance. However, besides the fact that the farmer can take their responsibility to check the criterion their selves, would *Doornhegge (2015)* recommend to let the control be performed by colleague pig farmers to keep the low threshold, but to ensure compliance and quality of the company etiquette. At the question how to involve as many pig farmers as possible answered *Doornhegge (2015)* answered that there always will be a group that do not want to participate, but therefore it is essential to focus at the group that want to participate, because this group can make a difference. In addition to this answer *Doornhegge (2015)* stated that if the goal is to involve all Dutch pig farmers that the control moment then needs to be facilitated by a professional certification institute, because otherwise the realization of controlling with colleague farmers is quiet harsh to arrange. Furthermore, *Doornhegge (2015)* stated that a new label of quality also need to have a lot of exposure to other parties and the target group, because this groups needs to feel the importance of this company etiquette which focused at contributing society acceptance. Also stated *Doornhegge (2015)* stated that the essence is that the pig farmers are proactive and self-reflective to follow this own responsibility checklist (digital) because then it will be a success. This can be compared with the other labels involved in *CoMore*, because the farmers need to sign up themselves, which means that they see the essence of such a quality label. Therefore, the task for the *NVV* is to stimulate the essence of the company etiquette which maybe can be easier generated, because the organisation protects the interest of the pig farmers, but this will not be a guarantee



(Doornhegge, 2015). Also, Doornhegge (2015) stated to focus at the *neighbourhood*, because the appearance of the company is mainly important for the *neighbourhood*, that it eventually will generate a positive sound to a wider area is a plus. At the end of the interview Doornhegge (2015) stated that the input of the citizen-consumer is missing, because the company etiquette is indirect linked to their wishes, but what are the wishes of the citizen-consumers exactly? Also, Doornhegge (2015) noted that the citizen-consumer needs to be involved in the compliance of the company etiquette together with the colleague farmers, but this might be better for a later stage of the company etiquette. To conclude, Doornhegge (2015) had good ideas about how to design and implement company etiquette which is used in composing the online questionnaire.



## Interview 2

<b>Name</b>	Nicolien Piek
<b>Organisation</b>	Boerderij in de Kijker
<b>Date</b>	23-3-2015

At the 23th of March an interview was performed with *Nicolien Peek* participating in the farm education initiative *Boerderij in de Kijker*, located in *Bunnik*. The aim of the interview was gathering information about the society activity, because what are the benefits of such an activity and what is the reason for participating in such an initiative. Also, questions were asked about difficulties involved in the organisation, which for example are influenced by society developments or political regulations.

Firstly, *Peek (2015)* stated that the participation in *Boerderij in de Kijker* was foremost based at be transparent to the *neighbourhood* and working with kids was a big plus. Thereby, the participation in *Boerderij in de Kijker* is extremely easy, because all educational materials are delivered by the organisation, only a certificate for *BHV* is needed and one education day on which the educational material is explained (*Peek, 2015*). The participation in *Boerderij in de Kijker* generates compensation of € 100, - per school class. However, this does not need to be the motivation to participate, because this compensation is negligible (*Peek, 2015*). The benefit of participating in such a social activity as noted by *Peek (2015)* is the opportunity to share what is happening in managing a livestock farm. Also comes forward that there is much ignorance by the children, but also the parents are so surprised by everything they hear and experience which gives it a needful feeling (*Peek, 2015*). The difficulties noted by *Peek (2015)* are that the primary schools have less money to spend in these kinds of trips which have resulted in a decrease of school classes which was 775 school classes in 2011 to 500 in 2015. This decrease can partly be blamed by the government, because the money available for these kinds of activities decreases. Noted by *Peek (2015)* is that money available for the schools is foremost spend to amusement parks which is a missed opportunity, because out of experience there is many ignorance. Thereby, noted *Peek (2015)* noted that it is wrong to let the teacher be the decider of the school trips over a year, because it needs to become compulsory to visit a farm at primary school. In addition, *Peek (2015)* stated that there are no pig farmers participating in *Boerderij in de Kijker*. At the question why *Peek (2015)* expects that pig farmers do not participate is answered: I don't know, but I expect that the farmers will not participate at their own initiative, however the organisation would like to involve all livestock animals so a pig farm is welcome (*Peek, 2015*). At the end of the interview was asked what *Peek (2015)* will do differently in case of these social activities? I think there are too many initiatives which can make it confusing. Therefore, it is essential that initiatives bundle their power, because the negativity of the media and other chain parties can only be counteract when the sector 'breathes one sound' (*Peek, 2015*). To conclude, *Peek (2015)* is enthusiastic for be transparency and information about animal husbandry. The difficulty is that the budget for schools is partly imposed by the government. At the question about why pig farmers do not participate she did expect that the own initiative is the potential reason.



### Interview 3

<b>Name</b>	<b>Gerdy Haselhorst en Anneke Jeeninga</b>
<b>Organisation</b>	Aan't Zandeinde (Stap in de Stal)
<b>Date</b>	24-3-2015

At the 24th of March an interview was performed with *Gerdy Haselhorst* and *Anneke Jeeninga* managing the care farm *Aan't Zandeinde* and participating in *Stap in de Stal*, located in *Lemele*. The aim of the interview was gathering information about the activities for society, because what are the benefits of such an activity and what is the reason for additional participation in *Stap in de Stal*. Also, questions were asked about potential tips and tricks at activities for society which can be easily implemented in a pig farm which eventually needs to generate social acceptance in the neighbourhood.

The reason for starting up a care farm as noted by *Haselhorst and Jeeninga (2015)* was foremost; because the stall needs to be adapted to other measures and that there was an intrinsic need to work with people in combination with pigs. Therefore, the farm affiliated to the *Rural Federation Agricultural and Care (Landelijke Federatie Landbouw & Zorg)* that is responsible for the quality label for Agriculture and Care. The federation is the interest group for care farms. The farm is also associated to *IKB* and *BLK* (one star). The reason for affiliation in the different quality labels stated by *Haselhorst and Jeeninga (2015)* is linked to creating trust towards the neighbourhood, because the quality for care and well-treated animals is essential in their working environment. The reason for association to the *Federation Care farms Overijssel and Vechtdal (Federatie Zorgboerderijen Overijssel en Vechtdal)* is; because the care farms are obligate to cooperate with the municipalities, because the health care system will become the responsibility of the municipalities (*Haselhorst and Jeeninga, 2015*). The farm also affiliated to *Stap in de Stal*, because this generates additional PR, Promotion and information at the *Stap in de Stal* website. After the motivation of starting the farm there was asked what kind of revenue model is associated to the care farm. The revenue model linked to the farm stated by *Haselhorst and Jeeninga (2015)* is that 90% of the income is earned by the care, 10% is earned by visitors and 0% is earned by the pigs which meant that the pigs are only the attraction to attract citizen. Another question was: Why the farm system remained an intensive farm system, because it seems that biological was suitable. The reason for intensive farming stated by *Haselhorst and Jeeninga (2015)* was: this can help the sector. We would like to give insight in our stable by participating in *Stap in de Stal* for all intensive pig farmers in the neighbourhood. Farmers are too busy most of the time to receive visitors or to explain their management; therefore our stable can give insight in how the system by colleague farmers may look like (*Haselhorst and Jeeninga, 2015*). *Haselhorst and Jeeninga (2015)* also noted that they do not understand why other farmers do not make use of farms that are multifunctional. Not every farm needs to be multifunctional, but these kinds of companies can help to show and inform about the total pig sector, which gives farmers that really need to generate their total income out of the pigs space to do their job without the social burden. This is the plus of the initiative *Stap in de Stal*, so the farmers that are too busy can send the citizens to a visitor's barn, which is a positive attraction for the total sector (*Haselhorst and Jeeninga, 2015*). *Haselhorst and Jeeninga (2015)* have the opinion that the sector needs to be more open for helping each other and to connect initiatives, because the company etiquette for the own farm is an important initiative, but it will not generate social acceptance on large scale. To conclude, the care farm is affiliated to different quality labels and federations and the initiative *Stap in de Stal* to generate trust, quality and positive PR for the sector. *Haselhorst and Jeeninga (2015)* also stated that multifunctional farming needs to be seen as a possibility for farmers to react at social wishes, without performing society activities at the own farm. Thereby, *Haselhorst and Jeeninga (2015)* noted that the power needs to be cooperation and participation in each other initiatives which will generate 'breathes one story' and at the long-term and increase in positivity for the pig sector.



## Interview 4

<b>Name</b>	<b>Prof.dr. Noelle Aarts</b>
<b>Organisation</b>	Wageningen UR
<b>Date</b>	10-4-2015

At the 10th of April an interview is performed with *Prof.dr. Noelle Aarts* communication expert of *Wageningen UR*, located in *Wageningen*. The aim of the interview was gathering additional information about the research *Verbinding tussen agrarische ondernemer en burgers (2011)*. Also questions are asked about other potential connection models and how *Noelle* thinks the connection between farmers and citizen-consumer needs to be fixed.

The interview started with the questions about the expertise in communication. The expertise noted by *Aarts (2015)* is image problems in a sustainable animal husbandry. This was also the direction the interview was focused on. Foremost stated *Aarts (2015)* that she likes the concept of the company etiquette, but that she would like to explain that this cannot contribute to image improvement, because there are much more parties involved. Therefore, *Aarts (2015)* referred to a book *Strategische communicatie principes en toepassingen of (Aarts et al., 2014)* wherein a model to analyse image problems explained that image problems cannot be counteracted by conscious communication.

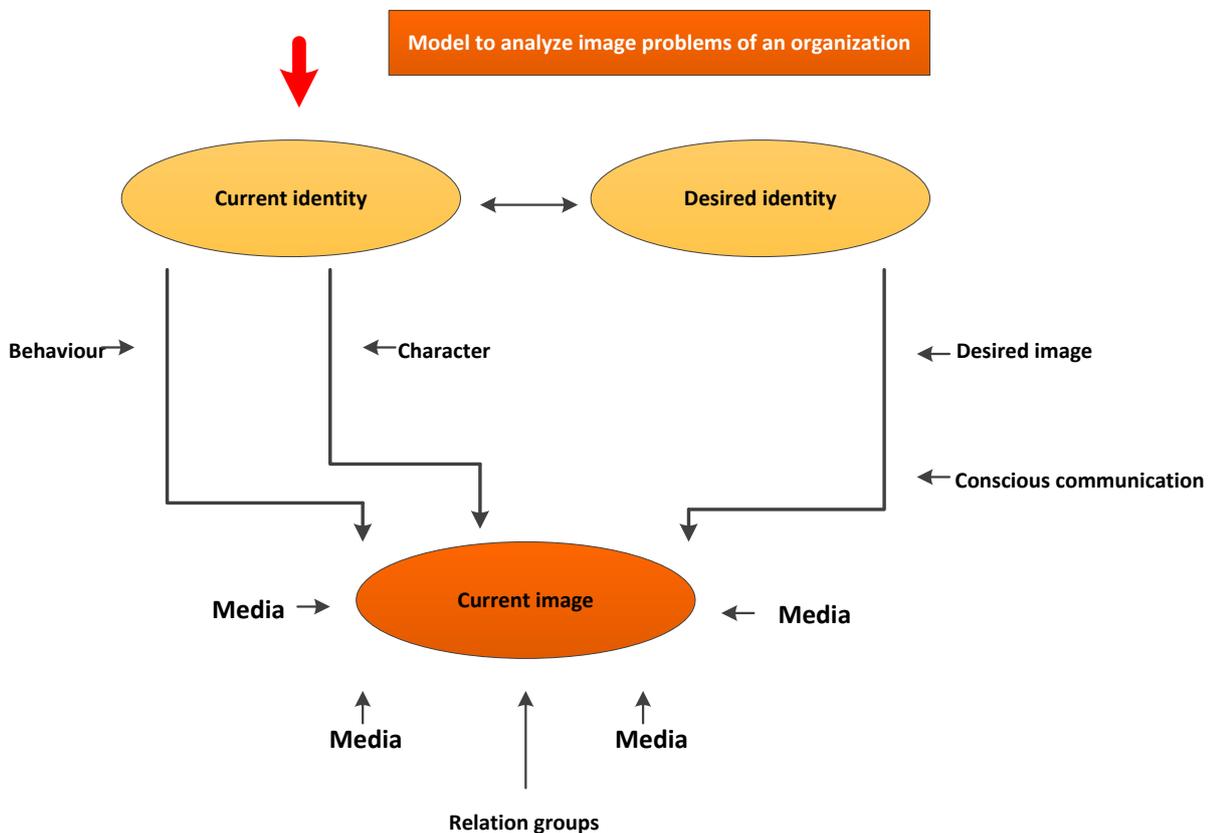


Figure 1: Analyses model for image problems, Adapted (Aarts et al., 2014)

The model noted by *Aarts (2015)* helped sectors to understand how other parties think of the company in this example sector. Therefore, the importance is to understand which signals are send and how is the sector seen by other parties? Therein the essence is to become aware of the conscious messages send and the unconscious messages send (Aarts et al., 2014). The analysis model is explained further during the interview by *Aarts (2015)* with help of the presented figure. The arrows in the figure do not have a direct relation between cause and effect. So can the factual identity lead to the desired identity, but this does not need to be the case. The model shows that the factual image of an organisation is established through different lines. The independent lines will be explained. The factual identity of an organisation in this case the pig sector resulted out of the company behaviour and character and has a big impact at



the factual image of the pig sector. The character is the characteristic sticks to an organisation so: is the organisation accessible, responsive, kind, strict, sociable or boring. The behaviour of an organisation is linked to the company activities, including the results of these activities. Also, the ways organisations are communicating are linked to the company behaviour. Think of how pig farmers are communicating with their *neighbourhoods*, do they radiate a positive sound or do they spread critical sounds about the things going on in the sector. The behaviour part is essential, because the media always tried to find openings to communicate negative messages out of an organisation which is directly linked to the factual image. The conscious communication is all the communication that tries to generate a positive image so in case of the pig sector open days, sight stables, brochures, company website etc. This is the reaction at the desired image which is the direct derivative of the desired identity. The relation groups that have direct impact at the factual image such as:

- The government
- Research centre
- Sponsors
- Implementing organisations
- Citizen-consumer
- Partners
- Environment organisations
- Action groups
- Political parties
- Interest groups

will constitute their own image for a company or in this case, sector. This is based at sector information, together with their experience within the sector. Therein, *Aarts (2015)* stated that the image judgement will differ per relation group. In the further description of the figure *Aarts (2015)* noted that when the factual identity is not in line with the desired identity this is immediately expressed in image problems. This means that the character and behaviour is not in line with the conscious communication which creates risk for credibility which means image problems (*Aarts, 2015*). This figure helps to identify the potential reasons for image problems, however the message of *Aarts (2015)* is that conscious communication in the pig sector is definitely not the only reason for image problems. The factual identity of the pig sector is extremely influenced by legislations of the government, the burden of the retail and pressure groups that have a large impact at especially the behaviour of the pig sector (*Aarts, 2015*). Therefore, *Aarts (2015)* stated that social acceptance for the pig sector can only be created when the sector communicates 'Why' they need to fulfil some activities and why these activities sometimes result in outcomes the sector cannot influence. So *Aarts (2015)* stated that there an arrow needs to be inserted above the factual identify, because this sector has many parties involved that influence their behaviour and indirectly their character. This makes it hard to link the character and behaviour to the conscious communication, because this can be changed without the sector being able to influence it. To conclude, in the interview came forward that *Aarts (2015)* would like to explain that image problems in the pig sector are hard to counteract, because of the influence of parties such as the government, retail and pressure groups that have an enormous impact at the sectors behaviour.



## Interview 5

<b>Name</b>	Esther Veen
<b>Organisation</b>	Wageningen UR
<b>Date</b>	21-4-2015

At the 21th of April and interview was performed with *Esther Veen* communication expert of *Wageningen UR*, located in *Wageningen*. The aim of the interview was gathering additional information about the research *Verbinding tussen agrarische ondernemer en burgers (2011)*.

The interview started with the questions about the expertise in communication. The expertise in communication of *Veen (2015)* was foremost based at multifunctional farming and urban agricultural. The reason for writing the report about the connection between farmer and citizen was based at the subject social agriculture. The models used in the report were linked to a more social agriculture which was one of the main focuses in that period (2011) (*Veen, 2015*). The importance in the described models stated by *Veen (2015)* was foremost that the farmer does not need to have the feeling he is put in a box. That was the reason that the developed model was named like tastes of connection instead of 1,2,3 or a,b,c (*Veen,2015*). The reason for looking for models for connecting farmer and citizen stated by *Veen (2015)* was foremost to give farmers insight in which social activities are suitable for that individual farmer. Besides these models *Veen (2015)* also noted the *Verbinding Maatlat*, a tool that gives farmers an idea about how they already perform in case of connection and what they can improve. At the question what *Veen (2015)* should do to create connection between pig farmer and the citizen *Veen (2015)* stated that the initiative to connect is foremost the responsibility of the farmer, because if they become transparent and inform, the citizen-consumer will respond. Thereby, *Veen (2015)* stated that the farmers need to look for the dialogue and how to involve the citizen-consumer, because this will be essential for the future of the sector. In the interview *Veen (2015)* noted that not all farmers are suited to perform social activities. However, this does not mean that the farmers cannot link to other initiatives that can help the farm to react on the wishes of society. At the end of the interview *Veen (2015)* stated that the company etiquette can only succeed when the pig farmers are critical towards the presentation of the farm and their behaviour towards society, because the factual image is not correct. To conclude, *Veen (2015)* stated that performing the research for the connection between farmer and citizen was foremost focused to help the farmer to understand the different ways a farmer can involve a citizen into the farm, based at the farmers' his needs and decisions. Thereby, stated *Veen (2015)* stated that the responsibility to connect is the responsibility of the farmer, because it will be essential for the future of the pig sector. Overall, *Veen (2015)* stated that the pig farmers need to become proactive, because changing something starts with *you*, in this case by the pig farmer.



## 4.4. Correlations

### Correlation 1

H1: A correlation (with 90% probability) is found between Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette and Do you think that the company etiquette will contribute to society acceptance.

**Correlations**

		Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette ?	Do you think that the company etiquette will contribute to society acceptance?
Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette?	Pearson Correlation Sig. (2-tailed) N	1  232	.366** .000 232
Do you think that the company etiquette will contribute to society acceptance?	Pearson Correlation Sig. (2-tailed) N	.366** .000 232	1  232

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the changing opinion of the citizen-consumer and the society acceptance contributed by the company etiquette (n=232) is intermediate (R=.366) and there is a significance (.000 = <0.00) on a 90% probability level.



## Correlation 2

H1: A correlation (with 90% probability) is found between *The goal of the company etiquette to dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette* and *Do you think that the company etiquette will contribute to society acceptance.*

**Correlations**

		The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette ?	Do you think that the company etiquette will contribute to society acceptance?
The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?	Pearson Correlation  Sig. (2-tailed)  N	1   232	.535**  .000 232
Do you think that the company etiquette will contribute to society acceptance?	Pearson Correlation  Sig. (2-tailed)  N	.535**  .000 232	1  232

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the goal to dimes questions and the society acceptance contributed by the company etiquette (n=232) is intermediate (R=.535) and there is a significance (.000 = <0.00) on a 90% probability level.



### Correlation 3

H1: A correlation (with 90% probability) is found between *Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects* and *Will you appreciate recognisability of participation in the company etiquette.*

**Correlations**

		Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects ?	Will you appreciate recognisability of participation in the company etiquette ?
Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects?	Pearson Correlation	1	.316**
	Sig. (2-tailed)		.000
	N	232	232
Will you appreciate recognisability of participation in the company etiquette?	Pearson Correlation	.316**	1
	Sig. (2-tailed)	.000	
	N	232	232

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the representativity of the pig sector and the appreciation for recognisability of participation (n=232) is intermediate (R=.316) and there is a significance (.000 = <0.00) on a 90% probability level.



## 5. Discussion

The aim of this research was to make an inventory of the opinion of the farmer about the company etiquette focused on company appearance, the fit of the company in the neighbourhood and acceptance of the pig farm. The online questionnaire needs to generate information about the content, design and implementation of the company etiquette. The problem definition of the research is that the pig sector has a negative image emerged by the swine fever (1997), zoonosis, up-scaling, antibiotic resistance, particle matter etc. (Termeer, 2013). These negativities have led to a gap between citizen-consumers and farmers and a lack of knowledge by the citizen-consumer about the pig sector. However, the negative image stays intact by the constant negativity by civil society groups and media (NVV, 2015). This negative image leads to regulations such as the BZV which obligates a farmer to perform social activities before there will be space for company development and up-scaling (Brabantse Zorgvuldigheidsscore Veehouderij, 2014). The license to produce becomes more important which means that farmers are obligate to react at the demands of society with use of the dialogue, transparency and a representative farm.

### License to produce

In the problem definition of the research comes forward that the pig sector is under pressure due to a critical civil society. The negative image is about the way pigs are kept, the burden of animal husbandry for the environment, internationalization, human health etc., and expects the farmers to react to the demands of society. In figure 1 of the results comes forward that (96%) of the (n=232) pig farmers do consider the 'Wishes of Society'. However, what are the demands of society? In (annex 10 results online questionnaire, figure 1) farmers (n=232) stated that the needs of society are in their opinion foremost based at food safety, animal welfare and animal health. These results are in line with the society demands described in (chapter 2 part 2.1); however there is a discrepancy between the needs of a 'citizen' and the needs of a 'consumer' in case of animal welfare. The following figure presents a quotation of 'consumer' demands anno 2010 till now.

*" I would like to have something new, a product special for me (unique). It needs to be of a high quality, safe and easy usable. I would like to have it fast (preferred now!), for the lowest price and with a great customer service. And when the product is also sustainable then the feeling will be complete."*

Figure 1: Quote consumer demands anno 2010 till now (Van der Vorst, 2011)

The figure mentions uniqueness, quality, safety, fast, lowest price and sustainable, however where in this quotation is the link to animal welfare? The importance for animal welfare is found continuously in the quality labels (chapter 2 part 2.3) in the politics, but eventually these additional measures taken by the farmer need to be paid by the consumer. So how important is animal welfare at the moment the citizen becomes a consumer? However, the importance in this discussions, about 'Animal welfare' is to split the demands between a citizen and a consumer, because how can the pig sector react to the demands for animal welfare if there are these kind of discrepancies of influence for the income of the farmer. So the importance is to inventory the differences in the demands of a citizen and a consumer in case of consummation pork meat and the demands in case of animal welfare, because the reason that (4%) do not react to the 'Wishes of Society' can be linked to consumers not willing to pay for the additional measures taken by the farmers. The (4%) seems to be very few, because the demand of society to follow measures for welfare, health the environment etc. resulted in a decrease of (n=430) pig farms from 2012 till 2013 (BoerenBusiness, 2013). So it is positive to see that (96%) of the respondents (n=232) respond to the 'Wishes of society', but the decrease of farms because of the extra-regulations in case of human health are not in line with the (96%).

However, the other side for choosing a product compared to the quotation in figure 1 is that all the different concepts linked to meat are confusing for the consumer. As presented in chapter 2 (part 2.3)



there are different quality labels linked to pork meat for example *chain sustainable pork meat (KDV)* and *Better life feature (Blk)*. Besides this, the quality labels also differ in conventional, organic and free-range pork meat, which can be confusing. The multiplicity of product choices creates questions about which products to choose. Therefore clear concept information about the different concepts offered will give the consumer a clear reason to choose and pay for a certain concept instead of choosing the lowest price, because of the lack of information.

### Performing dialogue

The reason to oblige the *BZV* was foremost, because the *Province of North Brabant* would oblige farmers to perform the dialogue in case of up-scaling. In figure 2 of the results comes forward that (85%) of the farmers performed the dialogue with the neighbourhood which is striking in case of the *BZV*, because the society living in *Brabant* that have reacted towards up-scaling stated that farmers start with requesting permits and company development before it is communicated to the neighbourhood. This is not in line with (annex 10 results online questionnaire, figure 3) were the (n=199) farmers that are performing the dialogue answered that they perform the dialogue before/ during permits and also in case of potential company development. In this result there is also a discrepancy, because what is meant by dialogue: is that a chat at the local soccer field where the farmer explained something about the company development plans or this is a formal meeting wherein the neighbourhood needs to have access and participation in the potential plans. In (annex 10 results online questionnaire, figure 4) comes forward that the (n=199) farmers that in their eyes are performing the dialogue perform this through an informal meeting, or by performing a guide tour, but is this really the definition of the dialogue, or what is the society's idea about the dialogue, because this is essential to ensure that the direction of the company etiquette can respond to the 'Wishes of Society'.

### Society acceptance

The research objective stated that the company etiquette needs to improve the negative image of the society and needs to generate more societal acceptance. Out of the results can be stated that the farmers have the opinion that the company etiquette will contribute to 'Society acceptance' (72%). However, this result is not in line with the understanding that the opinion of the citizen-consumer will change by participating in the company etiquette, because of the influence of other parties (see annex 10 results online questionnaire, figure 12). However, besides these differences, the expected society acceptance is not in line with the explanation about 'image definition' stated by *Aarts (2015)* (chapter 4 interview 4), because she stated that society acceptance and eventually improvement of the image of the pig sector cannot be realized by the performance of a quality label or other social activities performed by the pig farmers. This because the image of the sector is not only depending on the farmers, but also other stakeholders such as:

- Politics
- Civil pressure groups/consumer groups
- Environment organisations
- Research centres
- Media
- Retail
- Slaughterhouses

The presented stakeholders have a stake, directly and indirectly, in the production chain and are also blamed for the negative image. Therefore, the essence to generate society acceptance can only be realized if all stakeholders try to bring the current identity and the desired identity at one level. The model to analyse image problems explained by *Aarts (2015)* noted that 'When the current identity is not in line with the desired identity this immediately express in image problems. This means that the character and behaviour is not in line with the conscious communication which creates risk for credibility which meant image problems' (*Aarts, 2015*) (chapter 4 interview 4).



However, besides the fact that the company etiquette cannot create image improvement without participation and openness of all stakeholders, society acceptance can be realized at local scale. For example, the activity for society *Het weekend van het varken* (where approximately 26 pig farmers in the Netherlands opened their visitors barn for citizens) have generated the following research results. *In 2007, 41% of the respondents thought that something needed to change in the conditions pigs were kept. In 2012, the percentage was decreased with 14% indicating that the imago of the pig sector improved (GFK, 2012).* This concludes, that the company etiquette can contribute to society acceptance at local scale, but that the research objective cannot be met with use of the company etiquette, because image problematics are far more complicated than the individual pig farmers that reacts pro-active by participating in the company etiquette (Aarts, 2015).

In addition to this result, significant correlations are found between the questions ‘Do you think that the company etiquette will contribute to society acceptance?’ and ‘Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette?’ (chapter 4, correlation 1) and the question ‘Do you think that the company etiquette will contribute to society acceptance?’ and ‘The goal of the company etiquette to dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?’ (chapter 4, correlation 2). This means that the farmers that believe in the contribution of society acceptance by participating in the company etiquette, also think that the critics of the citizens-consumers towards the pig sector will diminish. The company etiquette reacts at the society demands so the change of opinion of the citizen-consumer in the direct neighbourhood can be seen as achievable, but the acceptance by society over the total pig sector will not be accomplished with the use of company etiquette (Aarts, 2015). This discussion will be the same for the significant correlation between the ‘Society acceptance’ and the ‘Dimes of questions by participating in the company etiquette’, because the contribution of society acceptance cannot be generated over the total pig sector which makes these correlations between the results of the online questionnaire discussable.

### Main subjects company etiquette

In the results about the main-subjects for the company etiquette came forward that the farmers would like to focus at the subjects company appearance, animal welfare and animal health. The choice for animal welfare and animal health is surprising, because this is already included in all quality labels researched (chapter 2 part 2.3) and the legislations *Wet Dieren* and *Besluit Houders van Dieren (NVWA, 2015)*. The choice for animal welfare and animal health was also the result on the question ‘What do you understand by society needs?’ (annex 10 results online questionnaire figure 1) and the subjects that are included in ‘Which subjects are linked to society acceptance?’ (annex 10 results online questionnaire, figure 5). This indicates that animal welfare and animal health is directly linked to the needs of society’ and the acceptance of society. However, besides the fact that animal welfare and animal health are high priority as reported by *Implementation agenda sustainable farming (UDV) (2015)* these results are not in line with the open answer about the question of ‘The first impression of the company etiquettee’ (chapter 4, figure 5). This question stated that the company etiquette needs to focus at generating interest of society together with the focus at the company appearance and fit in the neighbourhood. The subject society also comes forward in the ‘Why’ questions linked to the questions ‘Do you think the company etiquette will contribute to society acceptance and ‘Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects?’(chapter 4, figure 3 and figure 6). For this part of the research can be concluded that the choice for animal welfare and animal health is not in line with the open answers given, because it appears that the pig farmers are pleased if the company etiquette will generate to a well-received company appearance, a suitable fit in the neighbourhood and space for generating interest of society. Thereby the company etiquette should be an addition to the existing labels, because the subjects animal welfare and animal health are already involved in all the quality systems (chapter 2 part 2.1).



From the option 'otherwise' in the results about the main subjects came forward that the respondents missed the options to choose 'diminish nuisance' of the farm and 'public health'. Besides that of the (n=232) farmers only (2.8%) have answered 'otherwise', these two subjects are important, which can be concluded out of the *Agricultural questionnaire (2013)* where is asked to approximately (n=4250) citizen-consumer what their opinion is about odour, light from stables and agricultural vehicles, transport of animals on the provincial road. In this research came forward that the citizen-consumer thinks these subjects are important or negative. In figure 2 the opinion about odour is presented, the other results are presented in (annex 10 result agricultural questionnaires (2013), figure 1 and figure 2).

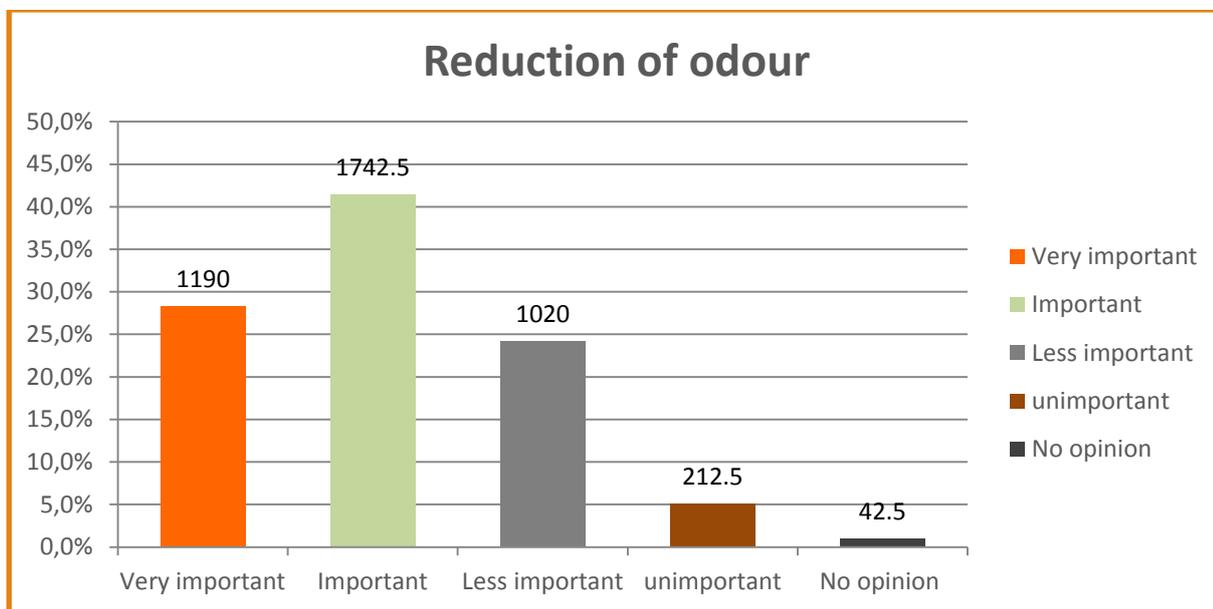


Figure 2: What do you think about reduction odour from farms?

Figure 2 presents what the citizen-consumer thinks of reduction of odour from farms. The figure presents that approximately 28% (n=4250) of citizen-consumers is of opinion that the reduction of odour is very important. Approximately 41% of (n=4250) is of opinion that this reduction is important. Thirdly less important is answered by 24%. In total 5% is of opinion that reduction of odour is less important and 1% of the respondents do not have an opinion about this question.

In case of public health came forward from the *Agricultural questionnaire (2013)* that approximately 42% (n=4250) of the respondents agreed with the statement that the 'citizen-consumer trusts the quality of the current meat production'. From the respondents 21% is neutral, 36% does not agreed and 1% of the respondents does not have an opinion (see annex 10 result agricultural questionnaires (2013), figure 3). However, the quality of meat is not only linked to public health, but also towards pollution of substances that can encumber the nature and environment and can directly and indirectly have risks for human health. Figure 3 presents the level of importance stated by the citizen-consumer in case of reduction of pollution of substances from intensive farming.



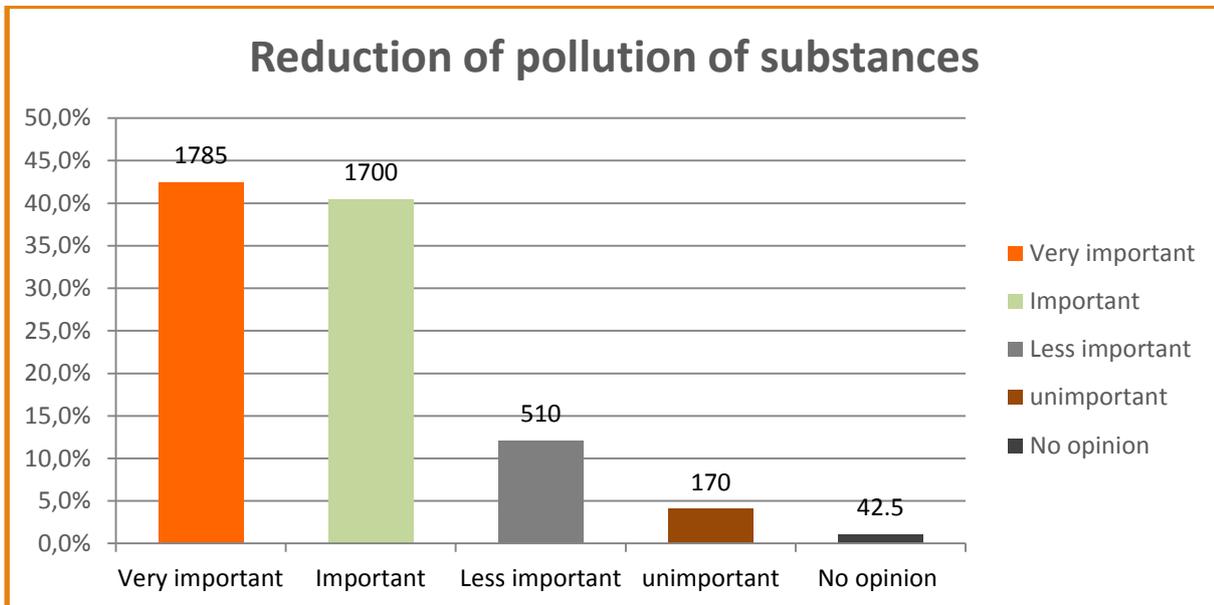


Figure 3: Do you think that reduction of pollution of substances out of intensive farming is important?

Figure 3 presents how important reduction is of the pollution of substances out of intensive farming. The figure presents that of the approximately 42% (n=4250) of citizen-consumer is of opinion that the reduction of odour is very important. Approximately 40% (n=4250) is of opinion that this reduction is important. Thirdly less important is answered by 12%. In total 5% is of opinion that reduction of pollution of substances is less important and 1% of the respondents do not have an opinion about this question.

The result out of the Agricultural questionnaire (2013) can state that the topics nuisance and public health are also important for the citizen-consumer. These results need to be taken into account when designing the company etiquette, because especially the subject about nuisance can potentially be linked to company acceptance, company appearance and a suitable fit of the farm in the neighbourhood.

### Implementation and design company etiquette

In the result about implementation of the company etiquette came forward that the majority of the farmers will take responsibility for implementing the company etiquette without making use of a checklist, certification or star system. However, in (chapter 2) of the quality labels came forward that there are different controls involved in the certification procedures to ensure that the quality of the labels can be ensured which generates trust by the citizen-consumer which is an essential part for positively influence the image of the pig sector. The importance of controlling compliance of quality labels was also stated by *Doornhegge* (2015) (chapter 4, interview 1). Because the quality and compliance cannot be ensured without control, which means that the created company etiquette will not be seen as trustworthy. Additional research need to be performed to ensure that the pig farmers' compliance the subjects of the company etiquette without creating an obligatory feeling. The creation of an obligatory feeling is not required, because before the start of the research the commissioners have stated that the company etiquette needs to be developed in such a way that all farmers will participate at own initiative. Therefore, needs to tested how farmers experience including the company etiquette in the *IKB pig* quality system which then can guarantee that subjects such as welfare, health, hygiene, animal feed etc. are already examined which makes the control of compliance for the company etiquette only a part of IKB. However, this needs to be discussed before it can be tested with the pig farmers, because the company etiquette will be developed for the pig farmers, by pig farmers.

However, before the company etiquette can be tested including in *IKB pig* quality system the design of the etiquette needs to be clearer. The reason that the design did not come forward out of the results was because of the option 'No check own responsibility farmer' (chapter 4, figure 6). This answer option



at the question *'How the company etiquette does needs to be checked?'* had to be presented in an individual question, because the other options for answering this question were more related to design instead of checking the company etiquette (chapter 4 figure 6). This meant that the formulation of the question was wrong, because the question had to be formulated as: *'How the company etiquette does needs to be designed?'* The question about the check of the company etiquette needs to have the answer option such as:

- Check external certification institute
- Check external (NVV)
- Check colleague pig farmers
- No check (own responsibility farmer)
- Contract

The mixed up formulation of the question and answer options can be linked to the method, because the literature review was not finished before the questionnaire was composed. This can be the reason that the different designs were mixed up with the check of a quality system, because the procedure and potential design were not researched yet. However, besides the fact that the potential design of the company etiquette is not presented in a figure multiple times is stated that the company etiquette needs to be a handbook or tool which can support the farmers to reflect in the potential activities they can perform to generate a well-received company appearance, a farm that fits in the neighbourhood and company that will be accepted. However, these results do not have enough reliability to conclude this can be the design of the company etiquette. However, in the recommendation will be explained which tool can be suitable, but this firstly needs to be approved by the NVV members before this can be stated as the design of the company etiquette.

### Representatively pig sector

In (chapter 4 figure 7) is presented that (75%) of the (n=232) pig farmers suspect that the pig sector becomes more representative, with use of the company etiquette based at the chosen main subjects. However, in comparison with the question 'Society Acceptance' can also be stated that the company etiquette cannot generate representativeness (well-received company appearance, fit in the neighbourhood and company acceptance) for the total sector, because it is not allowed to make it obligatory, conscious communication will not generate society acceptance (Aarts, 2015) and without control of compliance can the adaption of the subject of the company etiquette not be ensured. At an individual level the farm can become more representative for the neighbourhood, but the involvement of the other stakeholders is essential to generate a more representable pig sector.

In addition to this result a significant correlation is found between *'Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects?'* and *'Will you appreciate recognisability of participation in the company etiquette?'* (chapter 4, correlation 3). This correlation means that the farmers that believe in creating a more representative pig sector by the company etiquette do also appreciate recognisability of participation in the company etiquette. This correlation seems logic, because if the farmer is representative then there are no concerns to make it recognisable that the farm is participating in the company etiquette. However, in (annex 10 results online questionnaire, figure 9) comes forward that the number of farmers that will appreciate recognisability is not a major difference, because the farmers that will not like to be recognized (46%) of (n=108) stated that recognisability creates an obligate feeling which is not the intention, which means that research needs to be performed. The research needs to focus at how the representativeness which potentially will be generated by the company etiquette in the opinion of the farmer will be made public without an obligatory feeling. The farmers that liked to be recognised (54%) of (n=126) stated that the point of recognition at the courtyard is the most suitable way of recognition (annex 10 results online questionnaire, figure 10). However, the (54%) that have answered this question cannot decide how the participation in the company etiquette needs to be revealed. Therefore,



additional questions are needed to ensure that the company etiquette will be designed and implemented in such a way that the pig farmers like to participate voluntary, without any doubts.

### Reflection research method

From the results of the online questionnaire cannot be stated that the main question of the research is fully answered. This can be linked to the research method, because the literature research was performed in the same time frame as the composition of the questions about the company etiquette for the pig farmers. Therefore, information about the design cannot be concluded, because of mixed-up answer options. Also, the question about the participation in existing quality labels had been informative, because that would have given direction in how the pig farmers experience participation in quality systems and if this additional response to society demands helped the pig farmers to 'License to produce'. Also, the information about image problems shared by *Aarts (2015)* had been received before sending the online questionnaire, because then the questions where focuses at the neighbourhood instead the nationwide pig sector, because conscious communication will not be the solution for the negative image. The interview with *Veen (2015)* had also been performed before sending the questionnaire, as the direction advised by *Veen (2015)* had to be the background for the questionnaire, because then testing the recommendation for the company etiquette wasn't needed anymore, but then the opinion of the farmers about this potential reflective tool was already collected. In addition, questions about *Multifunctional farming* and organisation as *Stap in de Stal* should have been asked. This because then deeper knowledge was attained of the farmers opinion about potential participation with these kinds of organisations as support for arranging activities for society, which also needs to be generated by the company etiquette. These kind of cooperation's are essential for sector PR which can help to make the reach of the conscious communication widespread which eventually will help to respond to the pressure of legislations and pressure groups with a collectively of all initiatives operating in the pig sector. To conclude, the desk research about the quality systems and the interviews with the communication experts and initiatives as *Stap in de Stal* had to be performed before the composing of the online questionnaire, because then the results had been more comprehensive. However, in the development of the company etiquette additional questions and tests are needed because the *NVV* needs to ensure that the company etiquette will be voluntary used by the pig farmers and that it will generate to 'License to produce' which is the direct focus of the company etiquette reacting at the demands of society.



## 6. Conclusion

The aim for performing this research was to inventory the opinion of pig farmers about the design and implementation of a company etiquette that needs to improve the image of the pig sector by focusing at the company appearance, fit in the neighbourhood and acceptance of the company. The problem definition of the research is a negative image of the pig sector emerged by the swine fever (1997), zoonosis, up-scaling, antibiotic resistance, particle matter etc. (Termeer, 2013). These negativities have led to a gap between citizen- consumers and farmers and ignorance by citizen-consumer about the pig sector.

From the desk research about the political and social developments can be concluded that the focus points of the society and the politics can be compared. The focus points in *Uitvoeringsagenda Duurzame Veehouderij (UDV)* are linked to: sustainable production and products, generalization of products, traceability of products, animal health, animal welfare, involvement of society etc. In the *UDV* subjects are handled likewise as stated in the society developments which creates a strong base, because this showed that the Ministry *EZ* reacts at the society trends that are of importance in animal husbandry.

From the desk research about the quality systems applicable in pig husbandry can be concluded that many of the subjects and standards included in the quality systems can be compared, because all quality systems are mostly focused at animal health and animal welfare, which is also included in the control of the *Nederlandse Voedsel en Waren Autoriteit (NVWA)* and the *UDV*. However, in table # (chapter 2 part 2.3) can be seen that the balance between the three elements of sustainability is not always met. Especially the attention for the social part of the *TBL framework* (chapter 2 part 2.1) is not always taken into account which meant that the quality systems *IKB, BLk, KDV* and *VVM* are not enough in balance in the elements social, environment and economic which is directly linked to 'License to produce'. Therein can be concluded that 'Sustainability' which is the development from 2010 till now (*Van der Vorst, 2001*) is not met in all existing quality systems which indicates that these quality systems do not fulfil the demands of society which is essential to earn 'License to produce'. This clearer perception of existing quality systems applicable in pig husbandry has given a better understanding about the motivation to develop the *BZV* regulation, because this score system covers all three P's and challenged the total chain to come-up with new certificates, to fully respond at the societies wishes.

In the desk and field study about the possible connection features between farmer and citizen-consumer can be concluded that there are different ways to generate connection without the farmer having to let go of his own needs and interest. Also came forward that the participation of the citizen-consumer can be created at different levels, which is completely in the hands of the needs of the farmer. This way of analysing suitable connections is a plus, because the farmer will get directions on how to react pro-active towards the 'society questions' without letting go of the competences that fit the individual farmer.

In the question to the pig farmers about the main subjects for the company etiquette comes forward that the subjects company appearance, animal welfare and animal health are seen as potential subjects for the company etiquette. Furthermore came forward that the farmers suspected that the company etiquette will generate a representative pig sector, which means a farm that looks well-cared-for that fits in the neighbourhood and that will generate society acceptance by involvement of the citizen-consumer.

In the implementation of the research can be concluded that pig farmers will take their own responsibility for compliance the standards set in the company etiquette. In case of the design of the company etiquette cannot be concluded what the pig farmers especially think off/suspect by the design of the company etiquette, however in the question about the check of the company etiquette came forward that the self-filling checklist (digital) was a potential option.



## 7. Recommendations

In the results comes forward that the pig farmers would like to have their own responsibility to participate in the company etiquette, without a control. Also comes forward that the subject of the company etiquette needs to focus at the company appearance and generating society interest, because the outside of a farm is mostly directly linked to the performance at the inside of the farm. The recommendation described is meant as an advice for the *NVV* about the design and implementation of the company etiquette linked to a representative pig farm and generating society interest.

The objective of the company etiquette is to improve the negative image of the pig sector. At this moment there are many initiatives that try to improve the negative image by arranging activities for society. For example, the initiatives *Stap in de Stal*, *Boerderij in de Kijker*, *Vallei Boert Bewust* are all initiatives that react to the demands of society, through transparency, dialogue, open days, education etc. Therefore, the advice is to 'Bundle the power', because as stated by *Haselhorst and Jeeninga (2015)* not every farm needs to be multifunctional, a visitors barn or linked to farm education, but these kinds of companies can help to show and inform about the total pig sector, which gives farmers that really need to generate their total income out of pigs, space to do their job without the social burden. This is the plus of the initiative *Stap in de Stal*, so the farmers that are too busy can send the citizens to a visitor's barn, which is a positive attraction for the total pig sector. The connection between these kinds of initiatives will help to generate positive sector PR, because there is cooperation and understanding for each other situation. However, besides the fact that these kinds of collaborations will be positive there is also advised that pig farmers that invest additionally in activities for society can ask for a small compensation by their colleagues, which ensures that all farmers will benefit of this 'Bundle of power'.

Besides the 'Bundle of power' in case of initiatives that focus on society, the advice for the design of the company etiquette is linked to the research of *Veen et al., (2015)* and an existing tool stated in the interview with *Veen (2015)*. The recommendation explains a reflection tool which can be performed at the own initiative of the farmer.

1) This reflective tool will start with offering the farmers insight in their 'hierarchy of needs' and how the farmers can react to the different experience worlds of citizen-consumer (chapter 2). Also, the different levels of participation are involved wherein the farmer can decide 'How the farmer will involve a citizen consumer and which potential activities for society can be linked to a certain level of participation'. These insights will be linked to the company etiquette, because the essence is that an activity for society suits the farmer, because otherwise is the implementation of an activity for the society is not linked to personal conviction. So this part of the company etiquette is meant to offer the pig farmers tools that will give direction for generating society interest, but the farmer stays in charge.

2) The second part of the reflective tool named *Connection yardstick (Verbindingsmaatlat)* developed by *Wageningen UR* offers the farmer insight in entrepreneurship based at the neighbourhood which is essential, because success is directly linked to the connection with the neighbourhood. For example in the application for up-scaling the relation with the neighbourhood is essential, think of the *BZV* that has become obligate, because citizen-consumer were in their opinion not informed enough which generates a negative image towards up-scaling (*BZV, 2015*). However, the reflective tool needs to be adapted to the pig sector and all farm types, so from organic to intensive pig farming need to get accessibility to the reflective tool. The tool starts with an online list of questions that gives the pig farmer insight in how the farmer performed at subjects such as:

- Company appearance
- Information of the company
- Accessibility/transparency
- Relation neighbourhood

After completion of the questions the result is directly presented. In the results comes forward what the farmer scored at the included subject and what can be helpful to score higher at for example the



accessibility of the company. The reflective tool won't give advice, but gives new insights in where the farmer can focus at in relation to 'Neighbourhood based entrepreneurship'. Besides the results, the reflective tool also offers additional tools, books, documents, connection to existing society initiatives that can direct the farmer in the opportunities that are linked to the subject the farmer needs to focus on.

The positive part for the farmers linked to the result of the online questionnaire is that with this reflective tool (that needs to be adapted to the pig sector) it is really the own responsibility of the farmer to make use of this tool. Another positive aspect is that the reflective tool can lead to connection with society initiatives involved in animal husbandry. This can be a positive point, because a farmer can learn of the initiative which already performed society activities and maybe a farmer will eventually participate in for example initiatives as *Stap in de Stal* or *Boerderij in de Kijker*. These kinds of collaborations in a sector are important, because then more parties are in one line which is essential to positively influence the image of the sector (chapter 4 interview 4).

In addition, the reflective tool gives the opportunity to reveal the results online with use of a linked website or the private social media of the farmer. The online questionnaire research results showed that recognisability of participation in the company etiquette was approximately 50/50 (n=232) for the answers yes (54%) and no (46%) (annex 10 results online questionnaire, figure 9). However, this result is not essential, because in the advice for developing the company etiquette as a reflective tool the farmer will be in charge in deciding to make the results public yes/no.

However, besides the fact that the farmer can decide to only download the results and to only use the results as direction for potential improvements, the recommendation is to make it notable, because as stated by *Van der Vorst (2011)* the society and politics focuses on:

- Up-scaling
- Integration of society
- Market and entrepreneurship
- System innovation
- Computerization

which all can be linked to this reflective tool. The results of the tool can give background information about the adaption towards society demands which can be useable for a business plan and can possibly diminish the negativity towards company development and up-scaling. Also, the tool will be unique, because if all pig farmers will share their results there will be a wide media reach (positive sector PR) that shows that the Dutch pig farmers reflect at company appearance, sharing information, accessibility and relation with the neighbourhood. Also, the use of computerization for controlling their performance in case of 'Neighbourhood based entrepreneurship' will be a large plus. The citizen-consumers can see that farmers are also innovative which is also required by the Dutch society and government, see (*chapter 2 part 2.1*) (UDV) where integration of society is one of the spear points of the society and the *Ministry EZ* which indirectly is linked to the reflective tool, because when it is shared it can generate a more in depth connection. Another reason for sharing the result of the tool is that it shows the neighbourhood that the farmer is reflecting their 'Neighbourhood based entrepreneurship' which will be a positive message towards society, because self-reflection is essential to make steps forward. Thereby this can generate connection at another level, because maybe the citizen-consumer will be more involved in the farm, of course the level of participation and interaction is the choice of the farmer, but it can contribute to less questions from the neighbourhood which is also expected by the farmers see (annex 10 results online questionnaire, figure 10).



Besides the advice for developing the company etiquette as a reflective tool comparable with the *Verbindingsmaatlat*, but adapted to the total pig sector. I will recommend changing the name of the company etiquette, because this name gives the feeling that the company etiquette is a quality system which is not the direction the pig farmers think off. Therefore, the recommendation for a new name is: *Connection Maker Pig Husbandry (CMP)* 'No standard requirement, but personal customization' in Dutch the name will be *Verbinding Maker Varkenshouderij (VMV)* 'Geen standard verplichting, maar persoonlijk maatwerk'



In addition an advice more linked to the implementation of the company etiquette is that the *Connection Maker Pig Husbandry (CMP)* needs to be linked to a quality system that gives attention to the economic and environment elements of the *TBL framework* (chapter 2 part 2.1) which can be covered by *IKB Varken*. This means that subjects such as animal health, animal welfare, transport etc. don't have to be included in the *CMP*. Thereby, the link between *IKB* and the *CMP* will generate a strong base for 'License to produce' which eventually was the fundamental reason for developing the *CMP*. Thereby, the link to *IKB* will be positive in case of compliance, because the implementation of the standards set in the company etiquette can be controlled in the yearly control of *IKB*. This does not mean that not compliance of the standards set in the *CMP* needs to be linked to the sanction framework of *IKB*, but this control gives direction in the application of the company etiquette. Also gives this moment of control the *NVV* information, if the company etiquette is comply by the pig farmers and will generate a look well-cared-for farm that fits in the neighbourhood and is accepted through involvement of the society.



## 8. References

### Interviews

Aarts, N. (2015) Wageningen, 10 april 2015, *Wageningen UR, communicatiewetenschap*

Doornhegge, L. (2015) Zeist, 5 maart 2015, *CoMore*

Haselhorst, G. (2015) Lemele, 24 maart 2015, *Aan't Zandeinde (Stap in de Stal)*

Jeeninga, A. (2015) Lemele, 24 maart 2015, *Aan't Zandeinde (Stap in de Stal)*

Peek, N. (2015) Bunnik, 23 maart 2015, *Boerderij in de Kijker*

Veen, E. (2015) Wageningen, 21 april 2015, *Wageningen UR, communicatiewetenschap*

### Reports

Aarts, N., Sleuten, C., Woerkum, C., (2014) Strategische communicatie principes en toepassingen

Arnstein (1969). A Ladder of Citizen Participation. *Journal of the American Planning Association, Vol. 35, No 4.*

Gies, E., van Os, J., Hermans, T., Olde Loohuis, R. (2007) Megastallen in Beeld. Alterra-rapport Wageningen UR, p., 7

Termeer, K., Dagevos, H., Breeman, G., Hoes, A., (2013) Maatschappelijk vertrouwen in de varkenshouderij. Wageningen UR

Van der Vorst, Prof. dr.ir. Jack G.A.J., (2011) Toekomstverkenning transitie tot 2040 voor de topsectoren Agro food en Tuinbouw vanuit logistiek perspectief. Wageningen University p., 7-13

Veen, E., Vermeulen, P., De Wolf, P., Schoorlemmer, H., (2010) Verbinding tussen agrarische ondernemers en burgers. Praktijkonderzoek Plant & Omgeving en Wageningen UR Glastuinbouw p., 15-29

Wijffels, H., Van de Berg, A., Boeve, A., Van Dijk, G., Dijkhuizen, A., Eijnhoven, J., Kalden, C., Meester, G., Noordhuizen, E., Vogelaar, J., Woltjer, E., Munters, P., (2011) Toekomst voor de veehouderij, agenda voor een herontwerp van de sector. Ministerie LNV

### Articles

BoerenBusiness. (2014) *Schaalvergroting in varkenssector zet door 2013*. [Online] Available from: <http://www.boerenbusiness.nl/varkensmarkt/artikel/item/10835397/Schaalvergroting-in-varkenssector-zet-door> [Accessed: 16th February 2015]

Veerman, D., (2015) Kip en varken van morgen verboden: Wie is de weg kwijt?. Foodlog Available from: <http://www.foodlog.nl/artikel/kip-en-varken-van-morgen-verboden-wie-is-de-weg-kwijt/> [Accessed: 14th March 2015]

### Websites



- Agriholland (2015) [Online] Available from: <http://www.agriholland.nl/zoeken/search.php?query=varkens&search=1> [Accessed: 25th April 2015]
- Beter leven Kenmerk(2015)[Online] Available from: <http://www.VERIN.nl/Werkgebied/Beter-Leven-Kenmerk.aspx>[Accessed: 27 March 2015]
- BZV (2015) [Online] Available from: <http://www.brabant.nl/dossiers/dossiers-op-thema/platteland/zorgvuldige-veehouderij/-/media/7825712E41F14161A7D7D8D0E1FA0216.pdf> [Accessed: 28 May 2015]
- CoMore (2015).[Online] Available from: <http://www.co-more.nl/> [Accessed: 23th March 2015]<http://www.co-more.nl/Bedrijfsprofiel.aspx>
- Dierenbescherming (2015) [Online] Available from: [www.dierenbescherming.nl/](http://www.dierenbescherming.nl/)[Accessed: 30th March 2015]  
[www.dierenbescherming.nl/beterlevenkeurmerk](http://www.dierenbescherming.nl/beterlevenkeurmerk)
- EZ (2015) [Online] Available from:  
<http://www.rijksOverheid.nl/ministeries/EZ/onderwerpen>[Accessed: 20th April 2015]  
<http://www.rijksOverheid.nl/regering>  
<http://www.rijksOverheid.nl/ministeries/EZ/organisatie>
- GBD (2015) [Online] Available from: <http://CGDbv.eu/>[Accessed: 25th March 2015]  
<http://CGDbv.eu/wij/>
- GD (2015) [Online] Available from: <http://www.GDdiergEZondheid.nl/> [Accessed: 29 March 2015]
- GD (2015) [Online] Available from: <http://www.autoriteitdiergeneesmiddelen.nl/Userfiles/pdf/SDa-rapporten/sda-rapport-het-gebruik-van-antibiotica-bij-landbouwhuisdieren-in-2013--trends--benchmarken-bedrijven-en-dierenartsen--17-juni-2014-revisies-9-september-2014--docx.pdf> [Accessed: 29 March 2015]
- I&M (2015) [Online] Available from: <http://www.rijksOverheid.nl/ministeries/ienm>[Accessed: 20th April 2015]  
<http://www.rijksOverheid.nl/ministeries/ienm/wat-doet-ienm>  
<http://www.rijksOverheid.nl/ministeries/ienm/wat-doet-ienm/bereikbaarheid>  
<http://www.rijksOverheid.nl/ministeries/ienm/onderwerpen>
- IKB (2015) [Online] Available from: <http://www.VERIN.nl/Werkgebied/IKB.aspx>[Accessed: 29 March 2015]
- ILT (2015) [Online] Available from: <http://www.ilent.nl/>[Accessed: 20th April 2015]  
<http://www.ilent.nl/onderwerpen/>  
[http://www.ilent.nl/over\\_ILT/](http://www.ilent.nl/over_ILT/)
- Infomil (2015) [Online] Available from: <http://www.infomil.nl/onderwerpen/>[Accessed: 12th April 2015]  
<http://www.infomil.nl/onderwerpen/landbouw-tuinbouw/ammoniak/>  
<http://www.infomil.nl/onderwerpen/landbouw-tuinbouw/activiteitenbesluit/>  
<http://www.infomil.nl/onderwerpen/landbouw-tuinbouw/gEZondheid-0/>
- KAD (2015) [Online] Available from: <http://www.kad.nl/>[Accessed: 9th April 2015]



KDV (2015) [Online] Available from: <http://duurzaamvarkensvlees.nl/>[Accessed: 30th March 2015]  
<http://duurzaamvarkensvlees.nl/dier-milieu/dierwelzijn/>  
<http://duurzaamvarkensvlees.nl/ons-varkensvlees/>  
<http://duurzaamvarkensvlees.nl/dier-milieu/>  
<http://duurzaamvarkensvlees.nl/KDV-labs/>

LTO Noord (2015) [Online] Available from: <http://www.ltonoord.nl/>[Accessed: 30th March 2015]

Maatlat Duurzame Veehouderij (2015) [Online] Available from: <http://www.VERIN.nl/Diensten/Maatlat-Duurzame-Veehouderij.aspx>[Accessed: 29 March 2015]

NVWA (2015) [Online] Available from: <https://www.NVWA.nl/>[Accessed: 20th April 2015]  
<https://www.NVWA.nl/onderwerpen/regels-voor-ondernemers-dier/dossier/varkens>

Rijksoverheid (2015) [Online] Available from:  
[http://wetten.Overheid.nl/BWBR0030250/geldigheidsdatum\\_21-05-2015](http://wetten.Overheid.nl/BWBR0030250/geldigheidsdatum_21-05-2015)[Accessed: 13th April 2015]  
[http://wetten.Overheid.nl/BWBR0035217/geldigheidsdatum\\_21-05-2015](http://wetten.Overheid.nl/BWBR0035217/geldigheidsdatum_21-05-2015)  
[http://wetten.Overheid.nl/BWBR0013402/geldigheidsdatum\\_21-05-2015](http://wetten.Overheid.nl/BWBR0013402/geldigheidsdatum_21-05-2015)

SMK (2015) [Online] Available from: <http://www.SMK.nl/1/home.html>[Accessed: 30th March 2015]  
<http://www.SMK.nl/7/over-SMK/certificering--voordelen.html>  
<http://www.SMK.nl/3/keurmerken---certificatieschema-s.html>

Tweedekamer (2015) [Online] Available from: <http://www.tweedekamer.nl/>[Accessed: 13th April 2015]  
[http://www.tweedekamer.nl/hoe\\_werkt\\_het/van\\_wetsvoorstel\\_tot\\_wet](http://www.tweedekamer.nl/hoe_werkt_het/van_wetsvoorstel_tot_wet)  
  
<https://www.NVWA.nl/onderwerpen/regels-voor-ondernemers-dier/dossier/varkens/rol-NVWA>

UDV (2015) [Online] Available from:  
<http://www.uitvoeringsagendaduurzameveehouderij.nl/>[Accessed: 23th April 2015]  
<http://www.uitvoeringsagendaduurzameveehouderij.nl/integraal-duurzame-veehouderij/>  
<http://www.uitvoeringsagendaduurzameveehouderij.nl/over-de-udv/speerpunten/>  
<http://www.uitvoeringsagendaduurzameveehouderij.nl/over-de-udv/samenwerking/>

Vallei Boert Bewust (2015) [Online] Available from: <http://www.valleiboertbewust.nl/>[Accessed: 30th March 2015]

Varken van Morgen (2015) [Online] Available from: <http://www.VERIN.nl/Werkgebied/Varken-van-Morgen.aspx>[Accessed: 27 March 2015]

VERIN (2015) [Online] Available from: <http://www.VERIN.nl/> [Accessed: 23th March 2015]



## Certification criterion

Certificatie criteria *IKB Varken* (2014) Edition 08., Publication: *CBD Beheer*

*Global G.A.P.* (2014) Module 1: Animal health and responsible use of antibiotics. 50672 Cologne, Germany

*Global G.A.P.* (2014) Module 2: Animal welfare. 50672 Cologne, Germany

*Global G.A.P.* (2014) Module 3: Environment and conservation. 50672 Cologne, Germany

*IKB varken* (2013) Werkboek 6.0. Publication: *CBD B.V.*

*MDVA 6.1*(2014) Algemene voorwaarden, *Maatlat Duurzame Veehouderij. Edition SMK*

*MDVA 6.1*(2014) Geste en Dragende zeugen, *Maatlat Duurzame Veehouderij. Edition SMK*

*MDVA 6.1*(2014) Hoofdstuk 2 MDV- Bijlage 1 Bedrijf & Omgeving, *Maatlat Duurzame Veehouderij. Edition SMK*

Natuur & Milieu federatie en LTO Noord (2013) Landbouw enquête

*VBB* (2014) Beoordelingsschema varkenshouderij Vallei Boert Bewust



## 9. Annex literature

### Annex 1: General developments and trends in production of products

Megatrends	General impact on Agro Food
<p><b>1. Demographical developments:</b></p> <p>a) <b>Increase population for 7 to 9 milliard humans in 2050 – especially in Asia, African and Latin America (growing BRIC countries); that will consummate more, because of rising prosperity</b></p> <p>b) <b>Urbanization ( in 2050 lives 70% van the total population in one of the many megalopolises);</b></p> <p>c) <b>Multicultural cities through emigration /immigration</b></p> <p>d) <b>Decrease of population in The Netherlands and West- Europe</b></p> <p>e) <b>Individualization</b></p>	<ul style="list-style-type: none"> <li>• Increase question for food in especially BRIC countries till 2050 (with circa 65%) Also an increase in added value of products as meat, fish and dairy products. Also, the division of food is essential. Billions of people are hungry; the same amount of people over eats.</li> <li>• Markets in Europe are stabilising. Through an increasing aging population more demand for added value products and safe healthy food. Decrease potential working population.</li> <li>• Increase of land-, raw materials and energy use; results in scarcity in natural sources and increasing attention for sustainability.</li> <li>• Increase in waste production and ( fertilizers, packaging materials, industrial rest flows)</li> <li>• Increase of global flows (to grow markets) but also more local production; more humans need to be fed, but the space to harvest becomes limited.</li> <li>• Increase production assortment by multicultural society.</li> <li>• Increase self interest in society; less operating out of a collective interest.</li> <li>• Increase demand for easy usable food products</li> <li>• Increase complexity in food provision; where to produce fresh food and how to bring this into the metropolis?</li> </ul>
<p><b>2. Climate changes and total society attention for sustainability</b></p>	<ul style="list-style-type: none"> <li>• Companies do need to have a license to operate. The government will focus on stricter regulations for environmental demands to counteract climate changes.</li> <li>• Worldwide only 150 crops are harvested on large scale and eaten. Twelve of these crops are delivering ¾ of the world food production, three of these crops (rice, wheat and maize) the 1/2 of vegetable food energy. Less biodiversity (sorts and raises) do not only meant less variety, but also more vulnerability for diseases and pests and a higher risk for epidemics.</li> <li>• Increase price volatility of raw materials</li> </ul>
<p><b>3. Continue process automation, computerization and virtualization (doing business by internet)</b></p>	<ul style="list-style-type: none"> <li>• Increase automation – and computerization degree, through which extensive real-time information- exchange and dynamic planning and control of activities in chain network becomes possible. This also means higher standards are set for education for employees involved in automation.</li> <li>• Increase of standards of ICT systems and data sources and containerisation makes doing business virtual possible which will result in worldwide sourcing and distribute with longer more complex chains as result.</li> <li>• An increase in opportunities to save history product information divided over the total chain, which eventually can be communicated to consumers by smart tags.</li> <li>• Increase decoupling of goods- and information flows and by this and increase in internationalisation of product processes.</li> </ul>
<p><b>4. Continuing specialisation in internationalizing versus regionalising</b></p>	<ul style="list-style-type: none"> <li>• The numbers of players in the market are decreasing. This meant that bigger companies take the possibility to compete with other big companies.</li> <li>• Increase outsourcing, because companies start focusing on chain activities and fragmentation of production processes (For example, tires are made in china, send out of Brazil and mounting in the Netherlands)</li> <li>• Increase attention for sustainability leads to regionalisation; the product will be bought in the own region with a suitable brand name and a small production chain involved.</li> <li>• Specialisation of products requires qualified employees.</li> </ul>



## Annex 2: Cooperating parties UDV

### Cooperations parties *Uitvoeringsagenda Duurzame Veehouderij (UDV)*

- *Ministry EZ*
- *Centrale organisatie voor de vleessector (COV)*
- *Dierenbescherming (DB)*
- *Groene kennis Coöperatie (GKC)*
- *Interprovinciaal overleg (IPO)*
- *Land- en Tuinbouw Organisatie Nederland (LTO)*
- *Natuur & Milieu (N&M)*
- *Nederlandse Zuivel Organisatie (NZO)*
- *Nederlandse Vereniging Diervoederindustrie (Nevedi)*
- *Rabobank Nederland*
- *Wageningen UR*



### Annex 3: Ambitions sustainable animal husbandry (UDV)

Ambitions sustainability animal husbandry in perspective	
Ambitions	Definition
1. Fossil energy	The Dutch farmer does not use fossil energy. This also meant for primary companies and chain partners
2. Climate	The Dutch farmer contributes decreasing the temperature by a maximal of 2 degrees of Celsius
3. Global species richness	The farmer will respect richness of species nationwide (biodiversity)
4. National species richness	The farmer will respect richness of species in rural areas and recovered the growth of this species if needed
5. Phosphorus	The mineral phosphorus will only be used out of not mined areas, likewise for primary business as other chain parties. Also, minerals are no longer needed for animal production.
6. Soil quality	The soil used by the Dutch farmer stays useable for future agricultural and other applications
7. Water supply	The Dutch farmer does not negatively influence the strategically water supplies
8. Water quality	The Dutch farmers ensure no contaminated substances will pollute into the ground and surface water. This keeps water suitable for drinking water and as vital ecosystem
9. Animal welfare	Animals can meet their ethological needs without pain or restriction. Interventions are no longer allowed
10. Animal health	Healthy animals without overrated use of antibiotics
11. Human health	Safety products for human consumption
12. Connection with the neighbourhood	Dutch livestock companies are accepted by their neighbourhoods. The neighbourhood does not experience boredom of the farms
13. Profitable	The Dutch livestock company is profitable
14. Labour	Working in agricultural will be experienced as attractive and possible to perform till the retirement age
15. Knowledge, the ability to learn and innovation	The Dutch farmer is able to adapt to the changing circumstances, because of the knowledge and innovations gathered in working in animal husbandry

Table: Ambitions (UDV, 2015)



## Annex 4 Notifiable animal diseases in livestock

### Notifiable animal diseases in livestock

- *Runderpest*
- *Mond-en-klauwzeer*
- *Klassieke varkenspest*
- *Afrikaanse varkenspest*
- *Rabies*
- *Dourine*
- *Kwade droes*
- *Virale paardenencefalomyelitiden*
- *Infectieuze anemie*
- *MILTvuur*
- *Afrikaanse paardepest;*
- *Vesiculaire stomatitis*
- *Trichinellose*
- *Brucellose*
- *Endemische leukose bij runderen*
- *Tuberculose ten gevolge van Mycobacterium tuberculosis complex*
- *Bovine spongiforme encefalopathie, scrapie en andere overdraagbare spongiforme encefalopathieën (TSE's)*
- *Besmettelijke bovine pleuropneumonie*
- *Teschener-ziekte (besmettelijke varkensverlamming)*
- *Vesiculaire varkensziekte*
- *Ziekte van Aujeszky*
- *Blue tongue*
- *Pest van de kleine herkauwer*
- *Rift Valley koorts*
- *Schape- en geitpokken\*
- *Nodulaire dermatose (lumpy skin disease)*
- *Enzoötische hemorragische ziekte bij herten*
- *Q-koorts*

*Notifiable animal disease in livestock (NVWA, 2015)*

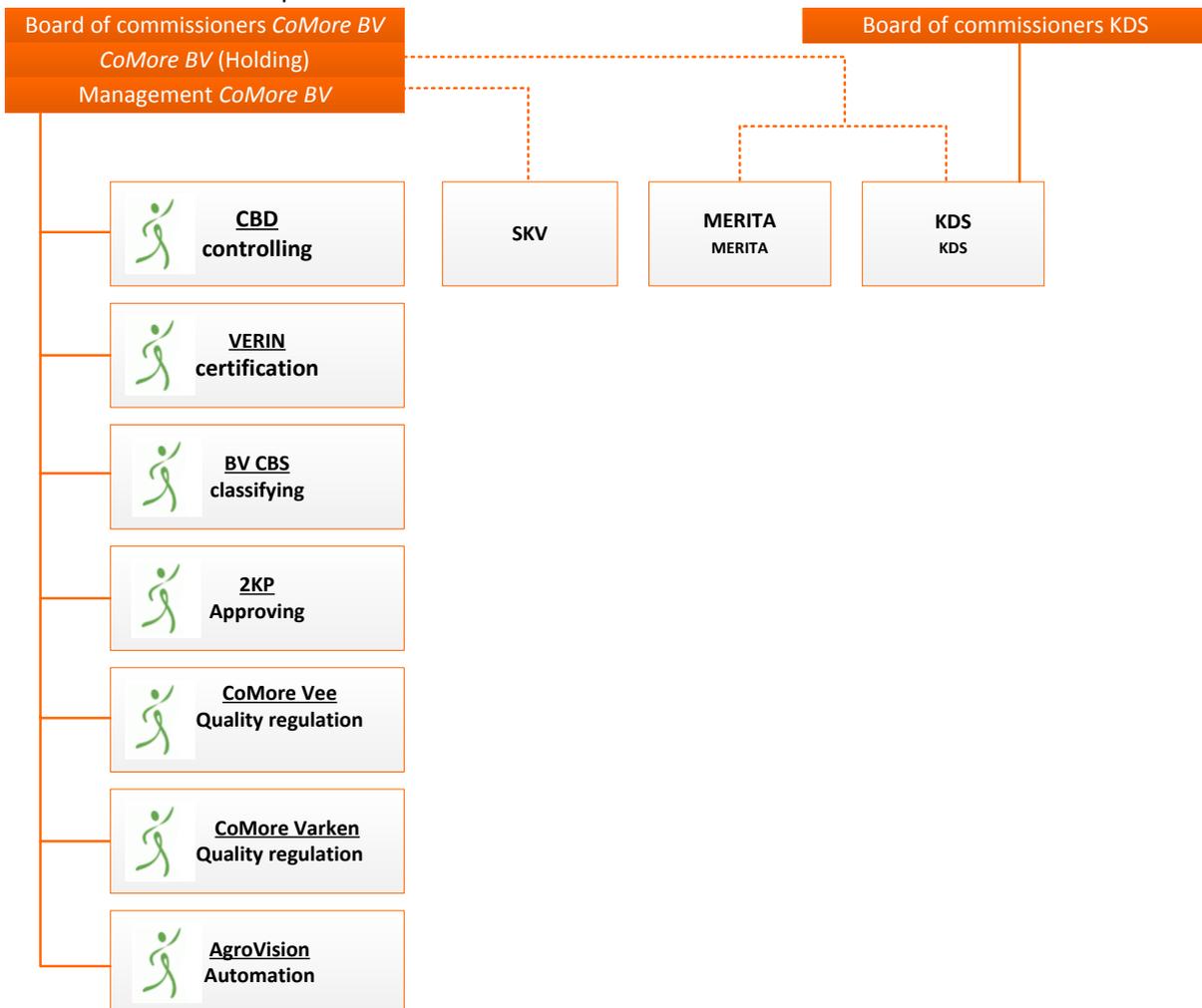


**CoMore**

The certification institute *CoMore* emerged from the Agro food sector and is expert in professional services such as controls, audits, researches, inspections, sampling, certifications, classifications, quality schemes and automation.

The aim of these services is to guarantee quality of life and living environment for human and animal. *CoMore* consist of a holding (*CoMore BV*) and the subsidiary companies presented in de organogram. The subsidiary companies are professional and specialized in the Agro food sector. In 1943 *CoMore* originates from the foundation CBS (Insurance company livestock- and meat sector). In 2013 the insurance part ended and concerted to a quality regulation that focused on improving quality of slaughter animals. *CoMore* arranged management, staff and supporting services to the subsidiary companies (management *CoMore BV*). The board of commissioners of *CoMore BV* is respnsbile for all subsidiary companies involved and supervises the line off the business.

In addition, *CoMore* offers management and supporting services to third parties such as ‘Kwaliteitskeuring Dierlijke Sector’(KDS), *MERITA* and ‘Stichting kwaliteitsgarantie Vleeskalversector’ (SKV). These service providing companies are comparable with the subsidiary companies of *CoMore*, but SKV works with an independent board of commissioners.



Organizational chart CoMore, Adapted, (CoMore, 2015)



## Annex 6: Organisations involved in IKB Pig

Organisations involved in CCvD, IKB Varken	
<ul style="list-style-type: none"><li>• <i>Vee &amp; Logistiek Nederland</i></li><li>• <i>Centrale organisatie voor de vleessector COV</i></li><li>• <i>Koninklijke Nederlandse Slagersorganisatie</i></li><li>• <i>Nederlandse Vakbond Varkenshouders NVV</i></li></ul>	<ul style="list-style-type: none"><li>• <i>Centraal bureau levensmiddelenhandel CBL</i></li><li>• <i>Dierenbescherming</i></li><li>• <i>Good Manufacturing Practices GMP+ International</i></li><li>• <i>Koninklijke Nederlandse Maatschappij voor Diergeneeskunde KNMvD</i></li><li>• <i>Land-Tuinbouworganisatie LTO</i></li></ul>

*Organisation of importance to the pig sector that are involved in the decision making of the standards of the IKB Varken Quality label (IKB Varken, 2015)*



## Annex 7: Monitoring obligations for blood sampling required by *IKB Varken*

VVL company statuses	Period	Blood sampling	Number of samples	Analyses
<b>A-, C- and E companies</b>	Every month	The samples need to be sampled at different compartments into the pig stable	12	ZvA KVP
	Every trimester, wherein 31 or more fattening pigs are transported to the slaughterhouse (Inclusive selected g/LTs)	At the pig farm/ slaughter line	12	<i>Salmonella</i>
<b>B-, D- and F-companies</b>	Every trimester  Trimester 1: The first of January till 30 of April Trimester 2: The first of May till 31 of August Trimester 3: The first of September till 31 December	At the pig farm/ slaughter line	3	ZvA
	Every trimester, wherein 31 or more fattening pigs are transported to the slaughterhouse (Inclusive selected g/LTs)	At the pig farm/ slaughter line	12	<i>Salmonella</i>

*Monitoring obligations for ZvA, KVP or Salmonella differs per VVL company statuses, period, place of blood sampling and number of samples (IKB, 2015)*



Annex 8: Labels developed, managed, certified and assessed by (SMK)

SMK label	Explanation
<b>SMK developed and manages</b>	
<p><b>Milieukeur</b></p> 	<p>Label for sustainable products and services</p>
<p><b>Groen Label Kas</b></p> 	<p>Quality system for sustainable greenhouses</p>
<p><b>Maatlat Duurzame Veehouderij</b></p> 	<p>Quality system for sustainable livestock farming</p>
<p><b>Maatlat Duurzame Aquacultuur</b></p> 	<p>Quality system for sustainable fish farms</p>
<p><b>Barometer Duurzame Bakkerij &amp; Zoetwaren</b></p> 	<p>Quality system at three levels focused on a sustainable business operating and purchase of sustainable raw materials.</p>
<p><b>Barometer Duurzame Bloemist</b></p> 	<p>Quality system at three levels focused on a sustainable business operating and purchase of sustainable flowers and plants.</p>



	
<b>Barometer Duurzame Groenten &amp; Fruit</b>	Quality system for a sustainable business operating and purchase and sale of sustainable vegetables and fruits.
	
<b>Barometer Duurzame Slager</b>	Quality system at three levels focused on a sustainable business operating and purchase of sustainable meat.
	<i>(This certification scheme is inactivated in 2013)</i>
<b>Barometer Duurzaam Terreinbeheer</b>	Quality system at four levels focused on sustainable management of green and paved areas. The highest level is equal to <i>Milieukeur</i> .
	
<b>Milieuthermometer Zorgsector</b>	Quality system at three levels focused on environmental care and environmental performance and health care institutions.
	
<b>Plusstal</b>	Quality system for new construction
	
<b>SMK certify</b>	
<b>EU Ecolabel</b>	Together with the 28 other member states and the European Commission works SMK to development and management of quality systems from <i>EU Ecolabel</i> . SMK is responsible for the <i>EU Ecolabel</i> certification of Dutch products and service.



## Annex 9: CGD

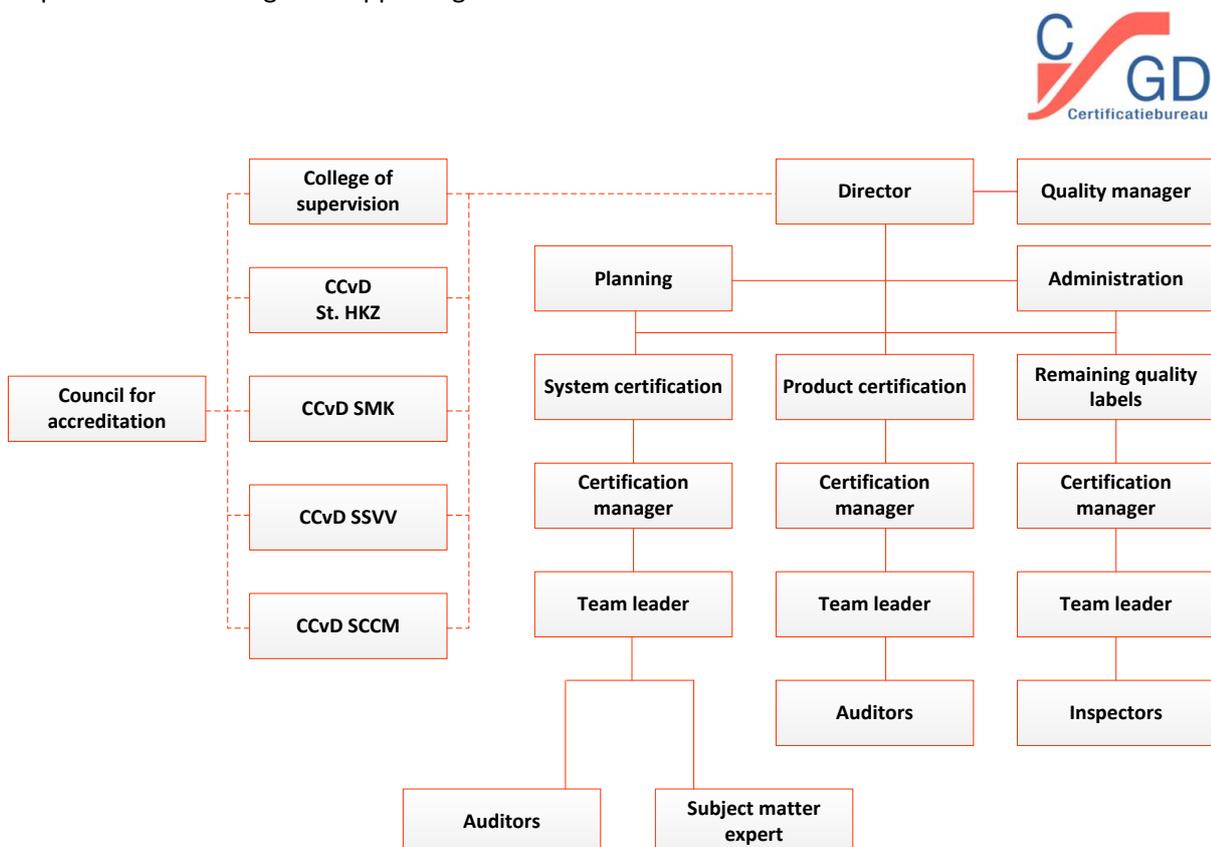
### CGD

The certification institute *CGD (specialisten in Handel en Logistieke dienstverlening)* is founded in 1994 supported by the *Nederlands Verbond voor de Groothandel*. The institute started with performing a certification service for companies and organisations that were working in logistics projects between producers and consumers. The *CGD* operates under accreditation by the council of accreditation. The product and process certifications of *CGD* are focused at the certification type, foremost management systems. The certification institute does not focus on advice, but especially on the criteria of certification, because these needs to be clear for certification institute and organisations. To ensure that *CGD* understands the criteria of their clients there is the college of supervision; represents of organisations that need to make use of certification schemes. The college of supervision is divided into four *Centraal Colleges van Deskundige (CCvD)*. The next table presents the content of the different *CCvD* involved in *CGD*.

Colleges of Supervision	Explanation abbreviation <i>CCvD</i> involved in <i>CGD</i>
<b>CCvD St. HKZ</b>	<i>Harmonisatie kwaliteitsbeoordeling in de zorgsector</i>
<b>CCvD SMK</b>	<i>Stichting Milieukeur</i>
<b>CCvD SSVV</b>	<i>Stichting samenwerken voor veiligheid</i>
<b>CCvD SCCM</b>	<i>Stichting coördinatie certificatie milieukeur</i>

Table3: Explanation colleges of supervision involved in the certification institute *CGD* (*CGD*, 2014)

Besides the college of supervision the organizational structure of *GCD* starts with a director and quality manager. The planning and administration organised the structure of the different parts of certification so system certification, product certification and control of remaining quality labels. The inspectors of the performed certifications do all have access to a certification manager and team leader who are responsible for leading and supporting the auditors if needed.



Organizational chart *CGD*, Adapted, (*CGD*, 2015)



<b>Pig Barn</b>		
<b>Legal requirements</b>	<b>Score</b>	<b>Corrected score</b>
		<b>6,00</b>
<b>Certificates</b>		
<i><b>IKB pig</b></i>	8	
<i><b>MDV</b></i>	5	
<b>After conversion factor (40)</b>		<b>0,33</b>
<b>Environment and neighbourhood</b>		
<b>Biodiversity</b>	12,78	
<b>Connection with the neighbourhood</b>	4,99	
<b>Odour</b>	43,44	
<b>Ammonia</b>	25,33	
<b>Particle matter/ endotoxins</b>	46,75	
<b>Zoonosis</b>	43,30	
<b>N/P efficiency</b>	35,78	
<b>Energy</b>	0,00	
<b>Total</b>	<b>212,37</b>	
<b>After conversion factor (250)</b>		<b>0,85</b>
<b>Total BZV score</b>		<b>7,18</b>



## Annex 11: Explanation participation ladder think along

	Citizen-consumers	Farmers	Level of interaction
<b>Informing</b>	The citizen-consumer will be informed, but is not recognized. This can be in the shape of a website or leaflet.	The farmer is responsible for the information about the farm.	No interaction between citizen-consumer and farmer. One-way traffic
<b>Consulting</b>	Involved citizen-consumer will be seen as interlocutor. The results of these conversations are input for the direction the farm will go to.	The results of the citizen-consumer as interlocutor are beneficial, but the farmer does not need to use these results.	There is case of interaction, but the farmer is self-responsible of what to do with the potential results.
<b>Advising</b>	The citizen-consumer is responsible for the problems or potential solutions for this topic.	The farmer is responsible for the topic of the conversation. The farmer does not connect to the results of this gathering.	This level of interaction is depending of the farmer. The farmer indicates that there are plans in for example a new place for the drive way and takes the lead to make this negotiable. Out of this gathering have the farmer input for his plans and can be chosen for another place for the drive way, but this is not compulsory.
<b>Co-producing</b>	The citizen-consumer and farmer are together responsible for decision making and the discussed topics. The farmer has the possibility to deviate of the made decisions, but needs to be able to substantiate this.		This level of interaction is also depending on the farmer, because eventually is the farmer in the position to deviate. On the other hand the commitment of the farmer is in this interaction more important, because this layer is mostly connected to a foundation wherein the farm is the figurehead.
<b>Decision making</b>	The decision making is delegated by the citizen-consumer and the farmer connects to this decisions. An example can be thinking of a pergolabedrijf, wherein the citizen-consumer and farmer decide together what is harvested, what is the salary of the farmer. The positive fact of this participation layer is that risk for falling of a harvest is worn together.		This way of interaction is much more intensive. However, there will not be spoken about cooperation, because the farmer is responsible for the management, but the way the management is managed is decided by both parties. The main of this participation layer is joint responsibility.

*Participation ladder Think Along, Adapted, (Veen et al)*



## Annex 12: Explanation participation ladder joint working

	Citizen-consumer	Farmer	Level of interaction
<b>Spectator</b>	The citizen-consumer does not work at the farm.	The farmer is self-responsible for his management and all the other aspects involved in the farm	No interaction between citizen-consumer and farmer.
<b>Call worker</b>	The citizen-consumer works occasionally by the farm. Foremost, by an exceptional occasion. On application of the farmer. The citizen-consumer is enthusiastic about these occasions.	The farmer asked the citizen-consumer for help for an exceptional occasion. The farmer is self-responsible for the responsibilities he gives to the citizen-consumer.	The cooperation between the farmer and the call worker is the responsibility of the farmer, because he/she can decide to approach the call worker. When the farmer decides to involve the call worker then is the interaction mostly about the responsibilities the farmer have in mind for the call worker.
<b>Volunteer</b>	The citizen-consumer works in the farm, because he/she liked the countryside. Also understands the citizen-consumer that the proceedings need to be handled.	The farmer asked volunteers for regular returning proceedings. The farmer makes the volunteers responsible for the proceedings they need to full fil.	The interaction with volunteers is depending on the farmer, because he/she would like to have volunteers involved in the farm management. However, if a farmer chooses to involve volunteers the interaction is most of the time intense, because the volunteer is enthusiastic and would like to learn more about the country side which creates a foundation of involvement for the farmer.
<b>Joint responsible</b>	Works permanent, is independent and takes responsibility for what he/she does. Haves the possibility to grow, takes initiative and comes up with new ideas	Farmer explained which tasks there are and makes clear what he/she will do and what the citizen-consumer need to do. After this division of tasks the citizen-consumer is self-responsible for the completion.	In the participation layer joint responsible is the citizen-consumer working into the farm. This makes the interaction somewhat more professional, because now is there case of a boss, worker relation. Mostly, the joint responsible is more known with the agricultural sector which makes the need for teaching the citizen-consumer less.

*Participation ladder Joint working, Adapted, (Veen et al)*



### Annex 13: Explanation participation ladder doing business

	Consumer	Farmer	Level of interaction
<b>Unbound customer</b>	Consumer pays the price for the products determined by the farmer	The farmer determined the price of the products example by means of benchmarking	The level of interaction is low; however the consumer pays the products by the farmer which makes the connection and a small interaction.
<b>Regular customer</b>	Consumer pays the price for the products determined by the farmer, aware of the cost price with a purchase guarantee over a certain period of time.	The farmer determined the price of the products, based on a fair cost price. The farmer asked the citizen-consumer for a purchase guarantee.	The consumer purchased products and this is guaranteed over a certain period of time. This increases the level of interaction, because the farmer is pleased with a consumer who is aware of the products he/she is offer. The consumer feels pleased by the small enterprise which creates a foundation of trust.
<b>Associated participant</b>	Consumer pays a set share of the products of the farm. Also appointments over the production are set.	The farmer determined the price of the products in consultation with the citizen-consumer. In addition, mutually agreed what everyone's input would be.	The consumer gets a share in the production of the farm. This creates interaction, because appointments need to be set and a division in input needs to be made.
<b>Associated investor</b>	The consumer borrows money to the farm for potential development. The borrowing of the money is interest-free and risk carrying. The farmer and consumer making agreements about risks, finance, results and deadlines	The farmer asked the consumer to invest money in potential developments that will be earned back and over which interest and redemption will be paid. The farmer is responsible for the business plan and project proposal.	This layer of the participation ladder of doing business together makes a strong interaction, because the consumer understands the need for the potential developments in the farm. This understanding is strongly appreciated by the farmer which makes the farmer enthusiastic to share the business plan and project proposal. This layer strongly connected to doing business together, because there are agreements about risks, finance, results and deadlines.
<b>Sponsor</b>	Consumer donates money for the development of the farm without expected something back. The sponsor makes appointments over what will be realised with the invested money.	The farmer gives insight in the potential developments of the farm. Also makes the farmer a division in what he can realize by himself and what can be handled by the consumers. After this division the initiative is transferred to the consumer.	In sponsorship there is interaction, but this is not comparable with the associated investors, because the consumer would not like to share in the potential profit of the developments. However, the farmer is pleased with the sponsoring of the consumer, because this shows that the consumer would like to be involved which is extremely important for the sector.



		The farmer presents the business plan and project proposal.	
--	--	---	--

Table 14: Participation ladder doing business, Adapted, (Veen et al)



## 10. Annex Results

### Questions LIV

1. Do you think that company etiquette can contribute to social acceptance? (LIV)

- Yes
- No
- Doubts

2. Do you currently take into account the needs of society? (LIV)

- Yes
- No

3. How do you respond to the needs of society? (LIV) (Open question)

4. The impact of societal activities performed (LIV)

- Positive
- Negative

5. Do you perform the dialogue with the neighbourhood? (LIV)

- Yes, with the neighbourhood
- No

7. Do you think that the pig sector becomes more representative through a company etiquette focused at local integration and company appearance? (LIV)

- Yes
- No
- Doubts



## Questions online questionnaire

1. Do you currently take into account the needs of society?

- Yes
- No

2. No, why not?

3. What do you understand by society needs (multiple answers possible)?

- Food safety
- Water & Nature
- Animal Welfare
- Animal Health
- Environmental measures
- Integration in de landscape
- Otherwise

4. How do you inform and respond to the wishes of society (multiple answers possible)?

- Open days
- Guide tours
- Planting plan
- Farm Shop
- Social media
- Otherwise

5. Do you perform the dialogue with the neighbourhood?

- Yes
- No

6. No, why not?

7. In which kind of situations do you perform the dialogue (multiple answers possible)?

- Company development
- Before/ during requests permits
- Regional activities linked to the pig sector
- Otherwise



8. How do you perform the dialogue (multiple answers possible)?

- Formal meeting
- Informal meeting
- Organising of an open day
- Arranging and performing guide tours
- Use of social media
- Otherwise

9. Can you explain the first impression of the development of the company etiquette which should contribute to social acceptance (Open question)?

10. Which subjects are linked to society acceptance?

- Food safety
- Water & Nature
- Animal Welfare
- Animal Health
- Environmental measures
- Integration in the landscape
- Transparency
- Otherwise

11. Do you think that the company etiquette will contribute to society acceptance?

- Yes
- No

12. Why do you think that?

13. Which company elements are important and will contribute to a positive thought of the pig sector? What do you appreciate of your own pig husbandry company (Open question)?

14. Which subjects should be included into the company etiquette (multiple answers possible)?

- Environment
- Manure
- Energy
- Animal welfare
- Animal health
- The society
- Company appearance
- Otherwise



15. Which activities linked to the society can/will you perform to open- up the company (multiple answers possible)?

- Dialogue
- Sight stable
- Open days
- Farm education
- Resting point
- Possibility to receipt
- Farm shop
- Guide tours
- Workshop about the pig sector
- Social media
- Otherwise

16. Which parts are for you important in the incorporation and appearance of the livestock company (multiple answers possible)?

- Situating cadaver place
- The courtyard
- Positioning silos
- Company planting
- Distance between public road and livestock company
- Otherwise

17. How the company etiquette does needs to be checked?

- With use of a certification
- Self-filling checklist (digital)
- Self-filling checklist (In writing)
- No check ( responsibility farmer)
- Otherwise

18. Will you appreciate recognisability of participation in the company etiquette?

- Yes
- No

19. No, why not?

20. How do you want that participation in the company etiquette will be revealed?

- Point of recognition at the courtyard
- Stars/point system
- Company information presented at the *NVV* website
- Certificate
- Otherwise



21. The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?

- Yes
- No

22. Why do you think that?

23. Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette?

- Yes
- No

24. Why do you think that?

24. Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects?

- Yes
- No

26. Why do you think that?



## Results LIV

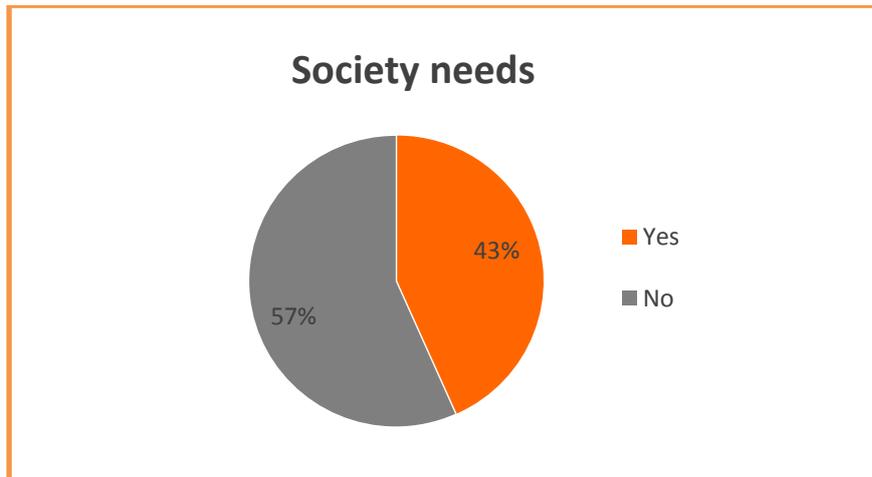


Figure 1: Do you currently take into account the needs of society? (LIV)

Variables	Percentage	Value (n=30)
<b>Yes</b>	43.3%	13
<b>No</b>	56.7%	17

Figure 1 presents that in the thirty questionnaires performed at the LIV 43% of the (n=30) farmers stated that they take into account the needs of society. The other 57% (n=17) say no, because of the costs that needs to be made.

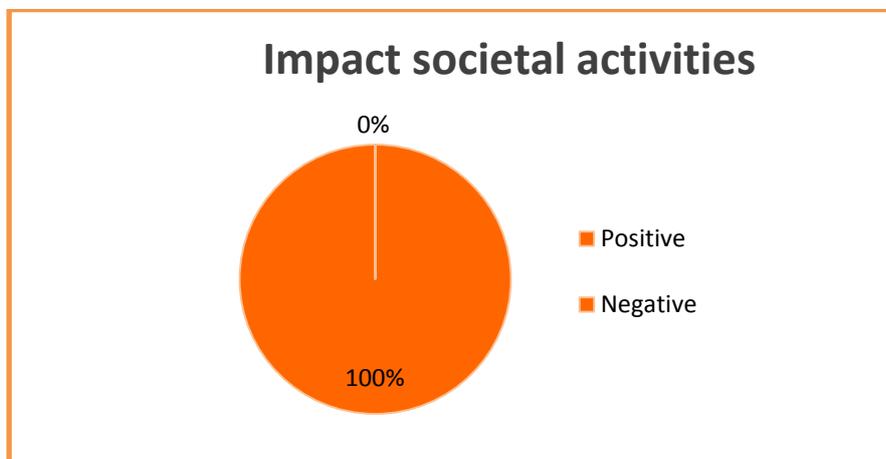


Figure 2: The impact of societal activities performed (LIV)

Variable	Percentage	Value (n=13)
<b>Positive</b>	100.0%	13
<b>Negative</b>	0.0%	0

Figure 2 presents that in the thirty questionnaires performed at the LIV 100% of the (n=13) pig farmers stated that they taking into account the needs of society have a positive impact of the activities for society.



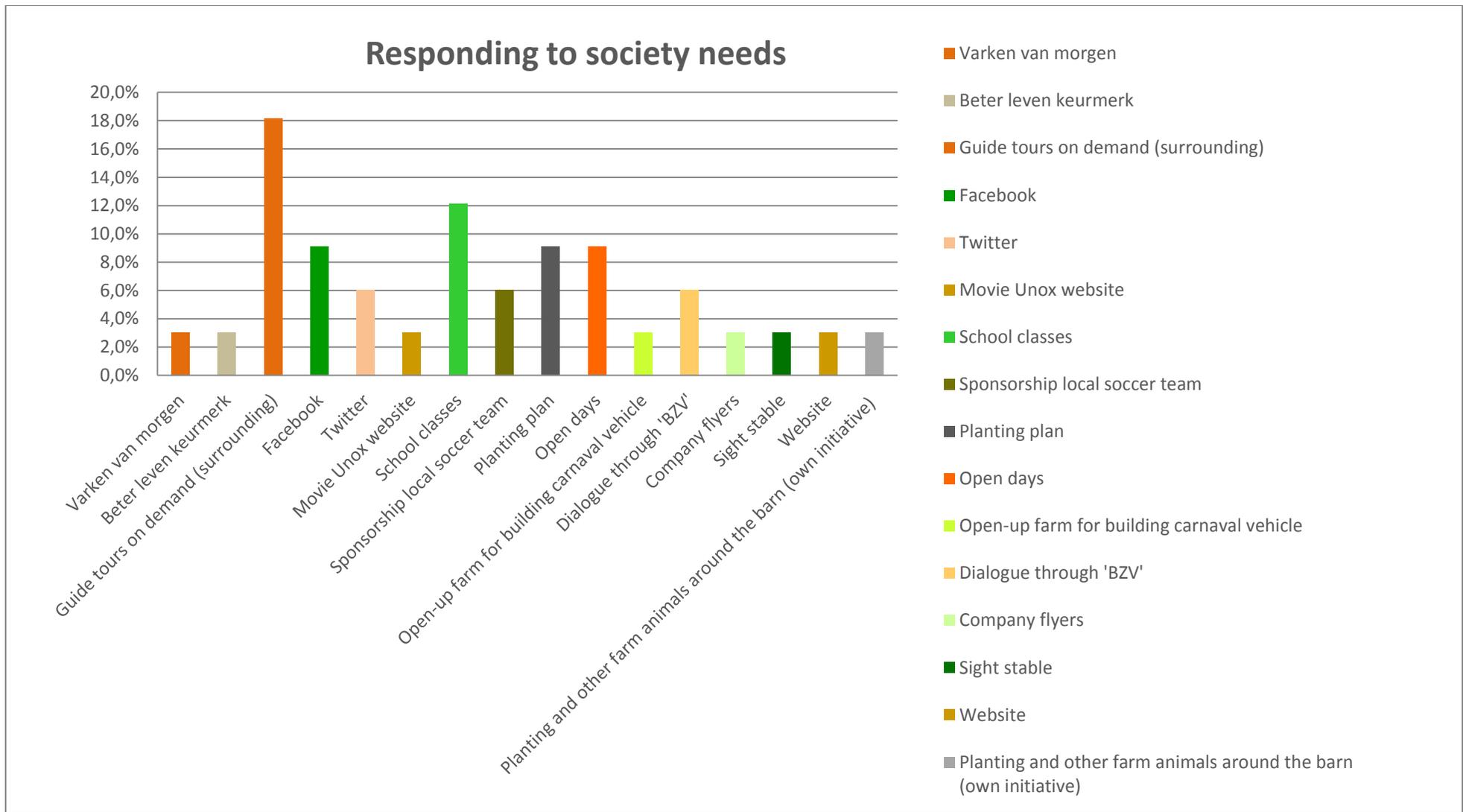


Figure 3: How do you respond to the needs of society? (LIV)



Variable	Percentage	Value
Varken van morgen	3.0%	1
Beter leven keurmerk	3.0%	1
Guide tours on demand (neighbourhood)	18.2%	6
Facebook	9.1%	3
Twitter	6.1%	2
Movie Unox website	3.0%	1
School classes	12.1%	4
Sponsorship local soccer team	6.1%	2
Planting plan	9.1%	3
Open days	9.1%	3
Open-up farm for building carnaval vehicle	3.0%	1
Dialogue through 'BZV'	6.1%	2
Company flyers	3.0%	1
Sight stable	3.0%	1
Website	3.0%	1
Planting and other farm animals around the barn (own initiative)	3.0%	1

From the (n=30) farmers spoken at *LIV* 43% was active in the neighbourhood which is presented in the pie chart (figure 1). From the 43% of pig farmers that are active in the neighbourhood 100% had a positive reaction at the performed society activities which can differ from use of social media to open days. The bar graph (figure 3) indicates the different activities for society performed by the farmers spoken at the *LIV*.



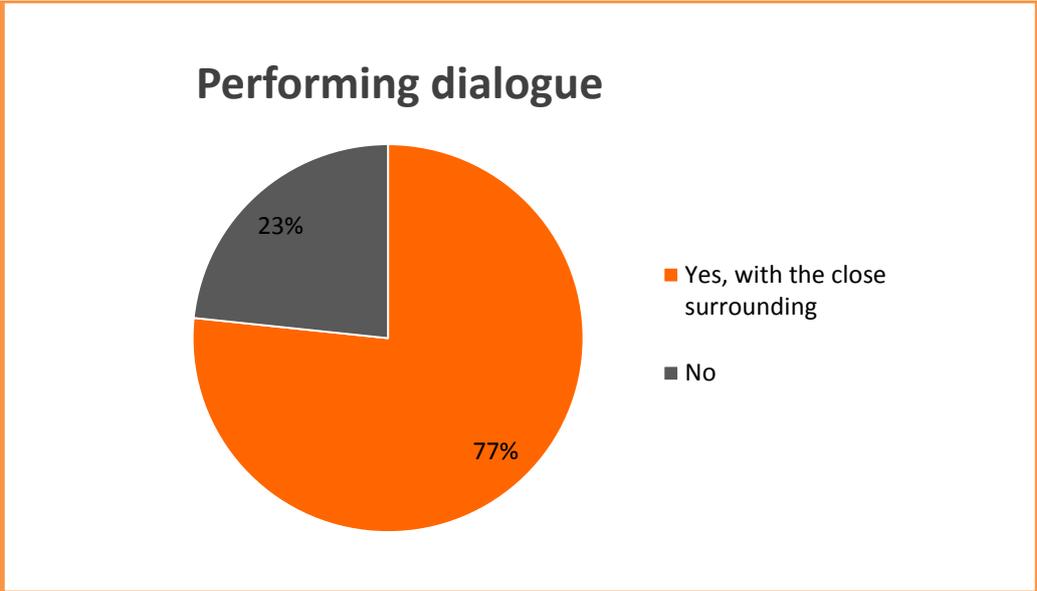


Figure 4: Do you perform the dialogue with the neighbourhood? (LIV)

Variable	Percentage	Value (n=30)
<b>Yes, with the neighbourhood</b>	76.7%	23
<b>No</b>	23.3%	7

In addition, questions about the dialogue were asked because of the obligation of the dialogue in the BZV. From these questions it came forward that 77% of the (n=30) pig farmers spoken had dialogue with the neighbourhood. The content of this dialogue differs from neighbours that would like to know more about pig farming to the dialogue in the neighbourhood, about permits and small scale company development. The 23 % of farmers that did not perform the dialogue were hesitant, because one neighbour can cause problems in company development and obtaining permits. In the questions about the dialogue the farmers stated that it is extremely important to be involved in the neighbourhood. For example, sponsoring of the local soccer club and ensure that the neighbourhood have no inconvenience of the farmer such as smell, noise or a filthy company appearance.



## Results online questionnaire

### The society

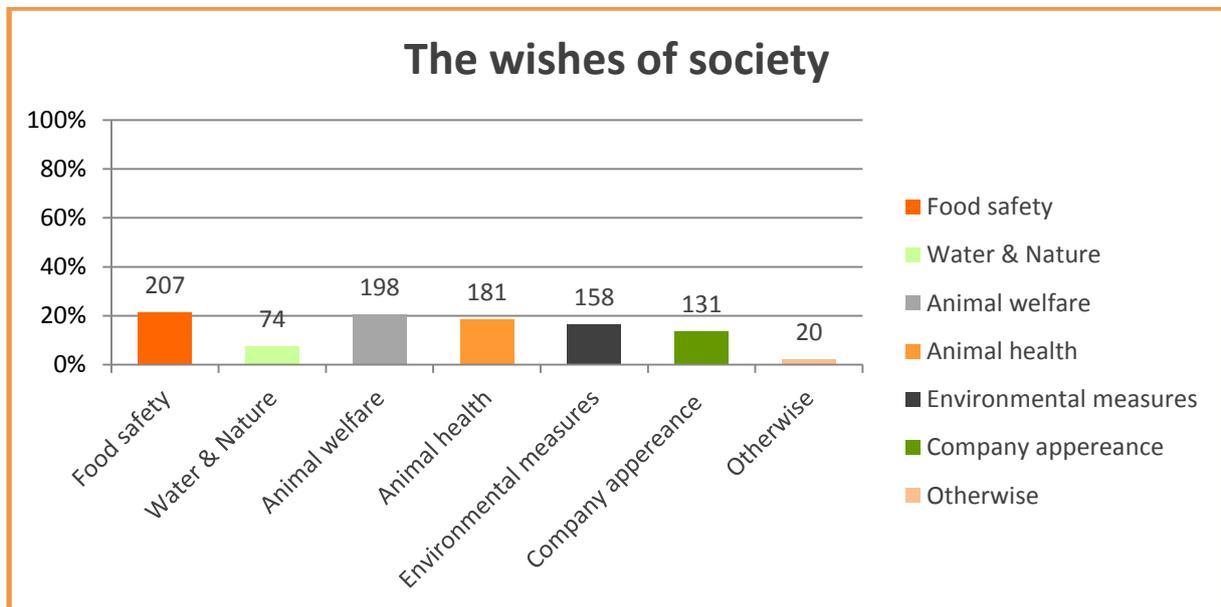


Figure 1: What do you understand by society needs (multiple answers possible)?

Variable	Percentage	Values
<b>Food safety</b>	21.4%	207
<b>Water &amp; Nature</b>	7.6%	74
<b>Animal welfare</b>	20.4%	198
<b>Animal health</b>	18.7%	181
<b>Environmental measures</b>	16.3%	158
<b>Company appearance</b>	13.5%	131
<b>Otherwise</b>	2.1%	20

In figure 1 different subject in relation to society demands are described. The (n=222) respondents that answered yes on the question 'wishes of society' do also need to answer this question wherein there was the possibility to choose multiple subjects. The possibility to choose multiple answers resulted in the high values of answers described. The figure indicates that (n=207) times is answered that the (n=222) respondents stated that food safety (21%) is the most important need for society. The second importance for the society is the subject animal welfare with a value of (n=198) answers. The third subject is animal health with (n=181) answers. The lowest value for the stated subjects related to society needs is water & nature with (n=74) times answered. The percentage that had chooses for otherwise (2%) stated that the society needs are foremost focused at the price of animal meat. Also, the reduction of emission came forward, because citizen-consumers are mostly not pleased with the smell of a pig farm. Another aspect which was described by the option otherwise was the importance to be sustainable and transparent when possible.



## The society

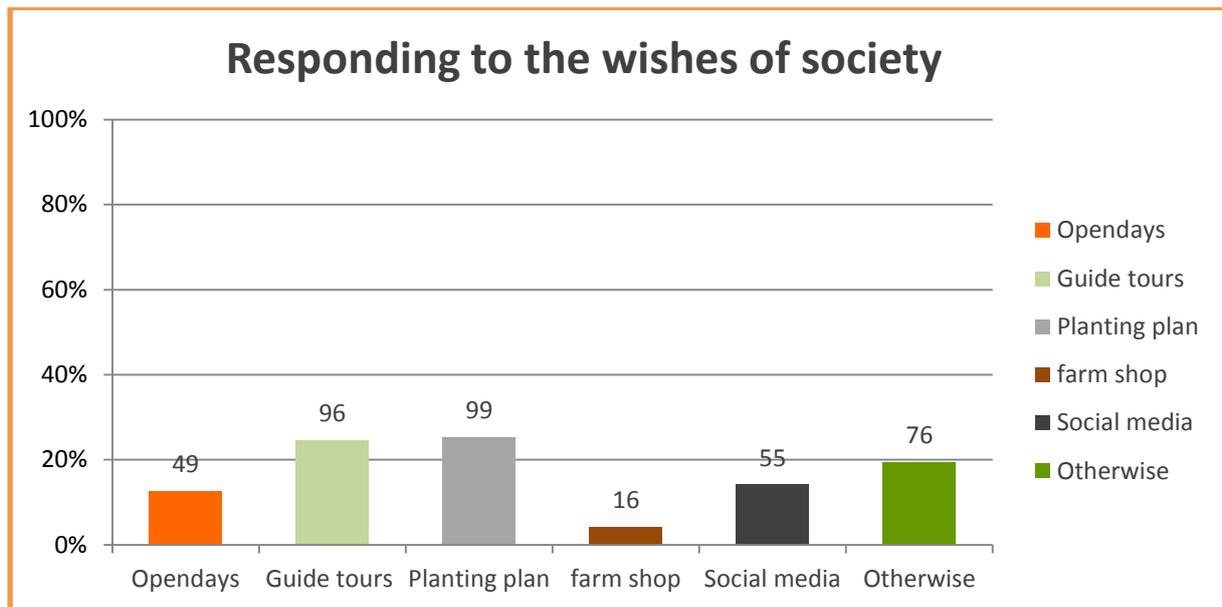


Figure 2: How do you inform and respond to the wishes of society (multiple answers possible)?

Variable	Percentage	Value (n=232)
<b>Open days</b>	12.5	49
<b>Guide tours</b>	24.6%	96
<b>Planting plan</b>	25.3%	99
<b>Farm shop</b>	4.1%	16
<b>Social media</b>	14.1%	55
<b>Otherwise</b>	19.4%	76

Figure 2 shows the activities to respond and inform to the wishes of society. The (n=232) respondents that answered yes on the question 'reacting at the wishes of society' also need to answer this question wherein there was the possibility to choose multiple activities. The possibility to choose multiple answers resulted in the high values of answers described. The bar graph indicates that (n=99) times is answered that the respondents reacting at the wishes of society by executing a planting plan (25.3%) which contributes to suitability of the farm in the neighbourhood. The second activity is the performance of guide tours (24.6%) which is focused at the informing part of the question. The third activity is the performance of open days (12.5%) which is more focused at open-up then informing the citizen-consumer. The lowest value of the responding to the wishes of society is the society activity to sell animal products (4.1%) at the farm. The farmers that choose for otherwise (19.4%) stated that a conversation with citizens-consumers that are really interested is the activity to perform. This does not need to be a well-organized guide tour, but a 'kitchen table conversation'. Another subject that was described by the option otherwise was adapting to the wishes of citizen-consumer by follow extra-legal measures in for example animal welfare. Also, the incorporation of farms in the neighbourhood was stated multiple times, because farmers understand that a farm can cause nuisance such as smell.



## Dialogue

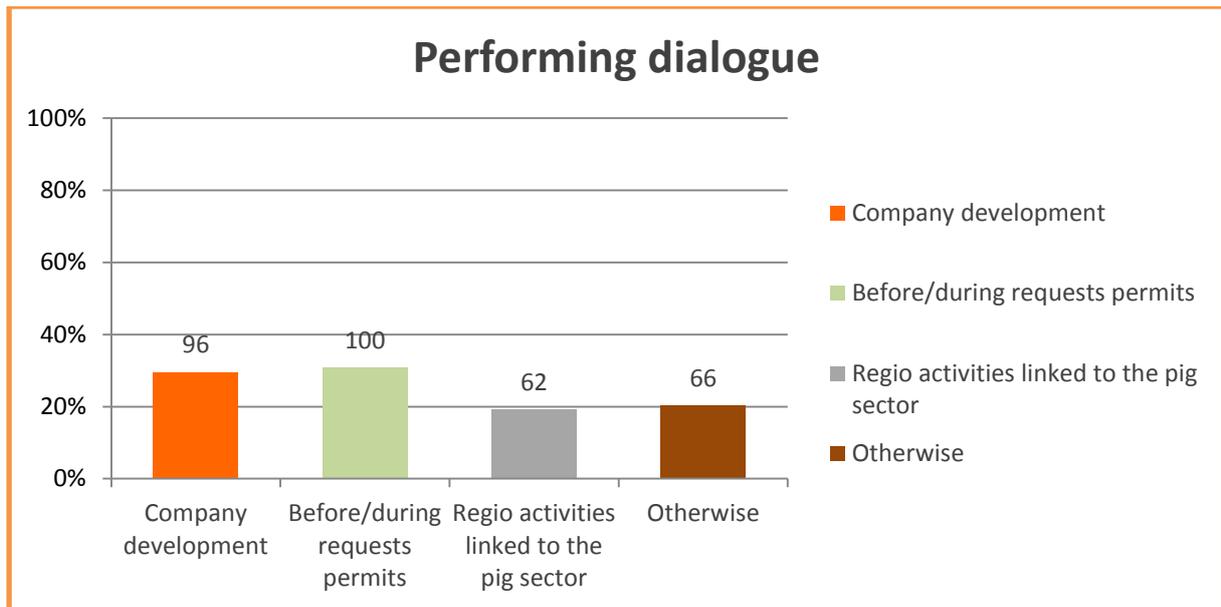


Figure 3: In which kind of situations do you perform the dialogue (multiple answers possible)?

Variable	Percentage	Value (n=198)
<b>Company development</b>	29.6	96
<b>Before/during requests permits</b>	30.9%	100
<b>Regio activities linked to the pig sector</b>	19.1%	62
<b>Otherwise</b>	20.4%	66

Figure 3 presents different situation wherein a dialogue in the pig sector is foremost executed. The (n=198) respondents that perform the dialogue also need to answer this question wherein there was the possibility to choose multiple activities. The possibility to choose multiple answers resulted in the high values of answers described. The (n=198) respondents that perform a dialogue with the neighbourhood do this mostly before and during the request of permits (30.9%). The second part is company development (29.6%) which is important to share with the neighbourhood, because experiences have shown that company development is not always received positively. However, this can mainly be linked to lack of knowledge about the reason and eventually impact of a company development. The third situation to performing dialogue is at regional activities that are linked to the pig sector (19.1%). The (n=66) answers given for otherwise (20.4%) stated that there is performed dialogue with the neighbourhood the whole year, so this does not needs to be performed in a certain situation or request. Another part described at otherwise is the involvement in the neighbourhood which eventually will lead to no problems in case of requesting permits. An example of involvement in the neighbourhood described was sponsoring of the local soccer club or participating in other local activities.



## Dialogue

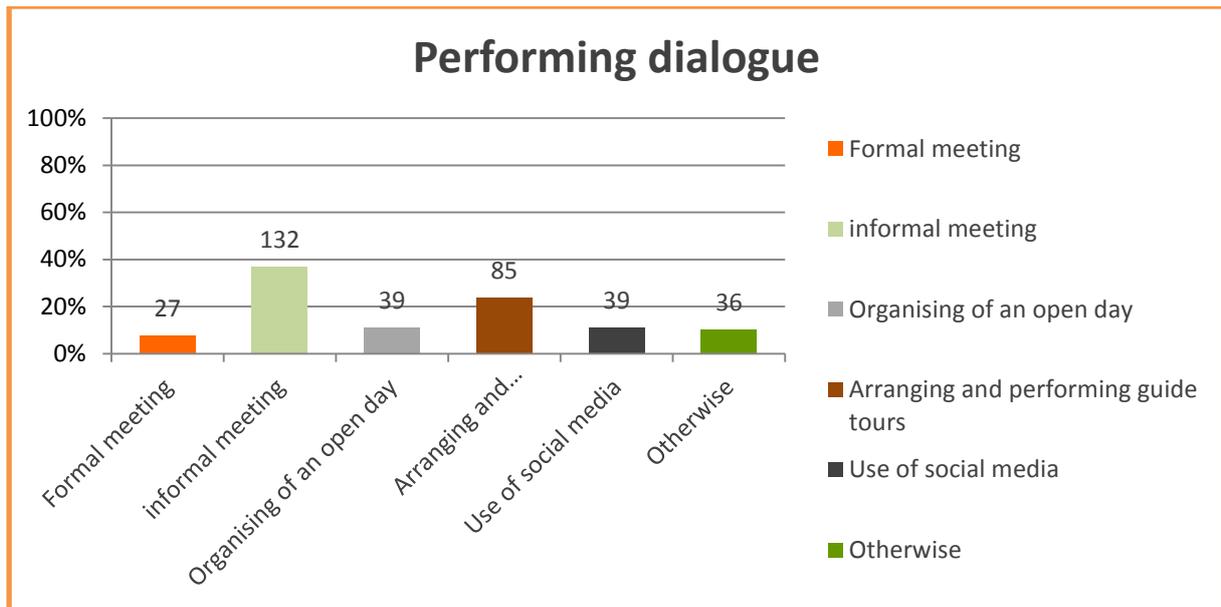


Figure 4: How do you perform the dialogue (multiple answers possible)?

Variable	Percentage	Value (n=198)
<b>Formal meeting</b>	7.5%	27
<b>informal meeting</b>	36.9%	132
<b>Organising of an open day</b>	10.9%	39
<b>Arranging and performing guide tours</b>	23.7%	85
<b>Use of social media</b>	10.9%	39
<b>Otherwise</b>	10.1%	36

Figure 4: of the (n=198) farmers that perform dialogue are asked how the dialogue is performed. The (n=198) respondents that performing the dialogue do also need to answer this question wherein there was the possibility to choose multiple activities. The possibility to choose multiple answers resulted in the high values of answers described. In performing of the dialogue comes forward that the highest (n=132) is the informal meeting (36.9%). The second performance of the dialogue is the arrangement and performing of guide tours (23.7%) wherein the citizen-consumer will be informed about the livestock company. The other two ways of performing the dialogue are organising of an open day (10.9%) and the use of social media (10.9%), such as a website, Facebook and Twitter. At the option otherwise (10.1%) was foremost stated that performing the dialogue is the best at a personal level so connection between farmer and citizen-consumer at small scale, because this creates the best conditions to interact at a higher level.



## The society

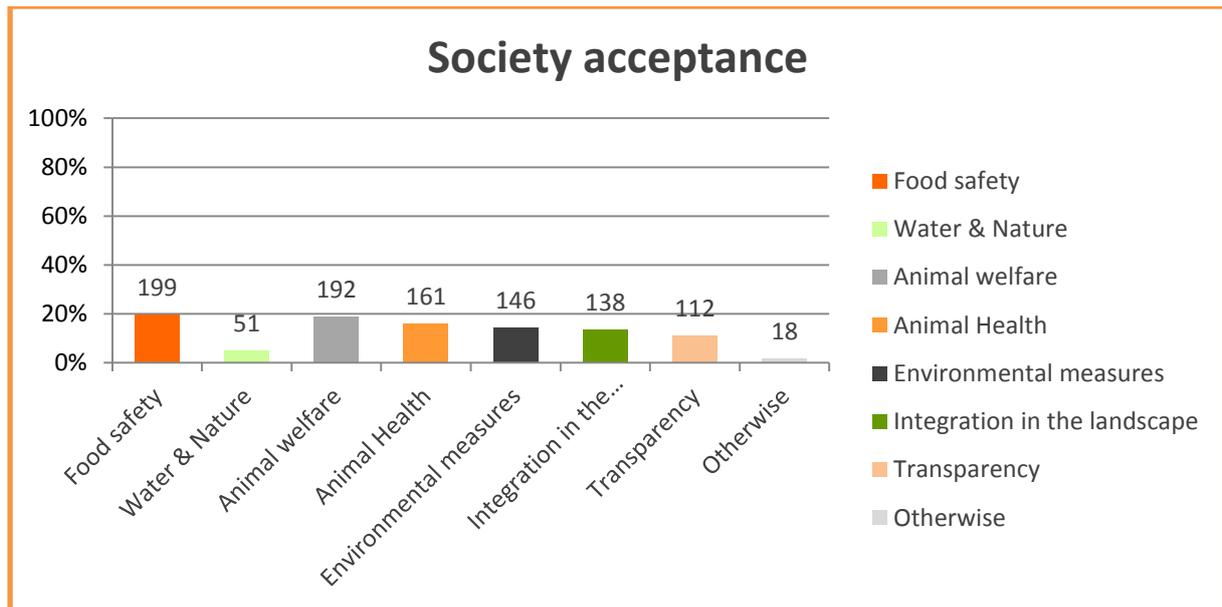


Figure 5: Which subjects are linked to society acceptance?

Variable	Percentage	Value (n=232)
<b>Food safety</b>	19.6%	199
<b>Water &amp; Nature</b>	5.0%	51
<b>Animal welfare</b>	18.9%	192
<b>Animal Health</b>	15.8%	161
<b>Environmental measures</b>	14.4%	146
<b>Integration in the landscape</b>	13.6%	138
<b>Transparency</b>	11.0%	112
<b>Otherwise</b>	1.8%	18

Figure 5 shows the subjects linked to society acceptance stated by the respondents. The (n=232) farmers that have answered this question are of opinion that the safety of food (19.6%) is the most important subject for the respondents. This is followed by animal welfare (18.9%) and animal health (15.8%). The lowest value of subjects linked to society acceptance is water & nature (5.0%). The farmers that choose for otherwise (1.8%) stated that the subject public health misses. Nine of the (n=18) answers given indicated that the dialogue within the neighbourhood was missing, because from the farmers experience the local citizens are pleased with interaction and information of the farm. Besides this, up-scaling came forward, because this up to date subject creates negativity for the sector, because citizen-consumer have a negative idea about the management in a large scale stable. Therefore, this subject is linked to society acceptance, because it will be essential to inform about up- scaling to reduce the negativity which can counteract legislation such as the BZV.



## The society

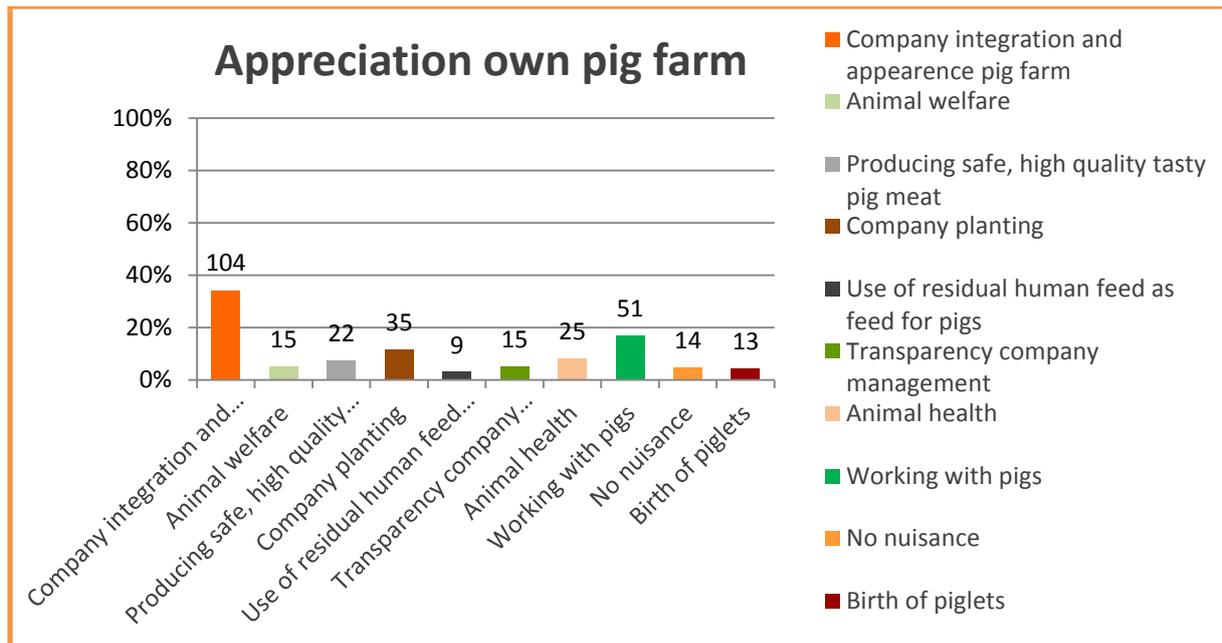


Figure 6: Which company elements are important and will contribute to a positive thought of the pig sector? What do you appreciate of your own pig husbandry company (Open questions)?

Variable	Percentage	Value
Company integration and appearance pig farm	34.3%	104
Animal welfare	5.0%	15
Producing safe, high quality tasty pig meat	7.3%	22
Company planting	11.6%	35
Use of residual human feed as feed for pigs	3.0%	9
Transparency company management	5.0%	15
Animal health	8.3%	25
Working with pigs	13.9%	51
No nuisance	4.6%	14
Birth of piglets	4.3%	13

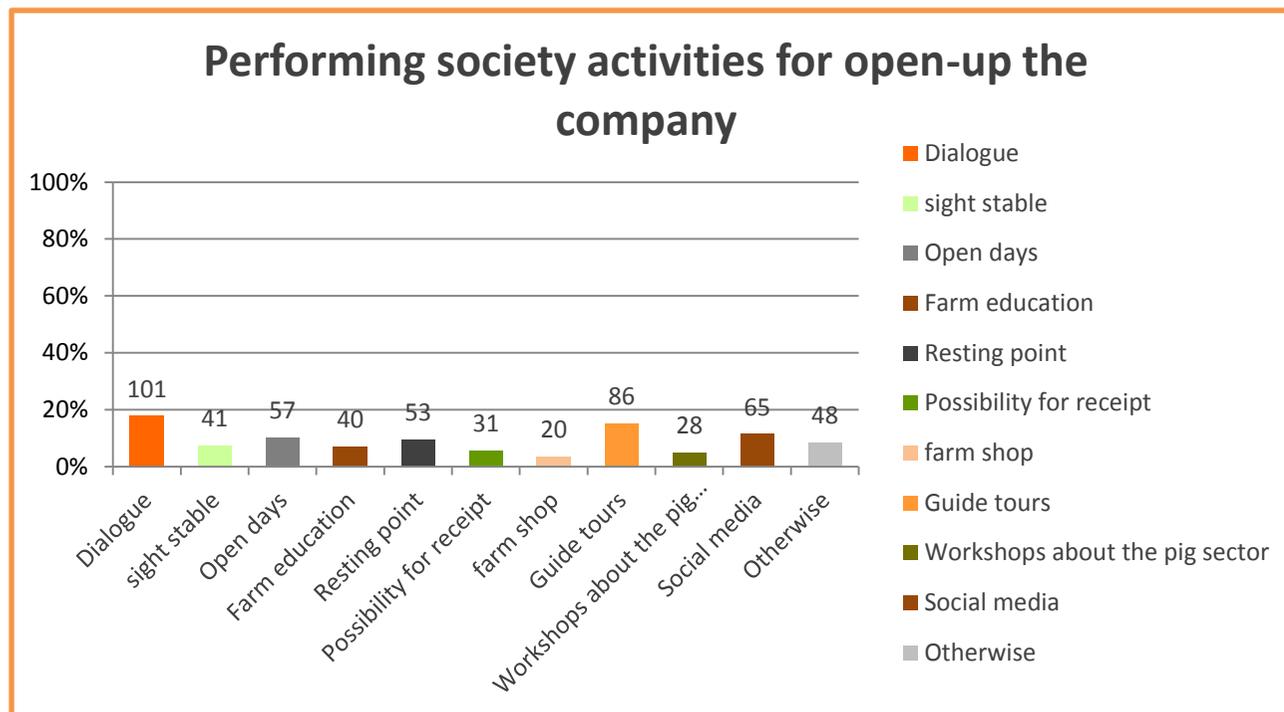
Figure 6 presents the open question about which elements are important and will contribute to a positive thought of the pig sector in the eyes of the pig farmer. In answering this question an open answer is given. The possibility to give an open answer indicates the high values of answers described. The performance of an open question mean that there is no (90%) profitability that these answers are exactly the percentages described in the table, therefore it will be rounded percentages. What appreciates the farmer of its own farm? From the (n=232) farmers that have completed the online questionnaire (n=104) times is answered that the farmers appreciate integration and appearance of the pig farm which also contributes to a positive pig sector. Linked to this is company planting (11%) and no nuisance, because these are subjects for a proper integration and appearance of the pig farm. Also came forward that the respondents like to work with pigs (13%). Also animal health (8%) and producing of a safe high quality piece of meat (7%) contributed to a positive thought and is appreciated by the farmer himself. Furthermore came forward that the farmer likes to be transparent (5%) about the company management and that the welfare standards (5%) are met. In



addition, the farmers stated that is appreciated when piglets (4%) are born, because this is a high cuddle level which is positive for the image and it is appreciated by the farmer.



## The society



Variable	Percentage	Value
Dialogue	17.7%	101
sight stable	7.2%	41
Open days	10.0%	57
Farm education	7.0%	40
Resting point	9.3%	53
Possibility for receipt	5.4%	31
farm shop	3.5%	20
Guide tours	15.1%	86
Workshops about the pig sector	4.9%	28
Social media	11.4%	65
Otherwise	8.4%	48

Figure 7: Which activities linked to the society can/will you perform to open-up the company (multiple answers possible)?

Figure 7 present the answers given on the question 'which activities linked to society can/will you perform to open-up the company'. In this question it was possible to choose multiple answers so there was the possibility to choose multiple subjects. The possibility to choose multiple answers resulted in the high values of answers described. The figure show that performing the dialogue (17.7%) is the most answered subject (n=101). This is followed by the performance of guide tours (15.1%), (n=86) times answered. The third activity that will be performed by the farmers to open-up is the use of social media (11.4%) which helps to open-up at another level then real life dialogue and guide tours. The lowest value presented is the realization and performance is the performance of a farm shop (3.5%). The farmers that choose for otherwise (8.4%) stated that the selection options for society activities will not help to positively influence the pig sector, because the negativity will remain, because of other parties involved such as the media and pressure groups. Also came forward that some of the farmers will like to pay for initiatives like Stap in de Stal, because this concept is the best 'open-up' a pig farm can perform and it suits the farmers that have chosen to perform this concept.



## Subjects' company etiquette

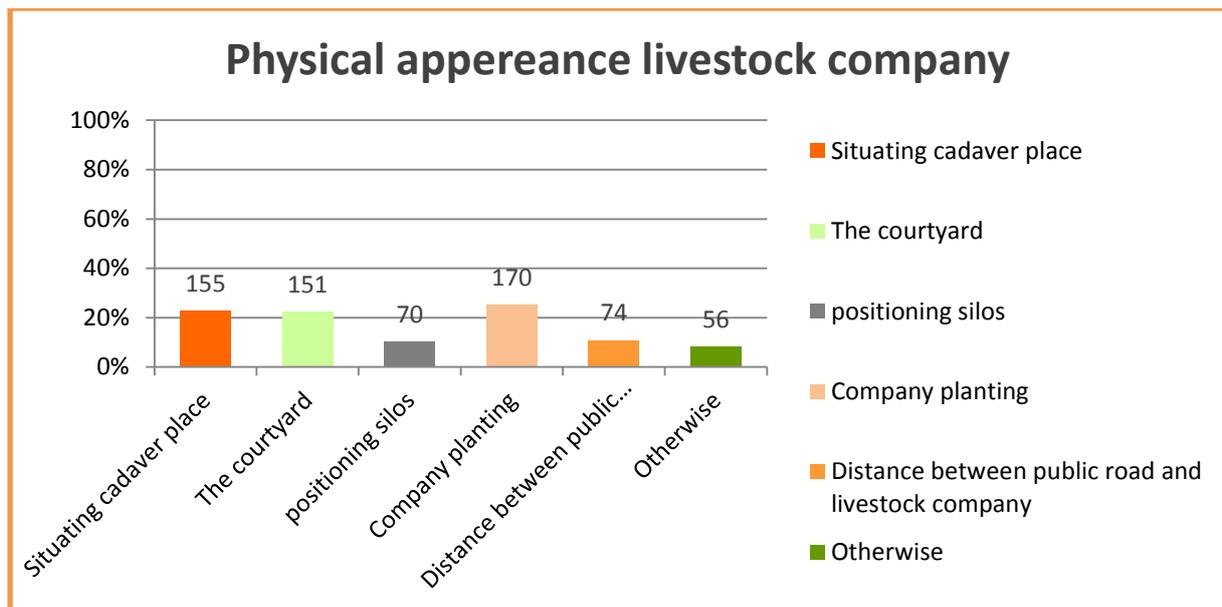


Figure 8: Which parts are for you important in the incorporation and appearance of the livestock company (multiple answers possible)?

Variable	Percentage	Value (n=232)
<b>Situating cadaver place</b>	22.9%	155
<b>The courtyard</b>	22.3%	151
<b>positioning silos</b>	10.4%	70
<b>Company planting</b>	25.1%	170
<b>Distance between public road and livestock company</b>	10.9%	74
<b>Otherwise</b>	8.3%	56

Figure 8 present the parts that can be linked to the physical appearance of the livestock company in the opinion of the (n=232) respondents. In answering this question was the possibility to choose multiple subjects. The possibility to choose multiple answers resulted in the high values of answers described. The planting around the company (25.1%) is seen as important in the incorporation and appearance of the livestock company. Also, the situating of the cadaver place (22.9%) and the courtyard (22.3%) seems to be important. The lowest value is the positioning of the silos (10.4%). The percentage that had chooses for otherwise (8.3%) stated that the biggest importance is that the company is cleaned- up, well organized and maintained without nuisance of smell.



## Implementing company etiquette

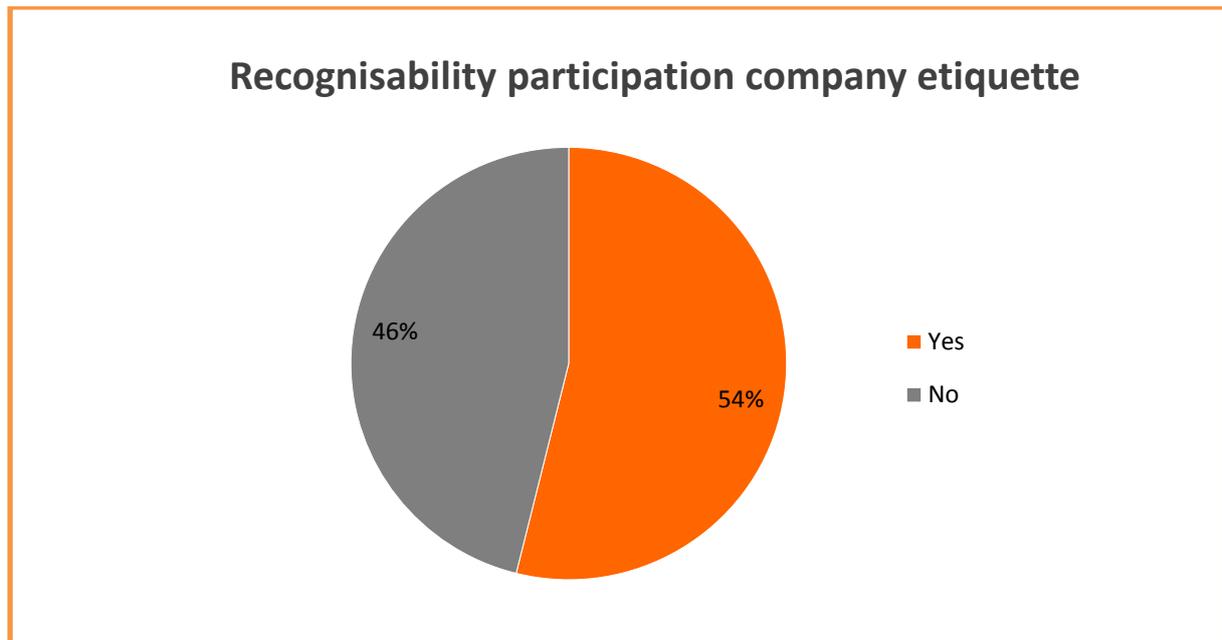


Figure 9: Will you appreciate recognisability of participation in the company etiquette?

Variable	Percentage	Value (n=232)
<b>Yes</b>	53.9%	125
<b>No</b>	46.1%	107

Figure 9 presents the percentage of respondents that appreciate (n=125) and not appreciate recognisability (n=107) for cooperation into the company etiquette. In total (54%) of the respondents appreciate recognisability, the remaining (46%) will not be recognized for compliance or using the company etiquette. The reasons that farmers do not want to be recognised are based at the fact that the farmers do not like to be in the centre of attention. Besides this, recognition gives a feeling of obligation which is already a strong feeling, because of all the legislation involved in pig husbandry.



## Implementing company etiquette

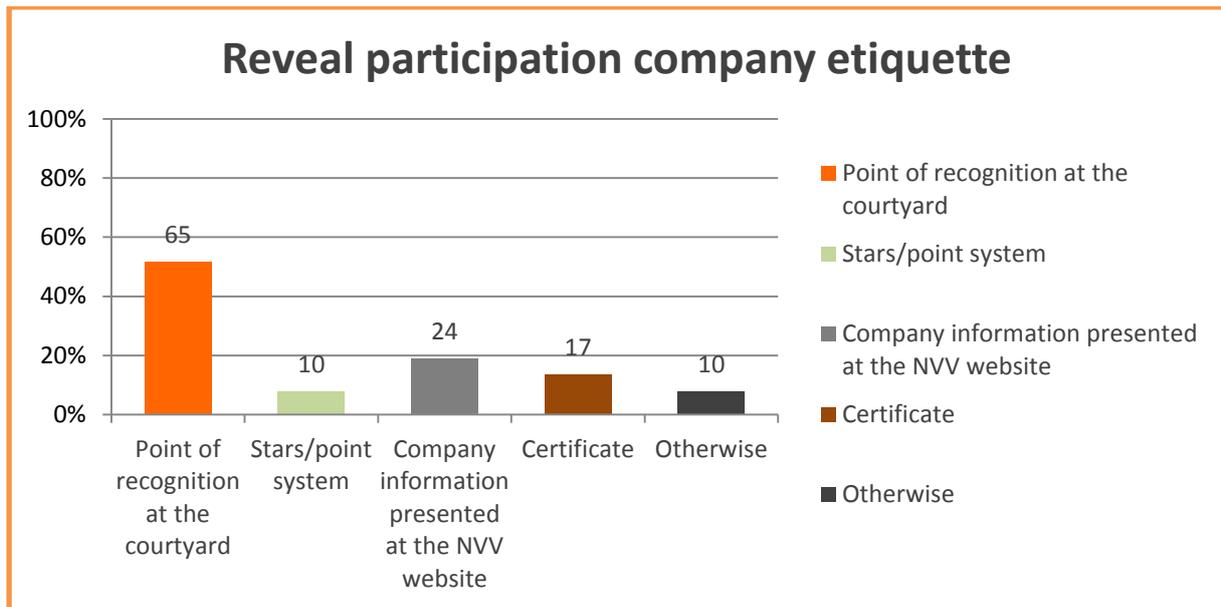


Figure 10: How do you want that participation in the company etiquette will be revealed?

Variable	Percentage	Value (n=125)
<b>Point of recognition at the courtyard</b>	51.6%	65
<b>Stars/point system</b>	7.9%	10
<b>Company information presented at the NVV website</b>	19.0%	24
<b>Certificate</b>	13.5%	17
<b>Otherwise</b>	7.9%	10

Figure 10 presents the different ways the company etiquette can be revealed in the opinion of the respondents. The (n=125) farmers that have stated that they appreciate recognisability of participating in the company etiquette stated that the point of recognition needs to be located at the courtyard (51.6%). Also, company information presented at the NVV website (19.0%) can be a way to reveal the participation. Thirdly, a certificate (13.5%) can be linked to participation in the company etiquette. The lowest is the stars/point system (7.9%) think of *Beter Leven Keurmerk*. The percentage that chooses for otherwise (7.9%) also stated the recognition of the courtyard. One notable remark was a point of recognition which will indicate that the farmer is working at points that are 'advised' by means of the company etiquette.



## The Company etiquette

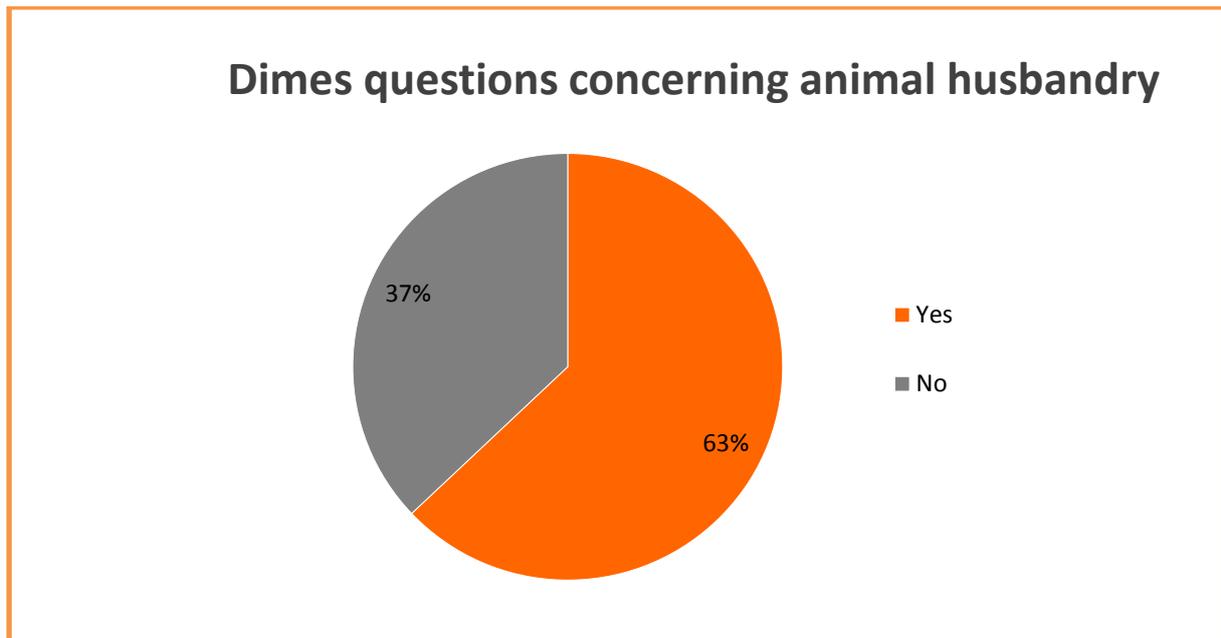


Figure 11: The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?

Variable	Percentage	Value (n=232)
Yes	62.9%	146
No	37.1%	86

Figure 11 presents the percentage of respondents expecting that 'fewer questions will be asked' through the use of the company etiquette. From the (n=232) respondents 63% is of opinion that the etiquette will contribute to diminish the question. The other 37% does not think the questions will diminish. To gain insight in the reason for choosing yes or no there is asked why the farmer think the company etiquette will dimes questions about animal husbandry. The reasons that farmers think the company etiquette will dimes questions is, because the company etiquette will help to be transparent and informative which is required by Dutch society. Also, the focus at the company incorporation and appearance will help to dimes questions, because a well-organized farm at the outside can directly give an indication about the performance at the inside. The farmers believe that the company etiquette can help to become a unit which communicates with one story which cannot be discussed by pressure groups and media, because all respondents are in one line and following the same directives which creates a strong sector foundation. From the 86 farmers that do not expect the company etiquette will contribute to fewer question stated foremost that the media, politics and pressure groups will also have the power to create questions over the pig sector. Thereby, the citizens-consumers are difficult to reach by the respondents, because the distance is too large. Another, striking part that came forward was that the company etiquette will create more questions, because there are all many certificates, logo's and concepts that are focusing on the society demands which means that the choice option for the citizen-consumer becomes more which direct creates questions about what a certain logo can say about a management system and eventually the product when it will be linked to a product.



## The Company etiquette

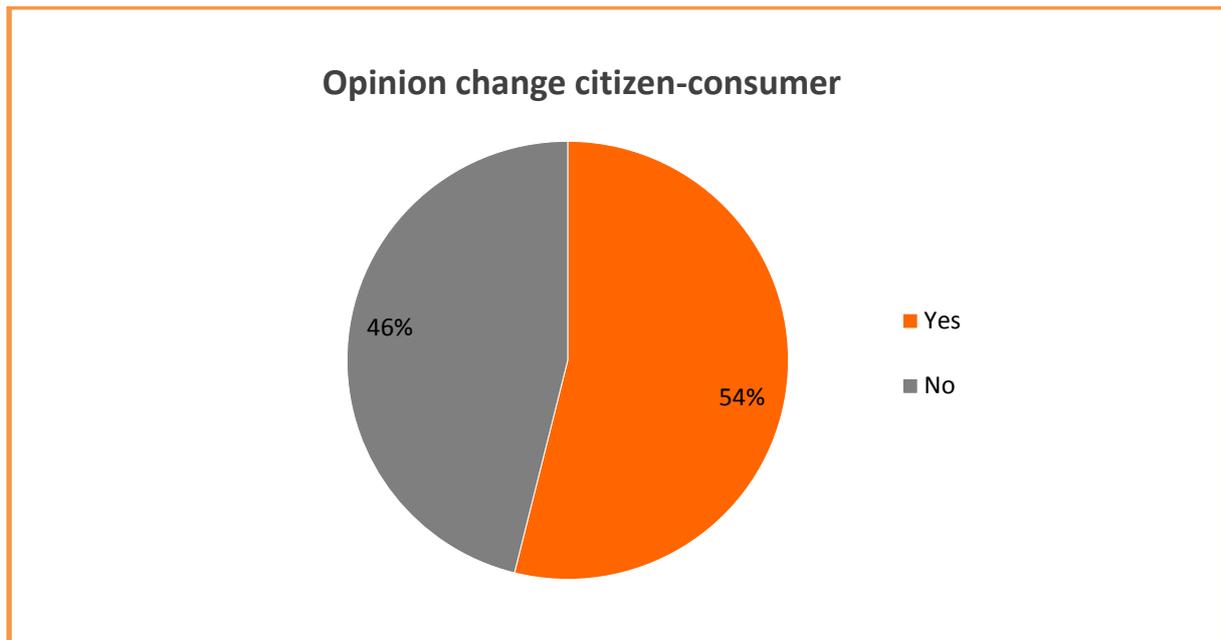


Figure 12: Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette?

Variable	Percentage	Value (n=232)
<b>Yes</b>	53.9%	125
<b>No</b>	46.1%	107

Figure 12 presents the percentage of farmers thinking that the company etiquette will contribute at 'changing the opinion of citizen-consumer', about the pig sector. From the (n=232) respondents 54% is of opinion that the opinion of the citizen-consumer can change the remaining 46% thinks this will not be realisable. To gain insight in the reason for choosing yes or no there is asked why the farmers think the company etiquette will contribute to change the opinion or do not think the company etiquette will contribute. The pig farmer believes the company etiquette can contribute if it will be promoted at large scale, because then will be showed that the farmer is proactive towards society wishes. Another reason that farmers suspect it will contribute is the fact that reacting at emotion and perception of the citizens will create trust which is essential to dimes the gap between citizen-consumer and farmer and which will contribute in opinion change of society. Thereby, the company etiquette will help to underline the positive points of a farm and will gain insight in the points for improvement which helps the farmers to adapt. The reasons described for not expecting the opinion changes is that the citizens-consumer are not interested in such company etiquette. Another reason stated is the fact that the negativity by the media stays leading, because the power to reach the Netherlands nationwide is easily realisable for the media and not for a company etiquette developed by Dutch respondents.



## Correlations

### Correlation 4

H1: A correlation (with 90% probability) is found between *Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects* and *Do you think that the company etiquette will contribute to society acceptance*.

**Correlations**

		Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects ?	Do you think that the company etiquette will contribute to society acceptance?
Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects?	Pearson Correlation	1	.469**
	Sig. (2-tailed)		.000
	N	232	232
Do you think that the company etiquette will contribute to society acceptance?	Pearson Correlation	.469**	1
	Sig. (2-tailed)	.000	
	N	232	232

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the representatively of the pig sector and the society acceptance contributed by the company etiquette (n=232) is intermediate (R=.469) and there is a significance (.000 = <0.00) on a 90% probability level.



## Correlation 5

H1: A correlation (with 90% probability) is found between *Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette* and *the goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?*

### Correlations

		Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette?	The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?
Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette?	Pearson Correlation Sig. (2-tailed) N	1  232	.436** .000 232
The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?	Pearson Correlation Sig. (2-tailed) N	.436** .000 232	1  232

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the changing opinion of the citizen-consumer and the goal to dimes questions (n=232) is intermediate (R=.436) and there is a significance (.000 = <0.00) on a 90% probability level.



## Correlation 6

H1: A correlation (with 90% probability) is found between *Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects* and *The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?*

**Correlations**

		Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects ?	The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette ?
Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects?	Pearson Correlation	1	.433**
	Sig. (2-tailed)		.000
	N	232	232
The goal of the company etiquette is dimes questions about animal husbandry. Do you think that fewer questions will be asked through the use of the company etiquette?	Pearson Correlation	.433**	1
	Sig. (2-tailed)	.000	
	N	232	232

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the changing opinion of the citizen-consumer and the goal to dimes questions (n=232) is intermediate (R=.433) and there is a significance (.000 = <0.00) on a 90% probability level.



## Correlation 7

H1: A correlation (with 90% probability) is found between *Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects* and *Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette*

**Correlations**

		Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects ?	Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette ?
Do you expect that the pig sector becomes more representative by the use of the company etiquette, based at the chosen main-subjects?	Pearson Correlation	1	.456**
	Sig. (2-tailed)		.000
	N	232	232
Do you expect that the opinion of citizen-consumer changes when you participate in the company etiquette?	Pearson Correlation	.456**	1
	Sig. (2-tailed)	.000	
	N	232	232

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The correlation between the representativity of the pig sector and the changing opinion of the citizen-consumer (n=232) is intermediate (R=.456) and there is a significance (.000 = <0.00) on a 90% probability level.



## Results Agricultural questionnaire (2013)

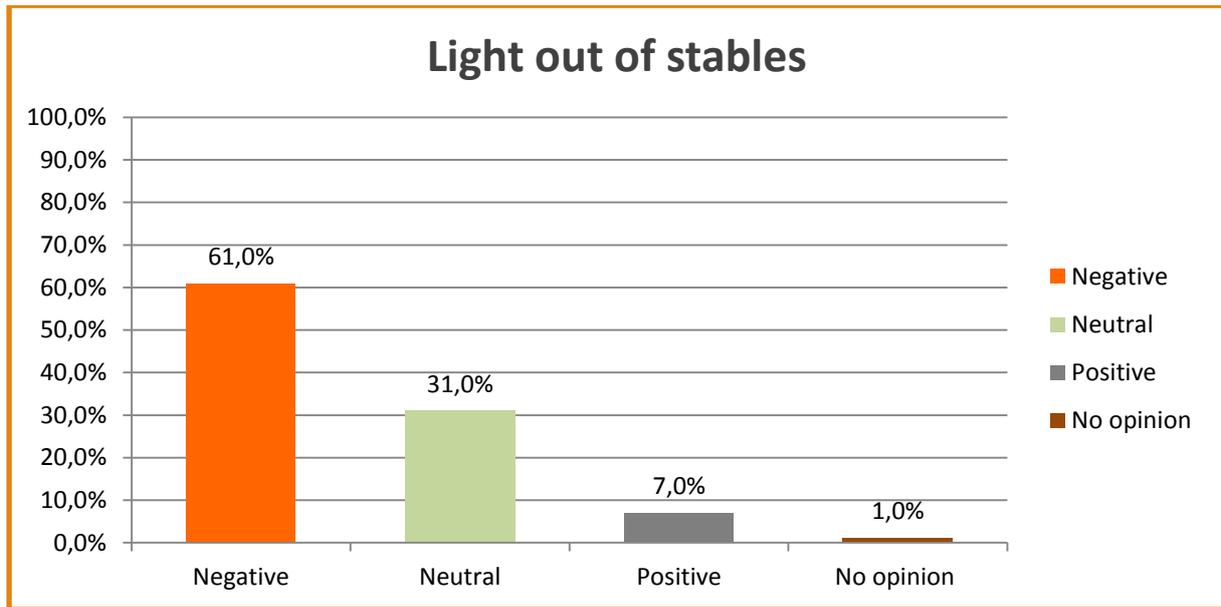


Figure 13: Increase of light out of stables experienced as negative?

Variable	Percentage	Value (n=4250)
<b>Negative</b>	61.0%	2592.5
<b>Neutral</b>	31.0%	1317.5
<b>Positive</b>	7.0%	297.5
<b>No opinion</b>	1.0%	42.5

Figure 13 presents what the citizen-consumer thinks of an increase of light out of barns. The figure presents that of the approximately (n=4250) citizen-consumer 61% is negative about this increase. Of the approximately (n=4250) 31% is neutral and 7% is positive. The remaining 1% of the respondents do not have an opinion about the increase of light out of stables



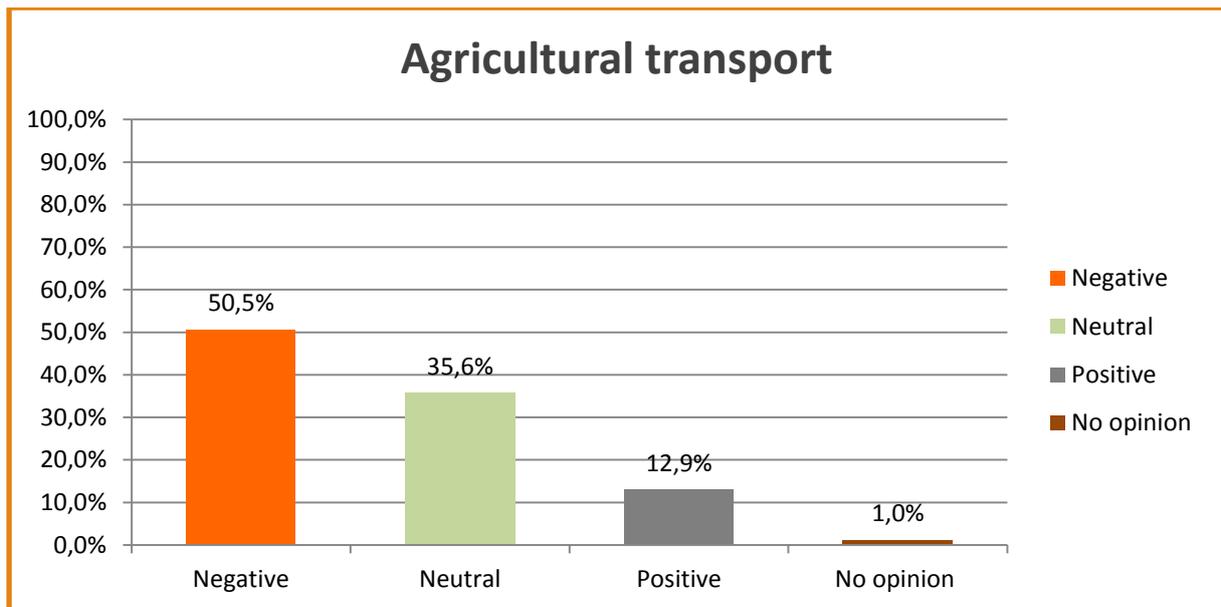


Figure 14: What do you think of transport of live animals and other agricultural vehicles on the provincial road?

Variable	Percentage	Value (n=4250)
<b>Negative</b>	50.5%	2167.5
<b>Neutral</b>	35.6%	1530
<b>Positive</b>	12.9%	552.5
<b>No opinion</b>	1.0%	42.5

Figure 14 presents what the citizen-consumer think of transport of live animals and other agricultural vehicles on the provincial road. The figure presents that of the approximately (n=4250) citizen-consumers 51% is negative about these kinds of vehicles. Of the approximately (n=4250) 36% is neutral about this question. Thirdly is answered that 13% is positive. In total 1% of the respondents do not have an opinion about this question



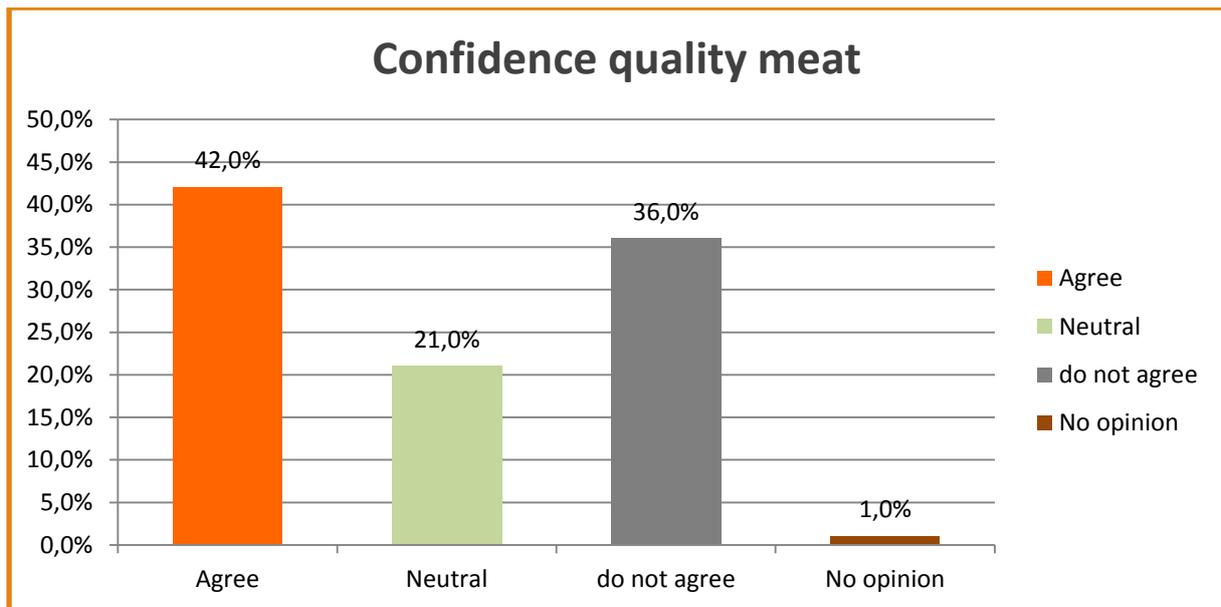


Figure 15: I have confidence in the quality of meat in the current meat production

Variable	Percentage	Value (n=4250)
<b>Agree</b>	42.0%	1785
<b>Neutral</b>	21.0%	892.5
<b>do not agree</b>	36.0%	1530
<b>No opinion</b>	1.0%	42.5

Figure 15 presents what the citizen-consumer thinks of the quality of current meat production. The figure presents that of the approximately (n=4250) respondents 42% agreed with the statement that there is confidence in the current production of meat. Of the approximately (n=4250) 36% does not agree with the statement. Of the (n=4250) respondents 21% is neutral about the statement. In total 1% of the respondents do not have an opinion about this statement.

