AGRI ANALYSE

KSL – Securities for the farmer

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Foreword

AgriAnalyse has been assigned the task of describing the quality system KSL (KSL Matmerk – The Norwegian Agricultural Quality System and Food Branding Foundation) and the HSE system (Health, Safety and Environment) pertaining to the agricultural sector in Norway, and further compare the Norwegian systems with similar systems in Sweden, Denmark, Finland and Germany.

Norwegian researchers have recently studied HSE systematics at the trade level and compared agriculture as a trade to other risk exposed trades. The KSL system is here compared to systems for self-monitoring (quality and documentation) in other trades and large enterprises. This is a new and interesting approach. Besides this, very few countries operate systems for documentation and quality that in scope, support and importance (in the case of figures for accidents, effectivity and more) can be compared to the Norwegian Agricultural Quality System (KSL), in which the HSE system is also included.

The aim of this report is to draw attention to the KSL system in the agricultural sector by documenting what the arrangement contains and show how the system can be put to use in a situation where requirements to quality in production, good working conditions and traceability in the whole value chain for food are constantly on the agenda. It is important for KSL as an organization as well as for recipients of goods, authorities and farmers to present and document that KSL endows a (greater) utility value than Norwegian agriculture is aware of: both «farmer's advantage» and «sector's advantage».

We want to thank all who have contributed with suggestions, and also for the task assigned to us.

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Summary

Hillestad, M.E & Thuen, A.E. *KSL – Securities for the farmer.* Report 6-2019, AgriAnalyse, Oslo.

The word 'farmer' derives from the Old Norwegian language and originally means 'owner of land with housing'. Today 'farmer' denotes a person who runs a business on the same level as other business enterprises in Norway. The farmer has turned entrepreneur, and KSL (Agricultural Quality System) is a managing tool for the farmer. Besides assisting with implementation of favourable routines for production, KSL aids the farmer in solving tasks related to documentation of the production process, keeping employees, administering quality control and risk analysing of the enterprise. KSL is also a system which verifies that the raw materials are produced in accordance with laws and regulations – in this respect in line with good animal and plant welfare – and in a way that secures HSE for the persons involved in the production. Last but not least, this system ensures that the farmers can change recipient of goods without swapping quality system.

Society at large constantly makes new demands towards enterprises when it comes to HSE, quality in production and social responsibility. The Norwegian government has defined the social responsibility of an enterprise as follows: *Social responsibility means the responsibility which an enterprise can be expected to undertake for people, society and environment influenced by the enterprise; that is considerations not imposed by law.*[1]

All Norwegian enterprises regardless of size and trade are obligated to have a system for self-monitoring. Norwegian agriculture is a trade with many small enterprises, an immensely broad spectrum of managerial responsibility structures and a comprehensive demand for competence. It is a fact that small enterprises, regardless of trade, face challenges concerning organizational functions as administration, self-monitoring and HSE systems. To simplify the farmer's administrative duties, the agricultural sector has established its own system for self-monitoring and quality: Agricultural Quality System (KSL).

The agricultural sector, the food industry and the authorities agree on a common «standard of trade» as an instrument for documenting a farm's production. This is the KSL, which the farmer can bring into use without any more ado. It is not necessary to develop a separate system or choose between many systems. For all food related businesses, it is important to be fully aware of the regulations, interpret them in the same way and execute the follow-ups of deviations in a similar manner. KSL gains the consumers confidence through the fact that all users who have implemented KSL, can prove that the food comes from a farm where laws and regulations have been followed.

[1] https://www.regjeringen.no/no/tema/naringsliv/internasjonalt-naringssamarbeid-og-eksport/samfunnsansvar/id603511/ . Read 21.09.2018

As a system, KSL supports the individual farmer in complying with the laws, regulations and other instructions which are set by the authorities, the industry and the commodity trade. KSL helps the farmers in fulfilling their social mission, something every business in Norway is obligated to do. The farmers' tool in this purpose are the KSL standards, which consist of checklists and guides that the farmer uses in his self-monitoring of the farm. KSL can be regarded as the quality department of the agricultural sector, and thus contributes to this sector's ability to solve system related challenges in a way totally on a par with any other large enterprise in Norway (Follo et al., 2016)

KSL is funded by the authorities (through the Agricultural Agreement) and the market participants. The system is approved by The Norwegian Food Safety Authority, The Norwegian Labour Inspection Authority, Directorate of Agriculture and the food industry through formalized agreements.

In 2014 HSE was established as a compulsory part of KSL in the way that KSL formed into a «complete» system for self-monitoring and quality assessment. This work was executed in close dialogue with Norwegian Agricultural Cooperatives.

In this report, we have examined and compared the HSE systems in Norway, Sweden, Denmark, Finland and Germany. In addition, we have looked at some quality systems (systems for self-monitoring) related to production in the same countries. Our study shows that many things are identical regarding structure and tasks in the HSE domain. All countries have public health care, all the HSE systems are subject to control by the authorities, all countries have health insurance, pension schemes, farmer substitute arrangements in case of accidents and an electronical system of documentation for HSE.

What sets Norway apart from the other countries, is that HSE is integrated in KSL. Thus, here in Norway the farmer needs to relate himself to one system only. This entails simplification of the farmer's everyday life, and the agricultural enterprises save substantial costs when they do not need to handle several different routines and systems for documentation. Simultaneously the industry and the grocer's business have an easy job backtracking food to the individual farm, enabling them to document product quality towards the consumers and safeguarding that the enterprises take their public responsibility seriously as an obligation imposed upon all Norwegian businesses by the authorities.

In the other European countries which we have selected for comparison, the HSE system and the system for quality in production are separate systems. The quality systems are also different dependent on the type of product that the farm produces and what specific food industry it delivers to. As an example, dairy farmers who want to deliver to Arla, must comply with quality specifications from «Arlagården» as well as requirements from the authorities. If the farm delivers meat in addition to milk, it must also follow requirements from for instance Danish Crown. In case that the farmer wants to swap goods recipient, it is necessary to change quality system. This makes it more difficult for the farmer to fulfil the requirements, and it also results in unnecessary bureaucracy and higher production costs.

KSL is a managerial system developed with the aim of securing quality in food production, good animal welfare and proper implementation of the HSE aspects. KSL ensures that all the

links in the food chain structure comply with the requirements which the society at large put on animal welfare, safe working environment and protection of the natural environment. This system is unique for Norway. KSL is constantly being further developed and improved in accordance with broad trends in society. Of particular importance is that KSL mirrors the actual production on the farm so that the production at any time complies with the requirements set by the society at large.

Introduction

All Norwegian enterprises are obligated to have a system for self-monitoring, regardless of size or trade. Norwegian agriculture is a trade with many small enterprises, an immensely broad spectrum of managerial responsibility structures and a comprehensive demand for competence. It is a fact that small enterprises, regardless of trade, face challenges concerning organizational functions like administration, self-monitoring and HSE systems.

Aiming at simplification of the farmer's administrative tasks, Norwegian agriculture has established its own quality system: Agricultural Quality System (KSL). This system is meant to assist the individual farmer in complying with the laws, regulations and rules set by authorities, industry and the commodity trade. The KSL standard consists of checklists and guides which the farmer uses in his self-monitoring of the farm. All this being systematized in one place makes KSL a versatile tool helping the farmer to comply with current laws and regulations. It also contributes to far less time for the farmer spent on administrative work.

Being a farmer is a challenging and risky profession. This goes for Norway as well as for other countries. Working in the agricultural sector is connected with a permanent risk of injuries, accidents and – worst case – death. A farmer must carry out a lot of different work: handle animals, do carpentry, weld, drive and repair machines, plan the daily running of the enterprise. Farmers often work alone, and during the working hours dangerous episodes are prone to occur: «I was just going to ...» Always taking health and safety into account is paramount in risk minimizing.

In Norway HSE is integrated in KSL. Here one is able to find all law imposed HSE requirements which pertain to farms in Norway. Quite a few people are of the determined opinion that the sheer existence of KSL contributes to reduction of accidents in Norwegian agriculture. We ask the question: Is KSL unique to Norway or does it exist similar systems in other European countries? Is it probable that cooperation between different actors in the trade, combined with a common system, contribute in reducing the volume of accidents in the agricultural sector?

In Chapter 1 in this report we give a general view of KSL, a short retrospective look at the system's founding and a quick review of the structure and some of the work being done internally in KSL. In Chapter 2 we describe the continuous process that HSE goes through.

In connection with this report we carried out a survey – presented in Chapter 3 – about HSE and HSE systems among the partners in the project SACURIMA[2] (see attachment 1) from Sweden, Finland, Denmark and Germany. The Norwegian Farmers Union participates in this project, which deals with health and safety in the agricultural sector. These four were chosen because they are countries with which it falls natural to compare Norway concerning

[2] SACURIMA = Safety Culture and Risk Management in Agriculture, en Cost Action (Cost = European Cooperation of Science and Technology)

HSE in agriculture. In addition, the accident statistics from the different countries is presented. This project connects ongoing research in the countries on HSE in agriculture. Norway is here represented by the Norwegian Farmers Union and the Trondheim University Hospital.

Chapter 4 examines the HSE structure and the HSE activities carried out in the agricultural sector in the selected countries. Both Norway, the EU and the individual member nations have laws and other types of regulations covering HSE, self-monitoring, food safety and animal welfare. All the countries have systems for safeguarding food consumption and food quality. These are also discussed in Chapter 4. In Chapter 5 we summarize KSL and compare quality system and HSE regulations in Norway with the other European countries.

Sheep cote, Western Norway. Photo: Astrid Een Thuen

1 KSL – Agricultural Quality System

KSL or Agricultural Quality System is the common quality system of the trade and the documentation tool for the primary production sector. The system secures quality and safety for both farmer, industry and society. All Norwegian enterprises are required to have a system for self-monitoring, and it is the individual farmer as the manager who has the responsibility for establishing and developing an approved quality system on his farm. KSL is a complete managerial tool which assists the farmer in documenting the quality level in his production and helps him complying with laws and regulations. In addition, KSL is a tool for improvement. All this entails that the farmer does not have to prepare a system of his own – he can just put KSL to work.

KSL as a system ensures that the farmer gets a general view over the requirements for production and daily operation without having to search through and keep himself updated on different regulations. KSL is also the tool for goods recipients so they can put quality requirements on the farmer (Norwegian Farmers Union, 2000).

KSL is therefore a quality system where the standard builds upon laws and regulations plus requirements set by the trade itself. The system is approved by The Norwegian Food Safety Authority, The Norwegian Labour Inspection Authority, Directorate of Agriculture and the food industry. Through KSL, each and all of the laws, regulations and quality requirements are collected in one place, making it as easy as possible for the farmer to comply with the requirements which he faces being a food producer.

In today's society, the authorities, consumers, trade organizations and non-governmental organizations make demands concerning where the food is produced, how it is produced, whether it is produced within the framework of good animal welfare, whether the production affects climate and environment, and whether the food is healthy to eat. It must be considered most expedient that the agricultural sector has a common quality of standard which the farmer, the industry and the consumers can have confidence in. In Norway, all this is integrated in one system, KSL.

Why KSL?

The Agricultural Quality System (KSL) ensures quality and safety for farmer, industry and consumer.

If KSL is complied with, the farm's production is in accordance with laws, regulations and requirements from the goods recipient.

KSL is the trade's common quality system for primary production and is approved by The Norwegian Food Safety Authority as a national trade standard.

KSL develops the farm's daily running.

KSL gives effective data flow from the country's 41 000 farmers to all relevant goods recipients.

KSL builds reputation for the Norwegian food production:

- food without contamination risk and devoid of harmful substances
- food produced in line with consumer's wishes when it comes to looks and taste
- food is produced according to good animal welfare
- food is produced in an environmentally friendly way
- food is produced in a safe working environment and in a way that takes care of the workers

KSL is important for the Enjoy Norway label!

1.1 Short historical overview

Norwegian industry has had quality systems for production since Det Norske Veritas (DNV) was established in 1864. DNV was established with the purpose of inspection and classification of ships, and for quality assurance in shipbuilding. The intention was to safeguard ship quality, market ships based on quality classes and furnish the insurance companies with a neutral quality system. In 1966, 95 percent of the Norwegian merchant fleet was quality assured by DNV. With the growth of the oil and gas sector, DNV was given a prominent role in shaping quality systems for ships and off-shore drilling rigs (snl.no).

From 1932 to 1994 the municipalities were responsible for controlling Norwegian food production and that imported food met the demands put upon it by several laws, among others the Agriculture Quality Act, the Meat Control Act, the Product Control Act and the Food Act. When Norway signed the EEA Agreement in 1992, numerous EU directives were to be implemented in Norwegian law, and the claim was submitted that all individual enterprises had to have a functioning system for self-monitoring. Many actors showed interest and wanted to introduce such systems for securing documented high quality in food production. But the problems were the large amount of actors, lack of coordination and slow progress.

As a result of this, the agricultural sector itself initiated a common KSL system. In 1994, the agricultural trade took over the work, and a secretariat and a steering committee were established (Eldby & Tufte, 2003). Both farmer's unions, the Norwegian Farmers Union and the Norwegian Farmers & Smallholders Union, and all the sales organizations participated. The same did the extension services, the Godt Norsk Foundation, Landbrukshelsen [Farmer's HSE Service] and Ministry of Agriculture (Norwegian Farmers Union, 2000).

The purpose with KSL was twofold:

- The system aimed at strengthening the farmer's economy by improving production on each individual farm through determined production control.
- The system intended to sustain and further increase the level of confidence in Norwegian food by the consumers, the market and the authorities.

Among other things KSL involves documenting that production is carried out in a professionally sound manner. Formerly, some of the goods recipients had their own quality systems, but they were connected to those areas being most important for the recipient. Examples here are the different livestock testing associations and the quality and market system operated by the Meat Cooperation (Eldby & Tufte, 2003). Since a lot of farmers had several productions and then were forced to navigate between different quality systems while at the same time some aspects fell outside the areas covered by the goods recipients, it was decided to establish *one* system for the whole trade: KSL. This entailed that the old systems practiced by the recipients were incorporated in KSL together with the requirements stemming from the authorities. In short, all was integrated in KSL.

In 1994, Farmers HSE Service was established. Its main purpose was contributing to better health and fewer accidents in the agricultural sector and in this way take care of quality, well-being and profitability. Members were offered courses, assistance in case of crises and could also receive certain services. In 1997, HSE was incorporated in KSL (Ministry of Agriculture and Food, 2010). The HSE requirements within KSL today cover all HSE requirements imposed on a farm by law.

Tractor. Photo: Astrid Een Thuen

1.2 KSL – ensuring quality and safety for farmer and consumer

KSL is not a certification system, but the agricultural trade's own quality system. This system is developed during many years, in close cooperation with the primary producers and the goods recipients. The requirements in KSL build upon laws, instructions and a few other regulations (for example insurance terms and goods recipients' obligations). Simultaneously, KSL contains requirements which the trade itself has defined as important for Norwegian food production, and the system is approved by The Norwegian Food Safety Authority, The Norwegian Labour Inspection Authority and the industry.

The standard is divided in one general part and one HSE part that apply to all. In addition, there are nine different standards for the different productions. The KSL standard consists of checklists and guides, which are to be used in the farm's internal audit. It is the farmer himself who executes the internal audit, one time per year. In this audit, the farmer, among other things, goes through his HSE system (Ministry of Agriculture and Food, 2010). Making precautionary plans with time limits for those fields where one has shortcomings, is a natural part of a well accomplished internal audit.

Figur 1.1 *Excerpt from the KSL standard, Chapter 1: Guide and checklist to* **General requirements to the farm** *(Matmerk, 2018).*

Checklist questions with guide			
Checklist questions where written documentation is obligatory is marked with green background colour. (*N/A = not applicable) **1.0 Goal for the farm's running** Goals are important for developing the farm's daily running. Set up specific goals for what you want to achieve and use the quality system to evaluate your own attainment. **1.0.1** Has it been set up goals for production; for example yield, slaughter weight/classifiaction, roughage, harvest level, quality level and use of input?	Yes	No	Y/N*
Active use of a quality system implies setting up goals for production and work on the farm. Use your own registrations for assessing the farm's daily running and development according to the goals. Examples of production goals: • yield • roughage • harvest level • quality level • use of input **1.1 Documentation overview**			
1.1.1 **Is necessary documentation attached to KSL and the farm's daily running clear and available for those in need of using it?**			

KSL is owned and administered by the Matmerk Foundation [KSL Matmerk – The Norwegian Agricultural Quality System and Food Branding Foundation]. The foundation was formally established by the Ministry of Agriculture and Food on January 1. 2007, and is a merger of the KSL secretariat and Matmerk. The ministry granted the start-up capital, 100 000 NOK. Its operation is funded through the Agricultural Agreement, and in 2018 the contribution from the state was 55 000 000 NOK, of which 25 000 000 make up the funding of KSL (Ministry of Agriculture and Food, 2018). The rest finances among other things marketing of the Nyt Norge [Enjoy Norway] label, Norwegian specialities and follow up of the tourism strategy launched by the project Matnasjonen Norge [Food Nation Norway].

The Matmerk Foundation's objective is to strengthen the competitiveness of the Norwegian food production and create preferences for Norwegian food. The funds put at disposal are aimed at marketing Norwegian agricultural raw materials and their merits. Matmerk is supposed to work actively in profiling Norwegian local food, Norwegian specialities and food where Norwegian raw materials are used.

In 2105, a cooperative agreement on exchanging data and information from several fields was made between KSL and the Directorate for Agriculture. In addition, The Norwegian Labour Inspection Authority and The Norwegian Food Safety Authority sanctioned the HSE standard in KSL as the national trade standard within their administrative domains (Prop. 133S (2015-2016)).

Work on the farm. Photo:Anne Bunger

2 HSE in Norway – a continuous effort

The job with health, safety and environment within an enterprise is the management's responsibility. This also goes for farms, even when they normally are one-man businesses without any employees, and the workplace is the family's home and property. Moreover, in Norway all business managers are obligated to take a HSE course. Certain trade associations, Norsk Landbruksrådgiving [Norwegian Agricultural Extension Service, NAES] and Næringslivets Hovedorganisasjon [The Confederation of Norwegian Enterprise] offer courses and assistance (for a charge) in establishing good HSE routines by the member businesses.

The cooperation between KSL, The Norwegian Food Safety Authority and The Norwegian Labour Inspection Authority has resulted in KSL checklists and guides being worked out by the two authorities. This ensures that KSL is updated on the authorities' administrative domains and that the understanding of the regulations is clarified on a frequent basis; an advantage for both KSL Matmerk's revisions and for the authorities' supervision. This cooperation aims at a better risk based supervision and subsequently a more effective practice by the two authorities because they then can go about with their task more effectively when they are able to focus the inspections even better.

When the farmer through his internal audit registers information in KSL on the farm's running, this information is not publicly accessible, but on request the farmer can give right of access. Such requests could come from Norwegian Agricultural Extension Service or the two forenamed authorities.

HSE was included in KSL in 1997 and was a voluntary part of it until HSE turned obligatory in 2014 (Minstry of Agriculture and Food, 2010). The HSE requirements in KSL cover all law imposed requirements which a farm is subject to. As an effect of this, if a farmer uses KSL he or she will be well versed in the current HSE regulations. Figure 2.4 shows excerpts from the KSL standard which concerns HSE.

Figure 2.1 Excerpt from the KSL standard, Chapter 2: Health, safety and environment; checklist with guide (Matmerk, 2018).

2.12.4 Does the farm possess first aid competence?	Yes	No	Y/N*
Knowledge about first aid can be decisive in case of an accident. Make sure that everyone on the farm has the necessary first aid knowledge. Safety data sheets are informative for persons without medical schooling in case of accidents involving chemical substances.			
2.12.5 Does the farm employ routines for crisis management or production variances? Crisis management can involve many different actions. It is important to have a plan for how one should act in different situations. *Some examples:* • periods after personal crises • fire • diseased livestock • defect in delivered goods where action is required for withdrawing supply and inform the recipients about the incident • power outage in long periods The Norwegian Farmers Union has through the project «Tryggere sammen» [«Safer together»] focused on local preparedness and crisis management. See the introductory film on tryggeresammen.no When you register/update your core (health) journal (ask your regular doctor if necessary), it is recommended that you at the same time enter that you have responsibility for farm animals.			
2.12.6 Does the farm employ routines for reporting injuries and disease?			
Registering injuries, accidents and diseases Employer is obligated to register all personal injuries which occur during work, or disease which are asssumed to originate from the working environment. This obligation also goes for those who do not have any employees.			
Form for recording unwanted occurrences can be found at Norsk Landbruksrådgiving HMS [Norwegian Agricultural Extension Service HSE] or The Norwegian Labour Inspection Authority.			

There exists a broad and ongoing cooperation on HSE in Norwegian agriculture. Many actors are involved: the authorities, the farmer's unions, the insurance trade, the industry and the primary producers.

The Farmer's HSE Service was established in 1994 as an ideal foundation with the purpose of administering a preventive service related to health, environment and safety for all who work in the agricultural sector. A nationwide HSE operation in cooperation with regional

company health services was subsequently established (Ministry for Agriculture and Food, 2010). Membership also implied assistance in fulfilling all the documentation demands under KSL and the requirements coming from the authorities regarding HSE in a farm context.

In 2014 HSE formed into an obligatory part of KSL. The same year Farmer's HSE Service merged with Norwegian Agricultural Extension Service, which then was assigned the task of counselling the farmers in HSE requirements. Consequently, HSE got more integrated in the general counselling offerings of the NAES (Ministry for Agriculture and Food, 2014).

NAES offers company health services, HSE guidance in a farm context, and sale of single services such as HSE plans and assistance concerning technical aids. NAES also offers HSE counselling pertaining to all productions, and assists in risk evaluation and mapping out of all aspects of the production, for example machine utilizing, building and construction projects, and aspects applying to fire safety and preparedness. Here follows a list of phenomena which can be subject to counselling:

- HSE systematics (mapping out, plans for action, risk evaluation)
- documented training
- chemical and biological substances (pesticides, spraying equipment, diesel, oils, synthetic fertilizers)
- machines and gear (tractor, coupling, maintenance)
- work environment and ergonomics (noise, dust, strain on muscles/skeleton, squeeze risk)
- personal protective equipment
- safety for employees
- employer's responsibility
- electricity and fire protection

NAES also offers assistance in crisis situations and teaches a comprehensive set of courses through the year, for example on work during hot circumstances, stress and crisis, and machine operating. Through the year NAES arranges well over 100 HSE related courses in the whole country. In addition NAES contributes with professional input in many different arenas: The Agricultural Fire Protection Committee, reports, lectures and talks, safety days events and books for the education system (NAES, 2018).

Norwegian Farmers Union as well is involved in counselling and attitude campaigning within the HSE framework, reaching out through its more than 500 local chapters. The projects include «Safer together», which offers information with the purpose of raising the level of knowledge and awareness about the risks and vulnerabilities confronting local societies and the agricultural sphere (www.tryggeresammen.no), and the internet site Godt Bondevett [Farmer's Common Sense] which centres around mental health issues in the agricultural sector.

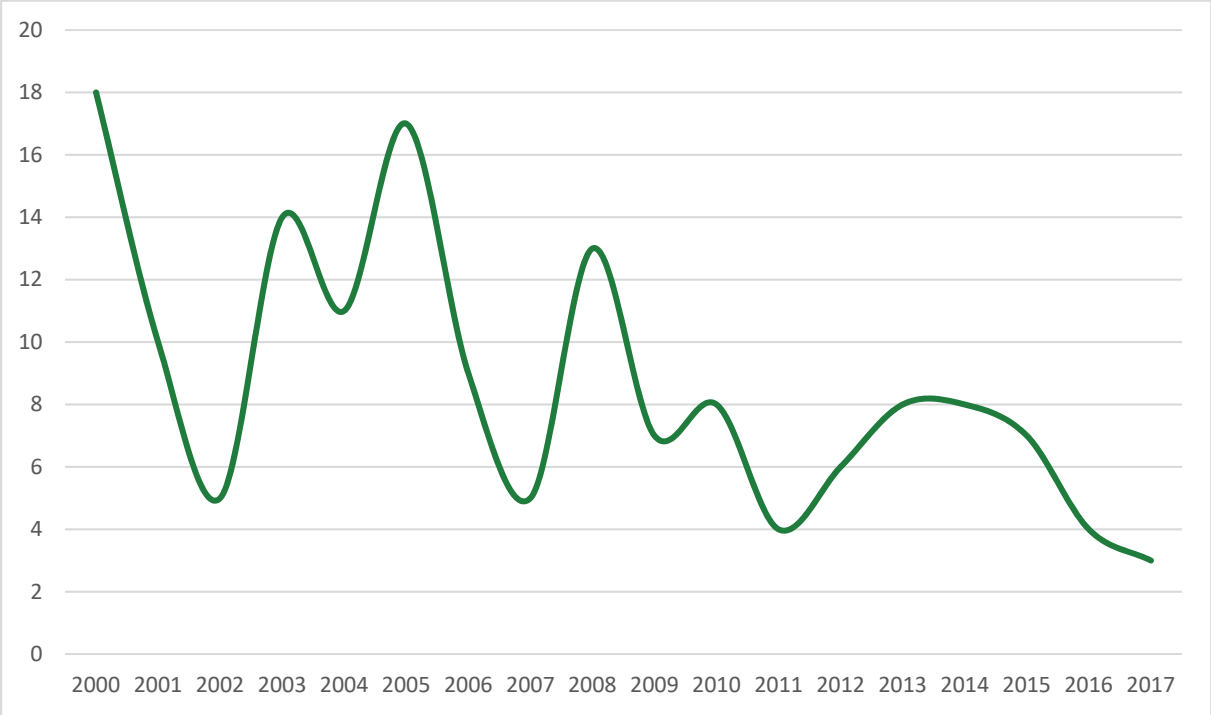
The Agricultural Fire Protection Committee is a cooperative effort between prominent actors within the agricultural sector including the farmer's unions and the Norwegian Agricultural Extension Service, the fire protection authorities, planning and building authorities, and the insurance trade. The committee aims at forestalling and reducing the volume of fires in agriculture.

As a further addition, The Norwegian Labour Inspection Authority and KSL Matmerk cooperates in informing farmers about HSE in the labour inspection authority's fields of responsibility.

2.1 Injuries and accidents – how many?

It is difficult to get a complete overview on how many accidents that can be attributed to the agricultural sector in Norway. In cases of grave workplace accidents with fatal outcome, The Norwegian Labour Inspection Authority is brought in. Figures from Statistics Norway show that the number of workplace related accidents with fatal outcome in the agricultural sector has dropped from the year 2000, when 18 persons died, to 2017, when 3 lost their lives.

Figure 2.2 Number of workplace accidents with fatal outcome, recorded by The Norwegian Labour Inspection Authority. (Statistics Norway)



The Norwegian Labour Inspection Authority records accidents happening in work situations only, but The Norwegian Farmers Union has in certain years done registrations of accidents related to the agricultural sector. There is a quite severe under-reporting of injuries and accidents going on in many trades, and perhaps especially in the agricultural sector. As employer, the farmer is obligated to report serious injuries which befall his employees, but on the other hand there is no reporting requirements on behalf of the farmer himself or other persons staying on the farm (family, friends or other unpaid personnel). This makes it difficult to get a complete record concerning the number of accidents related to agricultural activity (Follo et al., 2016).

The agricultural sector has initiated recording of accidents through KSL when internal audits are carried out. From August 5. 2014 to November 4. 2015, 597 accidents were registered through KSL. Of these 61 percent were related to the farmer himself, 15 percent to family members, and 12 percent to employees. If the farmers adopt registration through KSL, this will entail more knowledge about injuries and accidents in the agricultural sector (Follo et al., 2016).

A survey carried out by Ruralis in connection with *Agriculture and Workers' Health 2012* shows that accidents in the agricultural sector are very common. 7 percent of Norwegian farmers are each year subject to an accident that bring about injuries. Converted into total number of farmers (2015 figures), this makes up to scarcely 2 900, which is equivalent to 8 farmers a day. In addition, 17 percent answered that they had experienced close calls.

The survey shows that accidents can happen any time and anywhere, but some places and situations stand out. The most accidents and close calls occur in barns/outbuildings. The yard also is a place where the accident risk is high, with its constant traffic of persons and machines. Scarcely one fourth of the accidents which hit the farmer, strike when he handles big animals like cows and other cattle. Situations where the second most accidents happen, are related to repairs and machine maintenance (Follo et al., 2016).

2.2 Focus on HSE – it helps

Relating to the HSE field, the research project «Safety culture, occupational health and accidents in Norwegian agriculture – situational description and future challenges» (Ruralis, IRIS, St. Olavs Hospital et al.; for short «Accidents in the agricultural sector») emphasizes that common systems, programs and activities have been important in reducing the volume of accidents in risk exposed trades like the petroleum industry and building & construction.

From around 2010, the common effort of the agricultural sector on the HSE field was strengthened. Establishment of a «vision zero» in 2007, obligatory HSE course for managers (the agricultural course «Practical HSE work»), the HSE campaign in 2011–2014, and implementation of HSE as an obligatory part of KSL, lead to a pronounced HSE commitment among numerous agricultural actors. The accident statistics for agriculture shows a drop in the number of grave injuries and accidents from 2011.

A Danish macroeconomical analysis from 1998 of intervention towards accidents in agriculture found that safety visits and safety courses were well invested money. Measuring of attitudes and behaviour was done both before and after the intervention, and all direct and indirect costs related to the intervention and the accidents were calculated.

The outcome of the intervention was a reduction in the number of accidents with personal injuries at 45 percent, compared to 19 percent in the control group. In addition, there was observed an improved safety behaviour in the group which was exposed to the intervention compared to the control group. The conclusion was that a comprehensive campaign with farm visits and coursing will possibly alter attitudes and behaviour, and reduce the number of accidents in the agricultural sector (Storstad, 2010).

3 HSE – a comparison with European countries

The European Union has passed a series of directives which pertain to KSL in the member countries. These directives are normative for each member state's efforts, and the EU has systems for following up and monitoring the states' complying with the minimum requirements set by the directives. Besides this, The Directorate-General Health & Food Safety publishes information and guidance to individuals and undertakings (EU Commission, 2016). EU has set up a database (OSHWiki) with an account of all national strategies for working environment (ebd.)

EU grants financial support to the member countries so that they will set up databases assisting small and medium-sized undertakings. Until 2014, 13 member countries had made use of EU's social fund (ESF) for financing HSE measures which are outlined in the strategy document for 2014–2020 (EU, 2014).

Tractor. Photo: Astrid Een Thuen

3.1 Finds from questionnaire

In connection with this report, a questionnaire was sent out via email among the participants in COST Action SACURIMA from Sweden, Denmark and Germany (attachment 1). These countries were selected because they are countries with which it is natural for Norway to compare when it comes to HSE in agriculture. The questions try to map out the legislation which affects HSE in agriculture in the different countries, how the monitoring functions and how accidents are recorded. The questionnaire also attempts at making a survey of insurance and pension arrangements, relief worker systems and training/coursing/education within the field HSE and agriculture.

3.1.1 Agriculture

In the questionnaire that was sent out, some questions were asked which concern background figures for agriculture in the three countries and Norway. Table 3.1 gives a survey over the answers to the questions posed. In an agricultural context, Norway is the little brother compared with Sweden, Denmark and Germany. Norway has an agricultural area which is equivalent to approximately 35 percent of Sweden's and Denmark's, and 5 percent of Germany's.

Table 3.1 Comparison between agriculture in Norway, Sweden, Denmark, Finland and Germany. 2016 figures unless otherwise stated. (Questionnaire, 2018)

	Norway	Sweden	Denmark	Germany	Finland*
Number of farms	40 190**	62 937	34 731	267 800*	41 714
Number of self-employed	39 000	63 000	33 511	155 497	58 225
Number of employees on the farm	6 000	22 147	2 159	616 000***	4 190
Number of seasonal workers	25 000	22 952	24 479	285 800	32 620
Agricultural area (hectares)	901 918	2 580 000	2 634 362	16 700 000	2 272 227
Number of forestry farms (holdings)	127 544	44 744	24 058	2 000 000	37 959

Figures from 2017 except number of seasonal workers which is from 2016. ** Figures from 2017. ***Fisheries included.

3.1.2 National authority for HSE

In the EU, as in Norway, it is the employer's responsibility to ensure that the enterprise has established a HSE system. National authorities offer courses and information material to managers. Table 3.2 gives a survey over the national authority which is responsible in each country. In Norway, Sweden and Denmark it is the labour inspection authority. Common for these countries is that the public welfare programs function as insurance companies in case of accidents. Norway has in addition a statutory accident assurance mandatory for all employers. In Sweden The Social Insurance Agency handles workplace accident payments, and in Denmark this is administered by Topdanmark, a similar agency as the Swedish one. Topdanmark and SEGES, a company/research institution owned by The Danish Agriculture & Food Council, have entered into a cooperative effort in establishing counselling and assurance programs for farmers.

In Germany the assurance program Social Security for Agriculture & Forestry (abbreviated SVLFG in German) assists the farmers with information and guidance. SVLFG is a public /state owned insurance company which assists with assurance for farmers (and employees) plus provides substitutes in cases of illness/accidents. SVLFG offers accident insurance, illness and care insurance, and pension insurance. In 2016 the program had about 500 000 members under the statutory illness and care insurance for agriculture in Germany.

Table 3.2 Survey over national HSE authority in Norway, Sverige, Danmark, Finland & Tyskland (Questionnaire, 2018)

	Norge	**Sverige**	**Danmark**	**Tyskland**	**Finland**
Who is national authority for HSE in the agricultural sector?	Norwegian Labour Inspection Authority (www.arbeidstilsynet.no)	Working Environment Agency (WEA) (www.av.se)	Working Environment Agency (WEA) (www.at.dk)	Social Security for Agriculture & Forestry (SVLFG) (www.svlfg.de)	Ministry of Social Affairs and Health
To whom do the programs apply?					
- Self-employed	Yes	Yes	Yes	Yes	No
-Employees (permanent & seasonal)	Yes	Yes	Yes	Yes	Yes
Who controls that the HSE regulations are complied with?	HSE / Norwegian Labour Inspection Authority	Working Environment Agency (WEA)	Working Environment Agency (WEA)	Social Security for Agriculture & Forestry SVLFG	Ministry of Social Affairs and Health
Do the authorities control the farms?					

- Self-employed	Yes	Yes	No	Yes	No
- Employees	Yes	Yes	Yes	Yes	Yes

3.1.3 What happens when the damage is done?

When an accident has happened, numerous authorities are to be notified. In Norway these are the Norwegian Labour Inspection Authority, the Norwegian Labour and Welfare Administration, insurance companies and KSL. In Sweden the Working Environment Agency is notified through a special Internet site, and in Germany the Social Security for Agriculture and Forestry (SVLFG) (Table 3.3) is the authority which is notified first. In the Nordic region both the labour inspection authorities and the police must be notified in cases of grave accidents and deaths. In Germany the health authorities are the ones to be informed. In all the countries the HSE legislation is applicable in full for the employees, but only partly for the farmer as self-employed.

Table 3.3 What happens when the damage is done? Norway, Sweden, Denmark, Finland and Germany. (Questionnaire, 2018)

	Norway	**Sweden**	**Denmark**	**Germany**	**Finland**
Who are responsible for following-up when the damage is done?	Norwegian Labour Inspection Authority/Norwegian Labour and Welfare Administration	Working Environment Agency (WEA)	Working Environment Agency (WEA)	Social Security for Agriculture & Forestry (SVLFG)	Public health service
In case of death – who is notified?	Norwegian Labour Inspection Authority/ Police	Working Environment Agency (WEA)/Police	Working Environment Agency (WEA)/ Police	Public health service	Police/ insurance company/ PRC*
HSE regulations – do they apply to the employees?	Yes		Similar as for other occupations	Yes	Registering in Workers Compensation Center
HSE regulations – do they apply to self-employed farmers?	No – only if they want compensation	Similar as for other occupations	Similar as for other occupations	No – the legislation apply to all, but insurance does not apply to self-employed farmers in the same degree as employees	Registering in MELA for the farmer

* PRC is Population Register Center.

3.1.4 HSE arrangements in agriculture

Concerning the content of the HSE regulations, the systems in all the countries we have looked at are mostly the same (Table 3.4). All except Sweden have in addition special arrangements for farmers with regard to HSE and welfare arrangements. All the countries have arrangements for both employees and the farmer as self-employed, and all have public insurance agreements which include both accident insurance and life insurance. In Germany the SVLFG also offers pension insurance. All the countries have a kind of farmer substitute arrangement in relation to work accidents and death accidents, but only Norway operates with a specified time for how long time a substitute arrangement can go on.

Table 3.4 HSE arrangements for farmers in Norway, Sweden, Denmark, Finland and Germany. (Questionnaire 2018)

	Norway	Sweden	Denmark	Germany	Finland
Are there special arrangements for farmers with regard to HSE?	Yes	No	DLBR	SVLFG	FOHS
Pension					
- Self-employed	Yes	Yes	Yes	Yes	Yes
- Employees	Yes	Yes	Yes	Yes	Yes
Life insurance/accident insurance?					
Public	Yes	Yes	Yes	Yes	Yes
Includes self-employed	Yes	Yes	Yes	Yes	Yes
Includes employees	Yes	Yes	Yes	Yes	Yes
Private system	Yes	Yes/No	Yes	Yes	Yes
Includes self-employed	Yes	Yes	Yes	Yes	Yes
Includes employees	Yes	No	Yes	Yes	Yes
					Yes
Substitute farmer arrangement					
- Vacations	Yes	Yes	Yes	Yes	Yes
- Illness	Yes	Yes	Yes	Yes	Yes
- Vacations, number of weeks	35 days				26 days*
- Illness, number of weeks	5 weeks				

*Apply to livestock farmers with a set number of stock.

3.1.1 Agriculture – a risky occupation

Agriculture is often considered one of the most risky occupations, together with professional fishing. Between 2000 and 2014 about 120 persons lost their life in agricultural related accidents in Norway (Follo et al., 2016).

Also in other countries agriculture is a challenging sector when it comes to work environment, health and accidents. Table 3.5 shows the number of deaths connected with work accidents in agriculture in Norway, Sweden, Denmark, Finland and Germany from 2008 to 2016. The figures are derived from Eurostat and give a survey over those who grow plants, are involved in livestock production, hunt or are occupied in other agricultural branches. The numbers can fluctuate quite much from year to year. The number of deaths is fairly similar in Norway, Sweden and Denmark: between 0 and 12 per year. The number is lower in Finland, while Germany generally has a higher number of deaths per year; 65 in 2016.

Table 3.5 Figures for the number of deaths connected with work accidents in agriculture in Norway, Sweden, Denmark, Finland and Germany in the period 2008–2016. (http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do)

	Norway	Sweden	Denmark	Finland	Germany
2008	12	6	9	1	81
2009	5	6	2	3	72
2010	7	2	6	1	81
2011	3	12	6	4	79
2012	5	4	9	1	89
2013	8	0	8	4	76
2014	6[b]	6	3	6	81
2015	6	6	3	5	54
2016	4	5	10	-	65

[b] Break in time series.

4 HSE structure in the different countries

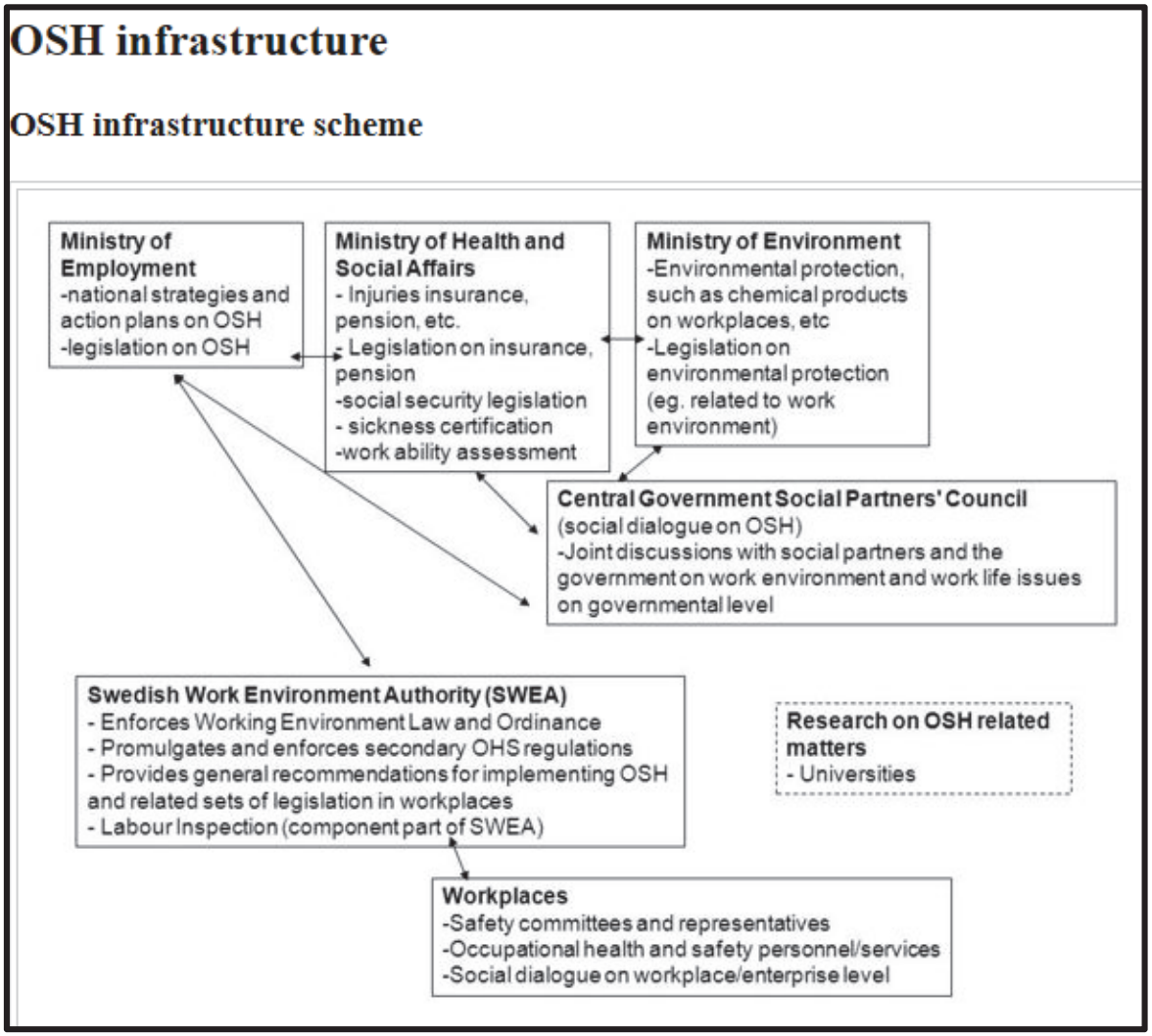
Chapter 4 looks briefly at the HSE structure in the selected countries. The HSE work is often linked to several laws, where numerous authorities exercise authority. Hence this is not a complete survey, but gives an outline over the HSE work in these countries.

Not in any of the other countries we have studied does it exist – unlike Norway – common/national systems where the farmer can get assistance with both HSE and documentation of quality in the production. There are different systems for HSE and assessing quality in production, and besides that, different quality systems dependent on what the specific farm produces and what part of the food industry it delivers to.

4.1 Sweden

As a member of the EU, Sweden is subject to EU legislation in the HSE area. In addition the country has its separate HSE legislation (the Working Environment Act of 1978). The Working Environment Act covers all types of workers, self-employed included. The act places the responsibility for the working environment on the employer, in this case the farmer. In Sweden there are many other laws and regulations which concern the working environment, among others the Working Injury Insurance Act, the Inflammable Substances Act and the Environmental Protection Act.

Figure 4.1 Outline of the HSE structure in Sweden and the social dialogue for development of the HSE legislation. (OSHWIKI, 2017b)



Internal control – HSE and quality

In Sweden there is an internal control arrangement in the agricultural sector, which correspond to self-monitoring in Norway. Self-monitoring is an effort which concerns the daily running and managing of the farm. It is encouraged that the internal control makes up an integrated part of the farm's running – something to be updated currently.

For all kinds of enterprises which are prone to affect health and environment there exists an obligation for internal control. General demands for documentation do not apply, but the internal control is meant to reflect the size of the enterprise, its influence on the environment and type of running.

In cases of inspection from the authorities one is obligated to explain how the internal control works out and which are the focused areas. It is necessary to have a scheduled plan for reducing possible risks. The inspection authorities evaluate whether the internal control is

sufficient and check that efforts are being made to minimize risks for people, health and environment (Swedish Board of Agriculture, unknown date).

For some farms there are more detailed demands on what the internal control must contain, and for these, parts of the internal control must be in writing. This goes for all enterprises in Sweden which are subject to «compulsory permits or notification». They are covered by the Regulation on Operators' Internal Control. In an agricultural context this concerns for example enterprises with more than 100 livestock units, which are subject to compulsory notification according to the Environmental Protection Act. Enterprises with over 400 livestock units must have special permits (Dalslands Miljö & Energiförbund, 2017).

Continuous revising and updating risk analyses, routines and chemical lists is here a demand; the same is documentation of how the enterprise is organized. This last point also covers sole proprietorships.

Written routines for the work most associated with health and environmental risks are compulsory. The routines shall describe the best way to execute the work with the intention of minimizing risk. If the routines do not function, they have to be revised. An example of routines is shown in Figure 4.2.

Figure 4.2 Examples on how the farm routine contents might look like.

Work step	Routine contents
Storing fertilizer	filling the well, level control, crust, density control, filling the fertilizer drum
The fertilizer spreader	thorough check of the spreader before spring fertilizing, a simpler control prior to each drive, service according to the intervals in the service booklet, outward cleaning
Storing chemical sprays	where the safety data sheets are to be found, how the packing is to be handled and stored, accessible absorbents, what to do with spills
The sprayer	when to do functional tests, thorough check of the sprayer according to the service booklet before the season, a simpler control to be done each time the sprayer is put to use
Filling and cleaning	where filling of water and chemicals takes place, how the discarded packing is handled, protective gear, how the sprayer is cleaned inward and outward, storing of the sprayer when not in use

There are several places where one can get assistance with the internal control. The Federation of Swedish Farmers in cooperation with the Swedish Board of Agriculture and others have created the *Miljöhusesyn*. Registering here makes it possible to seek help with getting insight in regulations which pertain to ones own enterprise. To be found in Miljöhusesyn are checklists for – among other things – general obligations, environment,

husbandry, work environment and accidents (Miljöhusesyn, 2018). An excerpt from a checklist is shown in Figure 4.3.

Figure 4.3 Example on checklist (Miljöhusesyn, 2018)

Checklist Livestock keeping					
		White fields apply to demands set by regulations Toned/green fields apply to recommendations			
		* The questions to which you answer NO are to be included in your plan of action			
= Cross compliance = Question concerning new regulations or regulations which are substantially altered					
		Yes	No	Not applicable	To be fixed immediately
D 1	**All livestock types** *The purpose of the regulations is to avoid building constructions which are bad for livestock health and welfare.*				
D 1.1	Are the rebuilding, newbuilding or extention building constructions tested in advance?				
D 1.2	The question concerns building constructions which demand testing in advance, buildings which undergo rebuilding or are used in such a way that the danger of fire increases: Is the stable designed with acceptable fire protection structures and conditions which accomodate rescuing of the livestock?				
D 2	**Breeding** *The purpose with the regulations is to prevent that specimens inheriting dispositions, defect genes or other unwished characteristics which may cause suffering by the offspring, are used in breeding.*				
D 2.1	Do you abstain from using specimens for breeding/reproduction if they have inherited lethal dispositions, defects or characteristics which can cause suffering by the offspring?				
D 3	**Supervision and care** *The purpose of the regulations is to ensure a good environment for the livestock.*				
D 3.1	Do the persons handling livestock have sufficient knowledge to look after the animals in a correct way taking animal welfare criterias into account?				
D 3.2	Are the livestock tended in such a way that it makes supervision easy without any difficulties?				
D 3.3	Are the livestock – including grazers – normally subject to daily supervision, and are automatical systems and devices affecting the husbandry in use?				
D 3.4	Do newborn, ill/injured, unnormally acting and heavily pregnant specimens close to delivery get extra supervision? For calfs supervision twice a day is mandatory if kept indoor.				

Miljöhusesyn can help with not missing out on important regulations pertaining to ones own enterprise and keeping oneself updated on regulations and regulation amendments. At the same time there also exists numerous quality systems, for example whether one wants to be affiliated with «Från Sverige» [«From Sweden»], which is the equivalent of Norway's Nyt Norge [Enjoy Norway] label (Svenskmärkning AB, 2018).

Additionally there are several different quality programs, for instance the Quality Program Arlagården, which describes the regulations for milk productions on the farms delivering milk to Arla. These regulations concern supervision and care, feeding and the farm's running in general (Arla, 2018). Another example is Certified Swedish Egg Quality, where care and infection programs are followed (Svenska ägg, 2018).

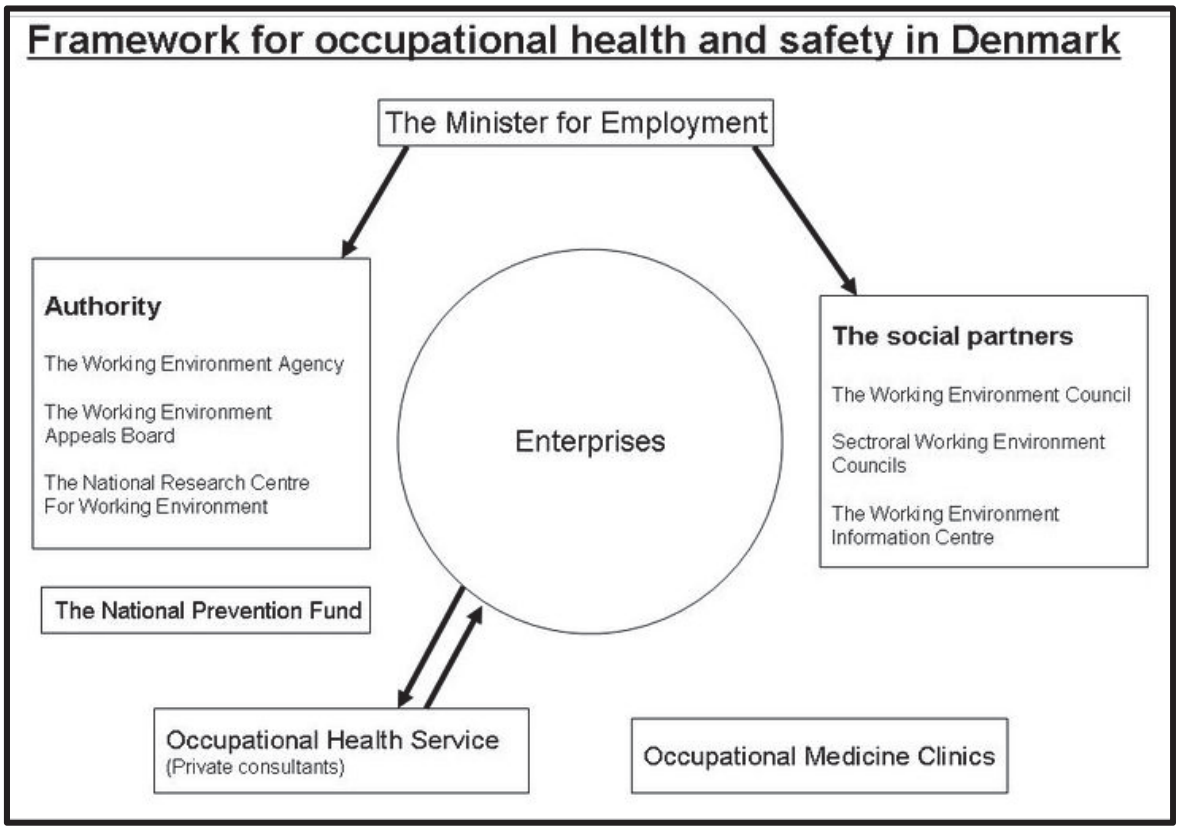
4.2 Denmark

Danmark started to work with HSE already in 1873, implementing it in various industrial sectors. An authority for inspection of factories to protect children and youth workers was established. This agency was the forerunner of today's Working Environment Agency. In 1997 the Working Environment Act was supplied with a regulation demanding written evaluations of health, safety and environment in the workplace. The Working Environment Agency was given the control over these aspects. After 2010 the Working Environment Agency's inspections have beeen based on risk evaluation of the enterprises. This may indicate that the agricultural sector – one of the country's most dangerous workplaces – will experience more frequent inspections than other trades.

Denmark is as a member of the European Union subject to EU legislation. The Working Environment Agency executes the task of controlling that the body of rules are followed. Denmark also has separate trade organizations which prepare instruction material for use by the single enterprise.

Figure 4.4 shows that the theme health, safety and environment in the workplace is subject to the Ministry of Labour and that the executing organs are the Working Environment Agency, the agency's appeals board and a national research centre for HSE.

Figure 4.4 Outline of the framework of the HSE structure in Denmark. (OSHWIKI, 2017)



Besides being the control authority the Working Environment Agency gives out start-up packages for reviewing the HSE system to those who plan launching a business, also within the agricultural sector. All enterprises with employees are obligated to prepare a workplace evaluation.

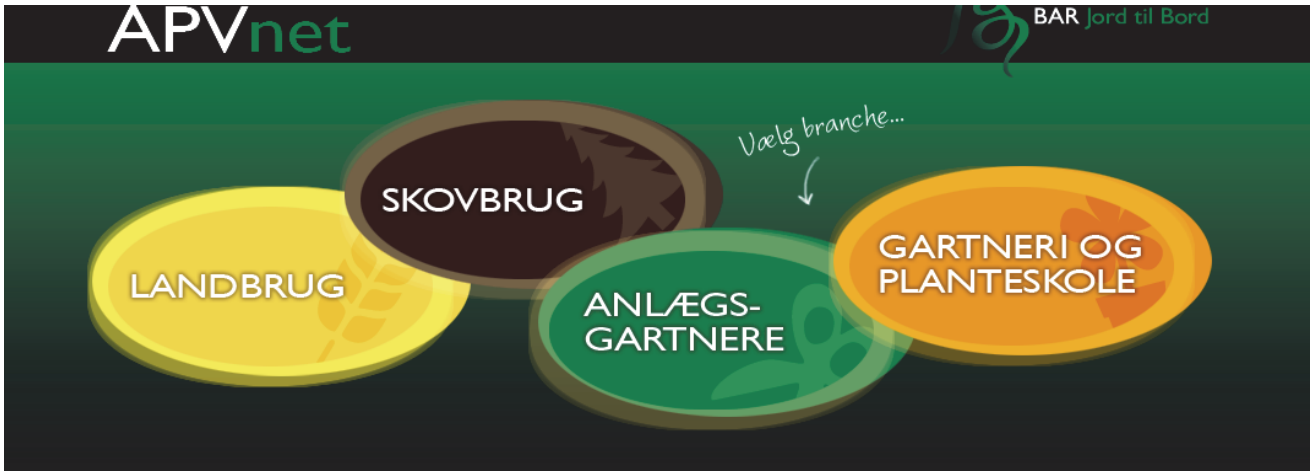
HMS in Danish agriculture is the individual farmer's (manager) responsibility. A lot of the working environment regulations are only checked when the enterprise has more than 5 employees. To facilitate the farmer's HSE engagement the Danish farmer's organization LF (Landbrug & Fødevarer) has incorporated HSE in the agricultural guidance apparatus (SEGES). SEGES develops, conveys and advises within the field agricultural working environment. They also arrange courses on working environment and safety, counsel and assist the farmer in creating safety plans, and helps in communicating with the authorities.

SEGES is a professional counselling and innovating organization that is involved in everything concerning the agricultural sector: from the big agriprofessional areas like plants, environment, husbandry and ecology to economy, taxes, law, IT, architecture, accounting, HR and education. The activities of SEGES are built upon close cooperation with universities, ministrys, businesses and interest groups both at home and abroad.

Additionally, Denmark has trade organizations which are engaged in HSE. The trade organization for agriculture is named BAR[3]. It has established an electronical assistance

[3] Les mer om BAR her: http://www.barjordtilbord.dk/Forside-4

network where the individual farmer can log in and extract relevant checklists which then are filled in and stored on the user's own site.



In case of an accident on the individual farm, the public health service is responsible for the medical treatment, and also for investigating if there might be some factor in the working enviroment which has caused the accident. Free help is offered at a hospital which has specialised in working environment injuries.

Denmark has a system for farmer substitutes where the farner can rent a substitute on the occasion of vacations, illness or days off. This arrangement is financed by the farmer's insurance. Several companies offer this type of insurance.

Quality system

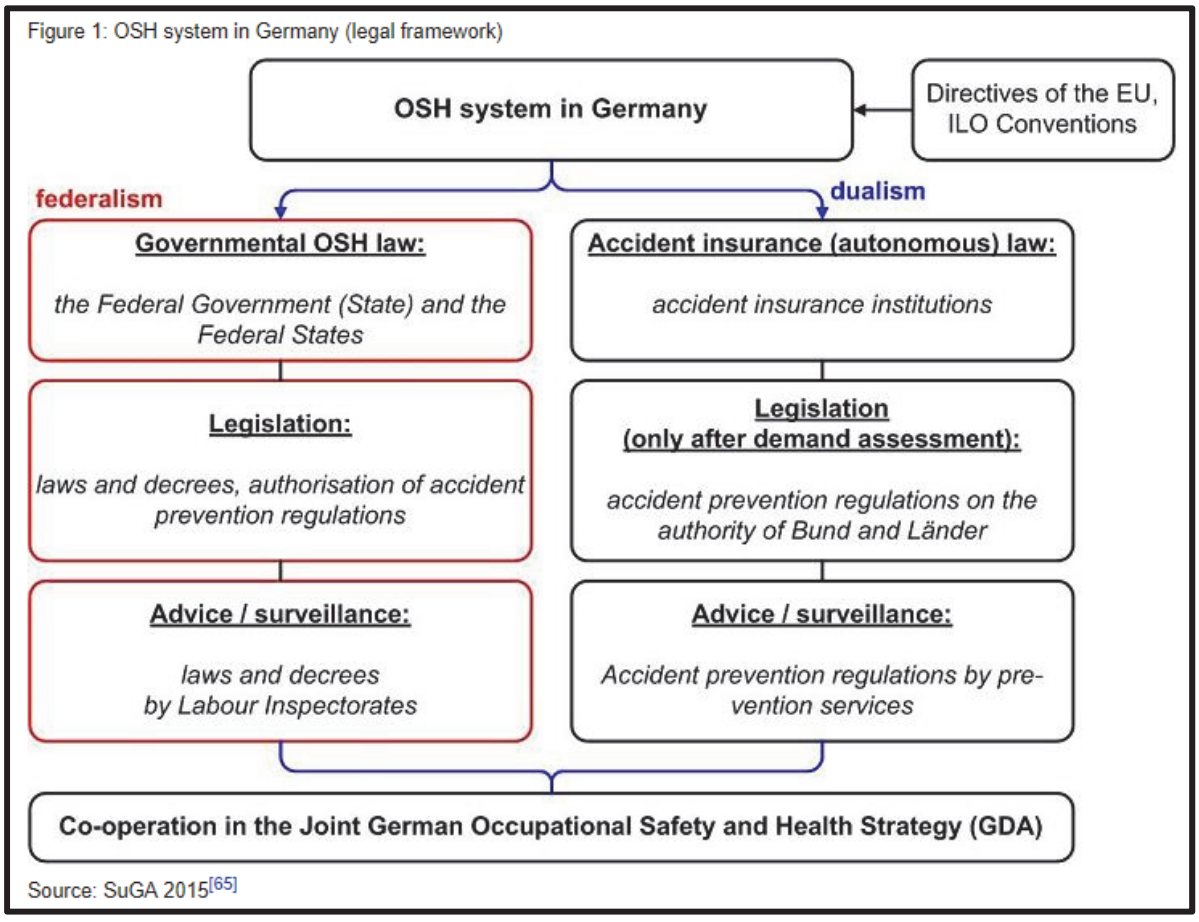
In Denmark The Danish Veterinary and Food Administration control that the body of laws on animal welfare and quality in food production is obeyed. The institution operates with its own quality and control standards. Being a member of the European Union, EU laws are followed, but there are also peculiar Danish regulations. Special regulations are only allowed if they entail better standards than EU.

Supplying public standards, Denmark also has its own trade standards and quality programs. For instance is swine production subject to a mandatory Danish standard which all enterprises which want to export swine meat, must comply with. The producers get a certificate showing that they are approved by the so called Danish Product Standard. Arla has its own quality standard, named Arlagården, which all milk suppliers to Arla must live up to. In addition there are some voluntary quality standards like Dansk Kalv, Danske Æg and Dansk Kylling.

4.3 Germany

Germany builds its HSE laws on EU's legislation[4], and the work on health, safety and environment is a tripartite cooperation between national and regional authorities, and insurance companies. In the agricultural context, this cooperation takes place between the authorities and the insurance company for agriculture (SVLFG). Figure 4.5 shows the HSE structure in Germany. Two parallel structures cooperate: the federal system and the structure for the private sector – that is the insurance company for the agricultural sector – which operates independently. SVLFG is an independent organization, but is owned, financed and administered by the German state.

Figure 4.4 Outline of the HSE structure in Germany. (OSHWIKI, 2017a)



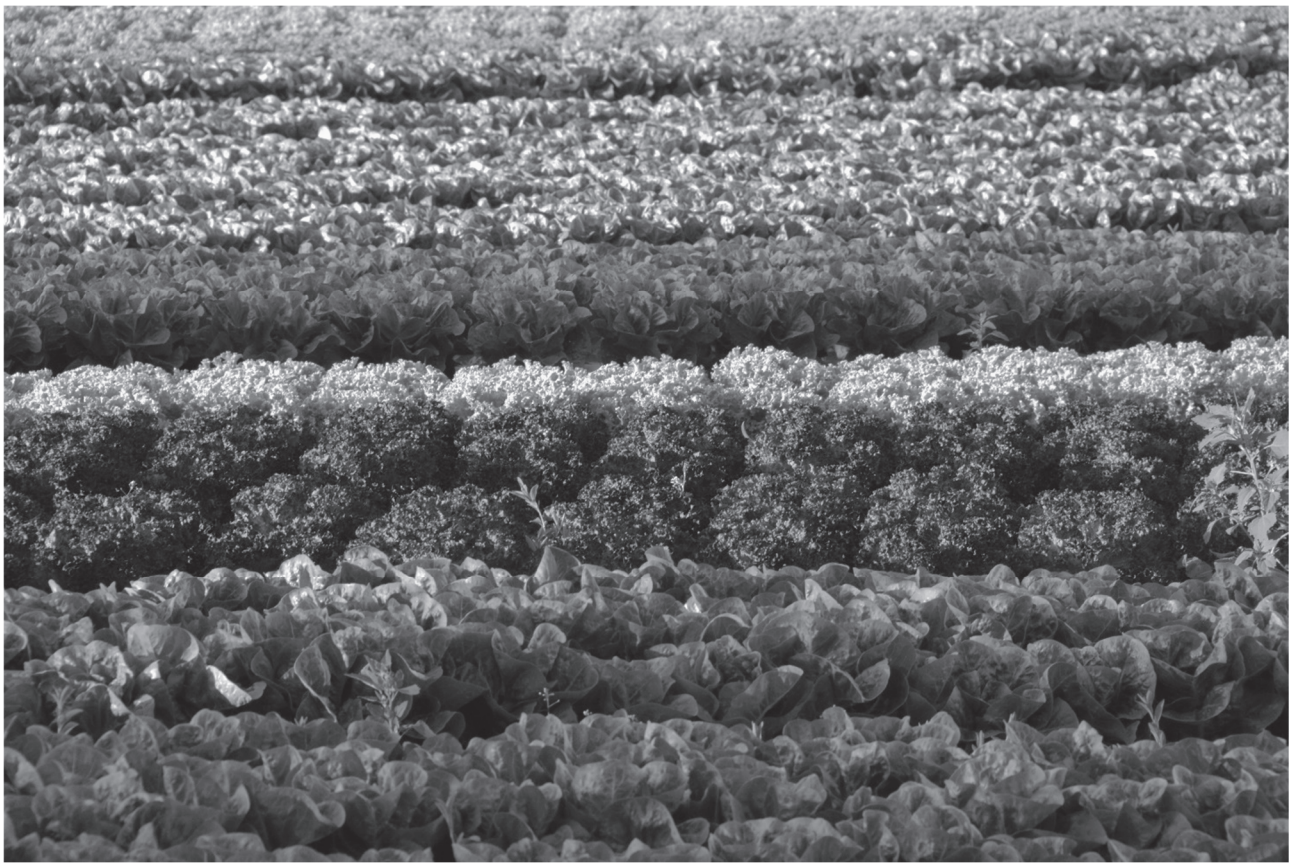
SVLFG is subordinated the Ministry for Work and Social Servicse (BMAS) and the Ministry for Nutrition and Agriculture (BMEL). The organization is subordinated the Inspectorate for the Insurance Business (BVA).

[4] https://oshwiki.eu/wiki/OSH_system_at_national_level_-_Germany

SVLFG is divided into many departments . One of them takes care of accident insurance for the farmer, spouse, employees, entrepreneurs, substitutes and temporary employees. The department for retirement pension covers pension benefits for the farmer and his family. Another department has its specialization in the long-term sick. This last type of insurance covers predominantly the agricultural entrepreneur, employed family members, family members, temporary employees, volunteers and recipients of pensions from the SVLFG's pension arrangement for farmers. In addition SVLFG pays out salary during the parental leave.

Quality system

In Germany the organization DAkkS (Deutsche Akkreditierungsstelle) performs quality approval of goods and services, also in the agricultural sector. DAkkS has from 2012 carried out quality approval of German dairies (Standard zur Milcherzeugung, QM-Milch). DAkkS certifies according to ISO and IEC standards. DAkkS is for instance responsible for approval of goods as ecological in conformity with ISO/IEC 17065 (EU standard for ecological agriculture).

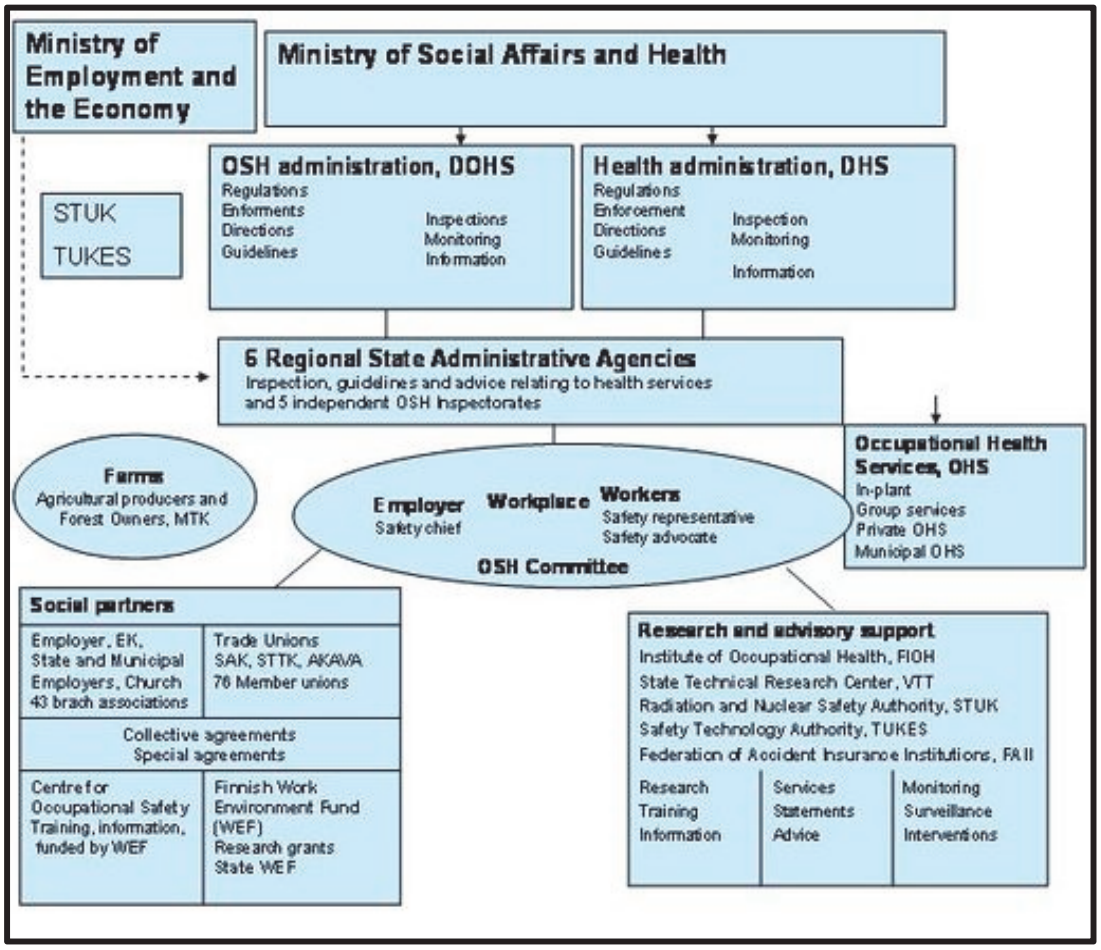


Lettuce. Photo: Anne Bunger

4.4 Finland

Figure 4.6 shows an outline of the HSE structure in Finland. HSE is regulated in the constitution. There also exist laws specifically aimed at HSE. Finland also complies with EU legislation.

Figure 4.5 Outline of the HSE structure in Finland.



Finland is organized in a quite similar way as Germany. All who are employed in the agricultural sector, are assured through a public enterprise, Mela or LPA. The law on pension for persons who run agricultural enterprises, is from 2006. It covers a broad spectrum of people in the trade and includes everything from substitutes in holiday periods to accident insurance, life insurance and pensions. It is mandatory for most to be a member of this arrangement, but some participate voluntary. The state's part of the financing is 75 percent. The rest is payed by insurance premiums, and other insurance and pension institutions (Storstad et al., 2010).

Mela also organizes the occupational health service for the agricultural enterprises (this service is tightly connected to the municipal health service). They who participate, get their insurance premium reduced with 20 percent. A condition for reduced premium is

however that the agricultural enterprise in question has scheduled a mapping out of the working conditions with the occupational health service, which gives advice on improvement. The discount is valid for four years after the last farm inspection.

Calf. Photo: Astrid Een Thuen

5 HSE – securities for farmer and consumer

Safe food is most important for Norwegian consumers. This is shown in a survey published in an article in *European Review of Agricultural Economics*. The survey centred around which qualities in food that Norwegians and Americans think are the most important when they shop groceries. When Norwegians are asked what they find most important about the food they buy, the majority of them answer: It has to be safe to eat.

All Norwegian enterprises, regardless of size and trade, are obligated to have a self-monitoring system. Norwegian agriculture is a trade with many small enterprises, a very diverse structure of managerial responsibility and comprehensive demands for competence. It is a fact that small enterprises regardless of trade face challenges when it comes to organizational tasks like administration, self-monitoring and HSE. The society in general continually make demands concerning health, safety and environment, and also quality in production and the social responsibility of the enterprise. The Norwegian government has defined the social responsibility of an enterprise as follows: *Social responsibility is the kind of responsibility that enterprises are expected to take on for people, society and environment which are affected by the enterprise, that is considerations which are not required by law.*[5] KSL (Agricultural Quality System) is a system which documents the quality of food produced in Norway.

In this report we have outlined the health, environment and safety systems pertaining to the agricultural sector in Norway, Sweden, Danmark, Finland and Germany. Many things are similar regarding HSE related conditions, for instance the types of occurrences covered by accident insurance, arrangements for agricultural substitute workers, and the public health system, which is the bottom plank in all the countries. What separates Norway from the other countries, is that HSE is included in the Agricultural Quality System – KSL. This is a common system where the farmer can document the production quality, included HSE. In the other European countries such a common system does not exist. Instead these countries operate separate systems for HSE and production quality, plus different quality systems dependent on what the farm produces and which specific food industry one delivers to.

The report «Not a farmer to lose» is the result of the research project «Safety culture, work health and accidents in Norwegian agriculture – situational description and future challenges» (Follo et al., 2016). The report concludes that small enterprises experience fewer challenges regarding organizational and administrative tasks when there exists cooperation on organizational programs, systems and activities. When this is the case, they solve problems and challenges in the same way as large enterprises do.

[5] https://www.regjeringen.no/no/tema/naringsliv/internasjonalt-naringssamarbeid-og-eksport/samfunnsansvar/id603511/ . Read 09.21.2018.

Heifers grazing. Photo: Astrid Een Thuen

Agricultural Quality System, KSL, is a very important joint venture for the agricultural primary production. KSL is a quality and documentary system where the standard builds upon laws and regulations plus other demands from the trade itself. KSL is a formalized cooperation between the trade and the authorities, and is financed by the authorities and the market actors. The system is approved by the Norwegian Food Safety Authority, the Norwegian Labour Inspection Authority and the industry. The foundation for KSL is the regulation for self-monitoring – it is the individual farmer who is responsible for establishing and further developing a system for quality and documentation on his farm. In addition this system is a tool which is used by goods recipients in order to safeguard the quality and set standards for the farmer (Norwegian Farmers Union, 2000).

The research project emphasizes that KSL can be regarded as the agricultural sector's HR or quality department, and thus contributes to solving system related challenges in the same way as in large enterprises (Follo, 2016). KSL is also seen as a most suitable arrangement while the cooperation with goods recipients and the authorities (the Food Safety Authority, the Directorate for Agriculture, the Labour Inspection Authority) strengthens the robustness and value of the system. KSL makes it unnecessary for the individual farmer to operate his own self-monitoring system, and so contributes to administrative effectivity on the farm level. Through KSL all elements are united in one place to make the farmer's work as simple as possible – «farmer's advantage».

In 1997 HSE was integrated in KSL (Ministry of Agriculture and Food, 2010), but not made mandatory until 2014. The HSE demands in KSL are meant to cover all statutory HSE obligations which a farm must comply with. In the HSE field the research project accentuates quite specifically that a common system, programs and activities have been important in

reducing the scale of accidents in risk exposed trades as the petroleum industry & building and construction.

In Norway a whole string of undertakings take place on a top level (Follo, 2016): courses and programs connected to HSE efforts, joint activities and other common measures. This affects the individual farmer. From around 2010 the agricultural sector's common effort in the HSE field was strengthened through, among other things, the HSE campaign (2011–2014) and the fact that HSE in 2014 was established as a mandatory part of KSL. Statistics show a reduction in the number of grave injuries and accidents since 2011. This could indicate that HSE is «fresh produce» and that attention to safety is preventive in itself.

Agricultural primary production is a very risk exposed trade also internationally. Historically the challenges related to accidents and health issues have been quite similar in different countries. All countries have to a greater or lesser degree systems for self-monitoring/internal control and quality, but as far as we know KSL is unique in its scope and support in the way goods recipients and authorities cooperate, and HSE being a mandatory part of KSL. Furthermore the market pays for quality, HSE included.

This report reinforces the conclusions in the research project «Accidents in the agricultural sector». Although accidents and injuries in the agricultural sector occur on a farm, it is the responsibility of the farmer to create a safe workplace and prevent injuries. This is a demanding task for the manager of a small enterprise. By cooperation and establishing a common quality system – KSL – the actors in the Norwegian agricultural sector made «farmer's advantage»: The farmer does not need to develop his own system nor choose between systems. He «only» needs to start using KSL, knowing that all current regulations and demands are to be found here.

The cooperation between agricultural actors in the HSE field has moreover drawn attention to safe practice, through numerous arenas. The agricultural actors in Norway are determined to further strengthen this cooperative effort. The number of work related deaths in Norwegian agriculture displays a declining trend. Simultaneously the trade's actors have emphasized health and safety, on both the farm level and when it comes to cooperative efforts among the actors. We have not found this tendency in the other countries we have studied, nor the same preventive undertakings.

This indicates that the agricultural sector in Norway is on the right track, doing something useful and important for both the farmer, the trade and for the society at large.

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Vedlegg

Vedlegg 1: Spørreundersøkelse

Country:

Some statistical aspects (please note the year behind the statistical number, as recent as possible)
Number of farms:
Number of self-employed farmers (unit):
Number of farm employees (unit):
Number of farm workers (unit):
Area used for agriculture and horticulture:
Number of forestry holdings:
Area of forest land:

In the European member countries several regulations regarding health and safety aspects apply to agriculture. Governmental responsibility related to this lies with the Labour Inspectorate, Health Service or an equivalent body. Please describe the system, problems and exemptions in your country by answering the following questions:

1. **Who is your national authority for occupational health and safety in agriculture?**

2. **To whom do the health and safety regulations apply?**

Do you have comments? Please give them here:

The existing health and safety regulations need to be observed/ controlled. We would like to know, who is taking care of this in your country.

3. **By what kind of inspections or other means are health and safety regulations enforced?**

   Please describe briefly here:

4. **Do such inspections cover farms?**

   Please enter comments here (if any):

5. **Please describe, what happens, if someone on a farm has an accident and is seeking medical care. Is he or she treated by the public health system (as other accidents) or in a special manner?**

   In case of a fatal accident, who is informed?

   Are there regulations, applying to farmers and employees in the same way or are there differences?

6. **If specific agricultural occupational health service is provided, how is it organized in your country? Please describe briefly here:**

7. **Are national pension systems enabling retirement by normal retirement age (65 – 67)?**

8. **In case of an accident, a farmer or employee might need compensation. Is there an occupational accident insurance system (workers' compensation) provided?**
   A public system
   Includes self-employed farmers
   Includes farm employees
   A private system
   Includes self-employed farmers
   Includes farm employees
   Please enter comments here (if any):

9. **Is there a farm relief worker system available for farmers to conduct necessary work?**
   During annual vacation …
   During disability from injury or illness …

   For how long can a farmer be entitled to a farm relief worker system?
   For vacations…. days per year
   During disabilities from injury or illness…. weeks

   Please enter comments here (if any):

10. **Is there a coordinated national system with specific learning objectives and educational materials to teach health and safety as part of agricultural education?**
    Please describe the system briefly (problems, exemptions, note its website address, etc.):

11. **Please list H&S initiatives you know in your country! Who did organize it? Please put down a web-link relating to it, if there is one.**

12. **Did you as a MC member provide the information given on your own?**

    If no, from whom did you get help?

    How much time did you need approximately to answer all questions?

Utgivelser 2019

Rapport 1–2019: Eksportsatsing i norsk jordbruk

Rapport 2–2019: Kornhøsting i våtere klima

Rapport 3–2019: Stort volum, usikker inntjening. Gjeld og jordbruk i Danmark.

Rapport 4-2019: Ammeku – rask vekst , ujevn fordeling

Rapport 5—2019: Beitemarka – et ukjent karbonlager

Utgivelser 2018

Rapport 1–2018: Sveitsisk jordbrukspolitikk - matforsyning og fellesgoder likestilt

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Rapport 4–2018: EUs landbrukspolitikk – ordninger for grønt-næringen

Rapport 5–2018: Småfenæringen - største sektoren i norsk jordbruk

Rapport 6–2018: Frihandelsavtaler og norsk landbruk Stadig flere avtaler–MERCOSUR neste?

Rapport 7–2018: Utviklingen i jordbruket i Finnmark

Notat 1–2018: Villsvin – problem for mange, nytte for få

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