



**DEPARTMENT OF BIOLOGICAL AND
ENVIRONMENTAL SCIENCES**

IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT GOALS IN SWEDEN

A survey of companies parts in the process

Sarah Loukkola

Degree project for Master of Science (120 hec) with a major in Environmental Science
2017, 30 HEC
Second Cycle

Abstract

The Agenda 2030 for sustainable development was adopted by the UN in 2015 and consists of 17 Sustainable Development Goals (SDGs). The agenda should be implemented at a national level in each member state but it is not legally binding. A delegation is responsible for the work with the overall action plan for the implementation of Agenda 2030 in Sweden. Sweden already has goals for desired environmental status, called environmental quality objectives that should be fulfilled by the year 2020. The purpose of this study was to gain a better understanding of businesses part in the implementation of Agenda 2030 in Sweden, how it relates to the environmental quality objectives and which of the SDGs that Swedish companies address. A survey was sent out to 93 companies and the response rate was 21.5 %. The study showed that 90 % of the replying companies had implemented the SDGs in their sustainability work, into already existing environmental goals and/or in their sustainability report. The following SDGs were included by most companies: *Decent work and economic growth*, *Gender equality*, *Climate action* and *Responsible consumption and production*. 45 % of the companies had integrated their work with the SDGs with the environmental quality objectives. Most of them had connected the overall national goal for the environmental policy to the SDGs *Responsible consumption and production* and *Sustainable cities and communities*. The results in this study have demonstrated that companies work with implementing the SDGs could be improved by choosing certain SDGs with consideration to the company's impacts on the environment and synergies between the chosen goals, and by integrate them into the systematic environmental work.

Keywords: Sustainable development, Agenda 2030, Sustainable Development Goals, environmental quality objectives

Sammanfattning

Agenda 2030 för hållbar utveckling antogs av FN år 2015 och består av 17 globala hållbarhetsmål. Agendan ska implementeras på nationell nivå i respektive medlemsland men är inte juridiskt bindande. En delegation är ansvarig för arbetet med att ta fram en övergripande handlingsplan för implementeringen av Agenda 2030 i Sverige. På nationell nivå har Sverige sedan tidigare så kallade miljö kvalitetsmål för det tillstånd i miljön som miljöarbetet ska leda till, målen ska vara uppfyllda år 2020. Syftet med denna studie var att få bättre förståelse för näringslivets roll i implementeringen av Agenda 2030 i Sverige, hur det relaterar till miljö kvalitetsmålen samt vilka av de globala hållbarhetsmålen som företagen arbetar aktivt med. En enkät skickades ut till 93 företag och svarsfrekvensen var 21,5 %. Studien visade att 90 % av de svarande företagen har implementerat de globala hållbarhetsmålen i sitt hållbarhetsarbete, i redan existerande miljömål och/eller i sin hållbarhetsredovisning. Följande globala hållbarhetsmål inkluderades av flest företag: *Anständiga arbetsvillkor och ekonomisk tillväxt*, *Jämställdhet*, *Bekämpa klimatförändringen* och *Hållbar konsumtion och produktion*. 45 % av företagen har integrerat de globala hållbarhetsmålen med de nationella miljö kvalitetsmålen i sitt hållbarhetsarbete. De flesta hade kopplat det övergripande miljö kvalitetsmålet till de globala hållbarhetsmålen: *Hållbar konsumtion och produktion* samt *Hållbara städer och samhällen*. Resultatet från den här studien har visat att företagens arbete med att implementera de globala hållbarhetsmålen kan förbättras genom att välja ut specifika globala mål med avseende på företagets miljöpåverkan och synergieffekter mellan målen samt genom att integrera de globala målen i det systematiska miljöarbetet.

Nyckelord: Hållbar utveckling, Agenda 2030, globala hållbarhetsmål, miljö kvalitetsmål

Table of Contents

Abstract	2
Sammanfattning.....	3
1. Introduction.....	5
1.1 Background.....	5
1.1.1 Sustainable Development Goals (SDGs).....	5
1.1.2 Environmental quality objectives.....	6
1.1.3 Planetary boundaries & global environmental challenges	7
1.1.4 Environmental challenges on a national and regional level.....	7
1.2 Aim & objectives.....	8
1.3 Delimitations	8
2. Methodology	9
2.1 Literature study & current situation analysis.....	9
2.2 Data collection.....	9
2.3 Data analysis.....	9
2.4 Limitations	10
3. Results	10
3.1 Response rate & included sectors	10
3.2 Included sectors and their impact on the environment	11
3.3 Implementation of the Sustainable Development Goals.....	13
3.3.1 Examples of ways to implement the SDGs.....	18
3.4 The Sustainable Development Goals and the environmental quality objectives	19
3.5 Measures & evaluation of the Sustainable Development Goals.....	22
4. Discussion.....	23
4.1 Businesses role in the implementation of Agenda 2030.....	23
4.2 Efforts on certain SDGs and their relevance to national environmental challenges	23
4.3 Integrating the SDGs with the environmental quality objectives	24
4.4 Method.....	25
4.5 Recommendations.....	25
5. Conclusions.....	26
6. Acknowledgements	26
7. References.....	27
Appendix A. Survey (English)	30
Appendix B. Survey (Swedish)	32
Appendix C. Answers from the survey	34

1. Introduction

1.1 Background

In September 2015 the Agenda 2030 for sustainable development was adopted by the UN. Agenda 2030 consists of 17 Sustainable Development Goals (SDGs) and is an action plan for sustainable development with focus on the people, the planet, prosperity, peace and partnership. The goals should be implemented at a national level by each member state but are not legally binding (UN General Assembly, 2015). The sustainable development challenges demands a multi-stakeholder approach, no single institution or group of actors can make a crucial difference. National governments need to work together with businesses, academia and civil society, among others. When it comes to solutions on many of the sustainability challenges businesses is one important provider of solutions such as new technologies and business models (Sustainable Development Solutions Network, 2013).

Companies among other actors play an important role in fulfilling the Swedish environmental quality objectives and the SDGs. Today there is no clear picture of the role of businesses in the implementation of the SDGs at a national level in Sweden. A pilot study focusing on the subject was carried out as a part of the Advanced Methods course at University of Gothenburg in the end of 2016. That study focused specifically on the connections between the generational goal and the SDGs. The results showed that the areas prioritized by authorities and companies were those focusing on: *Responsible production and consumption, Sustainable cities and communities, Clean water and sanitation, Good health and well-being*. The goals that companies and authorities did not connect to the generational goal were: *No poverty, Quality education, Gender equality, Reduced inequalities, Climate action and Strong institutions and peace*.

Previous studies on the progress towards the SDGs published by the organization GlobeScan¹ showed that efforts to reach the goals have been inadequate so far. The areas, or SDGs, that are lagging the most according to the respondents (consisting of 500 sustainability professionals) were: *No poverty, Life on land, Life below water and Reduced inequalities*. The results also showed that the ones that are perceived to have contributed the most to the progress of the SDGs are non-governmental organizations, while the private sector and national governments are seen as less contributive (GlobeScan, 2017).

1.1.1 Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) are 17 goals² for sustainable development that should be reached by the year of 2030. Every goal has targets (169 in total) connected to it, which are time-set and in more detail describe specific actions that needs to be taken in order to reach the goals (UN General Assembly, 2015). What was not fulfilled in the Millennium Development Goals, the earlier version of UN goals for sustainable development, will be further developed in the new agenda. The

¹ GlobeScan is a strategy consultancy that is evidence-led and focus on stakeholder engagement and intelligence.

² *No poverty, Zero hunger, Good health and well-being, Quality education, Gender equality, Clean water and sanitation, Affordable and clean energy, Decent work and economic growth, Industry, innovation and infrastructure, Reduced inequalities, Sustainable cities and communities, Responsible consumption and production, Climate action, Life below water, Life on land, Peace, justice and strong institutions, Partnerships for the goals.*

foundation of the SDGs is two years of intense conversations with the civil society and public consultation with interested parties around the world. The most vulnerable and poor have been given special attention in the dialogue (Regeringskansliet, 2016).

The goals should be seen as a whole and it is implicit that the goals depend on each other. For the agenda to be able to deliver on its full potential, trade-offs needs to be minimized and mutually reinforcing actions needs to be taken. The national circumstances and the level of development must be taken into account when countries interprets the SDGs (Nilsson, Griggs & Visbeck, 2016). In order to follow the process of the work with Agenda 2030 and the SDGs there are yearly central monitoring forums, High Level Political Forum (HLPF) where the member countries can report their progress on the work with the goals (Regeringskansliet, 2017).

Costanza et al. (2014) states that there is a need for an overarching goal for the SDGs, a larger goal or an “ultimate end”, within which the environment, society and economy must be satisfied jointly. They refer to this overarching goal in their article as ‘sustainable well-being’, defined as “a prosperous, high quality of life that is equitably shared and sustainable”. This could also be explained as an integrated provision of the following: sustainable scale (staying within planetary boundaries), fair distribution (protecting capabilities for flourishing) and efficient allocation (building a living economy) (Costanza et al, 2014).

1.1.2 Environmental quality objectives

At a national level, the environmental quality objectives were introduced in Sweden 1999 in order to define the desired status of the environment which the environmental work should lead to (Naturvårdsverket, 2014). The generational goal, which sets the overall goal for the Swedish environmental policy, was introduced 1997 when it was mentioned in the governmental policy (Abresparr et al., 2014). It states that “The overall goal for the environmental policy is that within the next generation be able to hand over a society where the big environmental problems are solved, without causing increased environmental and health problems outside Swedish borders.” (Swedish Environmental Protection Agency, 2017). The 16 national environmental quality objectives³ should clarify the environmental dimension of sustainability, meaning the ecological aspects. The Swedish Environmental Protection Agency (SEPA) is responsible for the follow-up and for reporting the outcome of the work with the objectives. Each county administrative board should implement the objectives on a regional level which also include adding additional regional objectives. There are also certain milestone targets that can be seen as steps on the road to achieve the generational goal (Länsstyrelsen Västra Götalands län, 2015).

In order to achieve the environmental quality objectives it is crucial that corporate environmental action is taken. By showing that systematic environmental action is profitable for both businesses and society the business sector can contribute to the work with environmental quality objectives (Ministry of the Environment, 2013). The annual monitoring report for 2017, which was recently published by Swedish EPA, showed that only a few of the objectives will be achieved until the year

³ *Reduced climate impact, Clean air, Natural acidification only, A non-toxic environment, A protective ozone layer, Zero eutrophication, Flourishing lakes and streams, Good-quality groundwater, A balanced marine environment, flourishing coastal areas and archipelagos, Thriving wetlands, Sustainable forests, A varied agricultural landscape, A magnificent mountain landscape, A good built environment, A rich diversity of plant and animal life.*

2020. The report focus on government initiatives, although the possibility to reach the objectives also depends on efforts from municipalities and businesses.

The objective that will be achieved is *A Protective Ozone Layer* and the objective *A Safe Radiation Environment* is close to being reached (Swedish Environmental Protection Agency, 2017). When looking at the 24 milestone targets some of them are moving in the right direction, although it is difficult to evaluate or meet others. Four of the seven milestones that should have been realized in 2015 have been met or close on target (Swedish Environmental Protection Agency, 2016).

Development of the environmental work goes in the right direction when it comes to acidification and air quality. Despite national and international efforts, preserving biological diversity and recovery for ecosystems shows a negative development trend (Swedish Environmental Protection Agency, 2017).

1.1.3 Planetary boundaries & global environmental challenges

The continued development of human societies and the maintenance of the Earth, or more specific the Earth system, need to be integrated. The planetary boundaries framework provide a science-based analysis of the risk that human perturbations will make the Earth system unstable at the planetary scale. Steffen et al. (2015) presents “a safe operating space” in their article. This space, below which the risk of destabilization of the earth system is likely to remain low, sets levels on how big the anthropogenic perturbations can be. The concept *resilience*, meaning a systems capacity to absorb disturbances without losing its function, is central to the planetary boundaries framework (Steffen et al., 2015). Because of their fundamental importance for the Earth system, *climate change* and *biosphere integrity (functional diversity & genetic diversity)* are recognized as core planetary boundaries. The other identified planetary boundaries are: *land-system change, freshwater use, biochemical flows (phosphorus & nitrogen), ocean acidification, atmospheric aerosol loading, stratospheric ozone depletion* and *novel entities*.

Climate change is one of this century’s biggest environmental challenges. Anthropogenic emissions of greenhouse gases are a major cause of the observed changes in the climate system such as warming of the Earth’s surface and the oceans, as well as reductions of snow and ice resulting in sea level rise and decreased albedo-effect (reflection of incoming radiation) (Forster et al., 2007). The main drivers of increased levels of CO₂ emissions are economic growth and population growth. Divided by economic sector the emissions of greenhouse gases in 2010 were as follows: electricity and heat production (25 %), agriculture, forestry and other land use (24 %), industry (21 %), transport (14 %), other energy (9.6 %) and buildings (6.4 %) (IPCC, 2014). In order to limit global warming to below 2 °C (above pre-industrial levels), the emissions of CO₂ must be near zero by the year 2050. Rockström et al. (2017) propose a “carbon law” which means that carbon dioxide emissions need to be halved every decade. The global emissions of carbon dioxide are currently about 40 Gt/year (Rockström et al., 2017).

1.1.4 Environmental challenges on a national and regional level

In order to achieve the Swedish environmental quality objectives some measures are pointed out as more important in the annual monitoring report for 2017. The first measure regards green infrastructure, in order to preserve biological diversity it is crucial that plants and animals can spread naturally, therefore it is important to connect natural areas on land and waters. During 2016 efforts have been made when it comes to tools for creating green infrastructure and also by integrating

ecosystem services in master plans and environmental impact assessments (Swedish Environmental Protection Agency, 2017).

Sustainable consumption is also an important measure in order to reach the environmental quality objectives. During 2016 efforts have been made regarding reduced taxes on some reparation services. A strategy for sustainable consumption was also presented by the Swedish government (Swedish Environmental Protection Agency, 2017). The strategy includes efforts to immerse the cooperation and increase the knowledge on sustainable consumption, in order to create possibilities for both consumers and producers to act sustainable (Finansdepartementet, 2016).

During 2017 a political climate framework, including a climate law and new climate goals, was proposed by the Swedish government. The overall goal is that Sweden should not have any net emissions of greenhouse gases by latest the year 2045 and after that achieve negative emissions (Regeringskansliet, 2017). The framework will be important in the fulfilling of the environmental quality objective *Reduced climate impact* (Swedish Environmental Protection Agency, 2017). The key legislation for Europe's climate action, also known as the Effort Sharing Regulation, is currently negotiated by EU Member States. Countries position in the negotiating process were analyzed and ranked by Carbon Market Watch. Sweden is at the top of the list, meaning closest of all EU Member States to reach the Paris Agreement. Sweden tops the list because of the high goals on domestic emission reductions and for efforts made on closing certain loopholes in the law (Carbon Market Watch, 2017).

1.2 Aim & objectives

The purpose of this study is to gain a better understanding of businesses part in the implementation of the Sustainable Development Goals in Sweden and how that relates to the national environmental quality objectives.

The study aims to answer the following questions:

- *What are the roles of companies in the implementation of the Sustainable Development Goals in Sweden? Are there any specific obstacles in the implementation of the SDGs at a national level in companies?*
- *Which of the Sustainable Development Goals do companies address? How does that relate to the national environmental challenges and the environmental impact that the represented sectors cause?*
- *In what ways do companies integrate the SDGs and the environmental quality objectives in their environmental work?*

1.3 Delimitations

The study mainly focus on implementation of the SDGs in Sweden and how Swedish companies work with the goals, although some of the included companies also operates in other countries. Sustainable development will be treated in general, although environmental sustainability is studied in larger depth than the other aspects of sustainable development. All of the 17 SDGs are included in the study.

2. Methodology

2.1 Literature study & current situation analysis

A literature review was carried out in order to be able to relate the results from the survey to environmental challenges and to the Swedish overall work with both the SDGs and the environmental quality objectives. The following data bases were used: Google Scholar, Scopus and Science Direct, and the key words: Agenda 2030, sustainable development goals, environmental quality objectives, planetary boundaries.

A network was formed during spring 2017 with the purpose of being a regional forum for Agenda 2030 in western Sweden. Participation in the network made up an important part of the methodology for this thesis since information on how other actors in society work with the SDGs were hard to find. The network was a foundation for how the current situation looked like in western Sweden. It was also an important forum for discussing the implementation of the SDGs and the different initiatives which had followed in its tracks. The network consisted of universities, the county government and representatives from the region, all part of Western Sweden.

2.2 Data collection

In order to get accurate information about how Swedish companies work with the SDGs a questionnaire (Appendix A) was sent out. The questionnaire was created using an online survey tool called SurveyMonkey (SurveyMonkey, 2017). The respondents were selected based on the Sustainable Brand Index⁴ (Sustainable Brand Insight, 2016) for 2016. The Swedish companies that got among the top 100 according to the ranking were included in the study.

The questionnaire was sent out by email, through the online survey tool, to the company's sustainability manager or similar. The subject line included both a question: *How does your company work with the Sustainable Development Goals?* A description of what the survey was going to be used for was also included. 93 companies got the survey and after two weeks the first reminder email was sent to the ones that had not complete the survey. A second reminder email was sent out with the same interval, two weeks, and with a note that it was the last one that was going to be sent.

Some of the questions allowed the respondent to choose multiple answers. One question allowed the respondent to formulate the answer in their own words and two of the questions allowed comments. All questions were in Swedish and the estimated time for completing the survey was ten minutes.

2.3 Data analysis

The response rate was calculated using a formula from Svenska Statistikerförbundet (2017). The formula is commonly used for loss calculations and divides the respondents into four categories of which two were relevant for this study. The first category was received responses which consisted of both complete and incomplete surveys and the second was non-response.

⁴ Sustainable Brand Index is a brand study focusing on sustainability. It is one of the largest in the Nordic and consists of results from 30 000 consumer interviews. It is carried out annually and was founded in 2011.

The response rate was then calculated using the following formula:

$$\frac{\text{Answers}}{\text{Answers + Non-responses}}$$

In order show which branch the respondents represented they were divided into a number of sectors. To a large extent the same division as in the Sustainable Brand Index was used, although hotels, insurance, banks and telecom & broadband were grouped together as “services”. This was due to the otherwise low number of companies in each category. The respondents were divided into the following categories: transportation, energy, food, pharmacies, services, retail.

2.4 Limitations

Since all companies included in the study were chosen based on the Sustainable Brand Index some sectors, such education, were not represented at all. The major part of the businesses also belonged to category large to medium-sized businesses which means that small enterprises were excluded in this study.

3. Results

3.1 Response rate & included sectors

The response rate was calculated using the formula described in section 2.3 which gives the following result (see Box 1).

$$\frac{20}{20 + 73} = 0.2151 \approx 21.5 \%$$

Box 1. Response rate

Out of the 93 companies that got the survey 21.5 % answered it. 10 % of the surveys were incomplete meaning the respondent started it but did not finish all the questions. The sector with the highest number of respondents was *Services* (hotels, banks, insurance, telecom & broadband), followed by *Food, Transportation, Energy, Pharmacies* and finally *Retail* (see Figure 1).

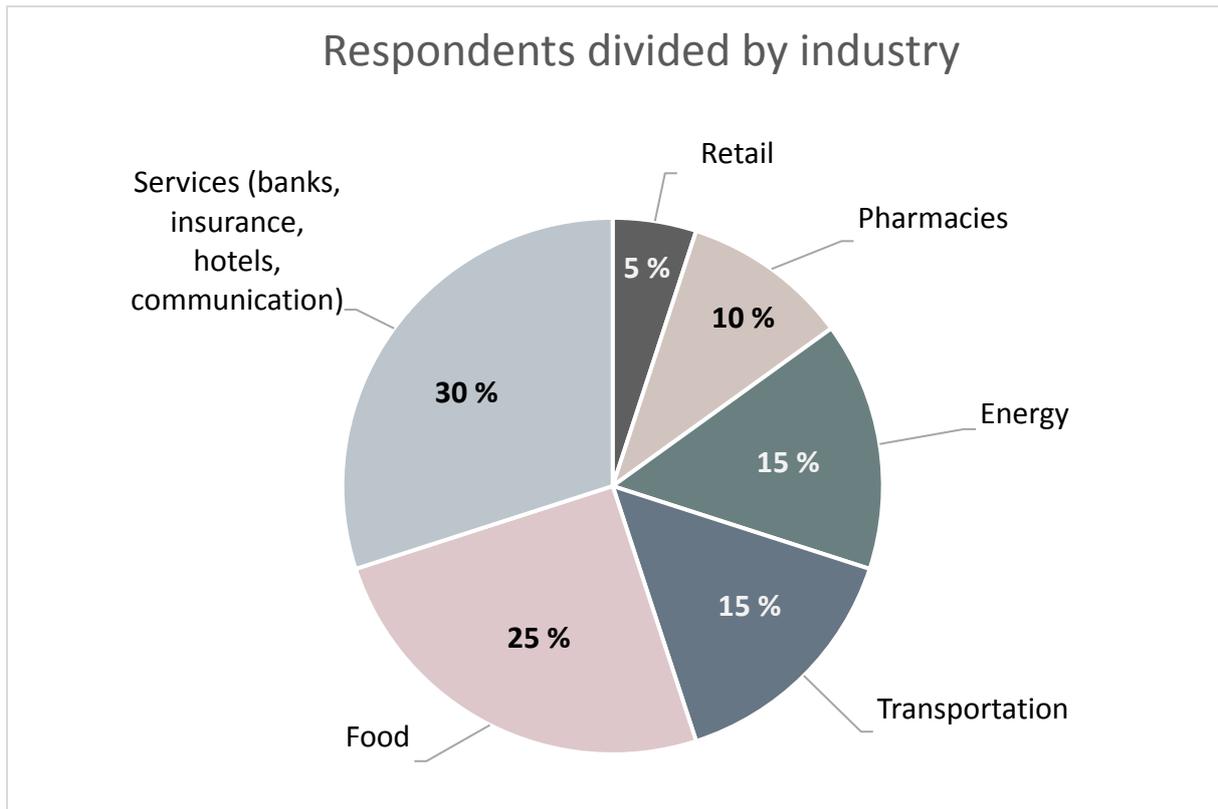


Figure 1. Respondents divided by sector shown as frequency of total number of responses.

3.2 Included sectors and their impact on the environment

The environmental impacts of the sectors represented in this study differs whether they offer a service or a product. The environmental impacts from banks, hotels, insurance, telecom & broadband and services are more indirect and harder to distinguish than the other included sectors. Below the environmental impacts for the included sectors are described briefly.

Services

Banks, hotels, insurance, telecom & broadband and services (which in this study were grouped together as “services”) all have an indirect impact on the climate through the buildings (ventilation and heating etc.) that they operate in. The greenhouse gas intensities are lower for services than for products meaning they have low direct emissions. Although in absolute terms the aggregated greenhouse gas emissions for some services are not lower than for products because of supply-chain effects and the level of household consumption of services (Suh, 2006).

Food

The major part of the environmental impact from the food industry lies in the production phase, while distribution (transportation) and processing have lower contributions. The food sector has impact on ecosystems in the form of emissions of greenhouse gases, eutrophication, changes in land use and emissions of toxic pollutants, which in turn affect biological diversity, human health and the quality of ground- and drinking water (Naturvårdsverket, 2015). There is a need for a sustainable intensification for producing food. In order to feed the growing population more food needs to be

produced on the same area of land and at the same time the environmental impacts must be reduced. This can be done through the use of different agronomic practices such as use of agroforestry, by changing diets to a more plant based one and by reducing food waste (Godfray et al., 2010).

Transportation

Traffic affect the environment and human health through emissions of carbon dioxide as well as particles and hydrocarbons as a result of incomplete combustion of fossil fuels. The transportation sectors also cause noise and act as a barrier for both humans and animals (Naturvårdsverket, 2016). Burning of fossil fuels, in the form of petrol and diesel, also result in the formation of compounds such as sulfur dioxide and nitrogen oxides which results in acidification of lakes and soils. The nutrient balance in ecosystems also get affected by deposition of nitrogen compounds (such nitrogen oxides) which after a while will cause changes in biodiversity and nitrate leaching to surface and ground water. Car exhausts also contain volatile organic compounds (VOC) which under the influence of sunlight in combination with nitrogen oxides forms ozone in the atmosphere. Ozone decreases the productivity of agricultural land and forests. Inhalation of atmospheric particles and ozone are the most important pollutants related to health issues (Pleijel, 2007)

Energy

Like transportation the energy sector emits greenhouse gases in the form of carbon dioxide, sulfur dioxide and nitrogen oxides. Depending on the method for producing energy, the sector has various impacts on the environment, thereby it is difficult to see the sector as homogenous. The production of energy can be divided into energy from renewable (wind, water, sun and biomass) or non-renewable sources (combustion of fossil fuels such as coal and peat). Nuclear power also make up a big part of the electricity production in Sweden, which has most environmental impacts in the fracture of uranium phase and at the final disposal of radioactive waste. Nuclear power plants also emit some radioactive radiation (Naturvårdsverket, 2016).

Pharmacies

Medicines have the largest environmental impact when they have been sold to the consumer. Pharmacies as a sector thereby have an important task in guiding their costumers on how to handle waste and also to provide possibilities to take care of their old medicines. Residues from medicines, especially some of the active substances (e.g. with hormonal effects) have negative effects on the environment when they find its way through sewage systems and end up in streams and oceans. Emissions also occur during the production, which often takes place in countries outside Sweden with less regulations regarding emissions to water and soil. Except medicine residues in waters nearby the factories emissions to air, mostly of solvent, is another environmental problem that the sector cause (Läkemedelsverket, 2016).

Retail

The retail sector stands for a big part of the household's consumption. The environmental impacts of products depend on a lot of factors, not at least what materials it is made of. For example products made of textile, like cotton, demand large amounts of water and also have effects on water quality in nearby streams and rivers (Chapagain et al., 2006). Another environmental issue in the production of textiles is the use of chemicals. These can be categorized into functional chemical substances (such as softener and dye), process chemicals (e.g. surfactants and organic solvents) and accidental chemical products (e.g. formaldehyde and heavy metals). The chemicals used in the textile industry

could harm water ecosystems (through sewage systems), agricultural ecosystems (through sewage systems) and human health through effects on the liver and lungs (by inhalation of dust) (Kemikalieinspektionen, 2015).

Out of the stated impact above and the characteristics of the specific sector it is possible to connect each sector to the goals that they could have an impact on (see Table 1).

Table 1. Included sectors and the environmental quality objectives and Sustainable Development Goals that they affect. (Illustrations environmental quality objectives: Tobias Flygar, illustrations SDGs: UN)

Sector	Environmental quality objectives	Sustainable Development Goals
Services		
Food		
Transportation		
Energy		
Pharmacies		
Retail		

3.3 Implementation of the Sustainable Development Goals

Sweden has appointed a delegation with the mission to stimulate and support the work with Agenda 2030, both nationally and globally. The Agenda 2030-delegation will present a suggestion of an overall action plan for how Sweden should implement the agenda. Through dialogues with county boards, municipalities, businesses and other stakeholders the delegation should promote exchange of knowledge and information between actors (Dir. 2016:18). Sweden will report their work with the Agenda 2030 in July 2017 at the High Level Political Forum in New York. The report will include contributions from Swedish community stakeholders (universities, businesses etc.) that are encouraged by the government office to provide examples and results connected to their work with the SDGs (Regeringskansliet, 2017).

It is completely voluntary for Swedish businesses (as long as they are not owned by the government) to contribute to the national reporting and implementation. Although their contribution to deliver on the goals will have an impact, especially for those who act on a global scale and as well for large businesses in Sweden. Voluntary environmental and sustainability standards are one way for businesses to implement and deliver on the SDGs, another is to work with advocacy and policies within the own sector. Investments from the private sector are also important drivers of progress

since development aid and public founding will not be enough to finance the efforts on fulfilling Agenda 2030 (WWF, 2017).

According to Allen et al. (2016) hybrid models are most suitable for national development planning for the SDGs, since they support long-term analysis and target the national scale. However, the selection of the modelling tool needs to reflect that particular country's prioritized SDGs and targets. It might be necessary to use different models for the 17 SDGs since one might not be capable of modelling all of them. Out of the 80 models reviewed a perceived weakness is the lack of integration of the whole sustainability spectra, especially for social variables. The model capacity for the studied models had the greatest coverage regarding the SDGs: *Decent work and economic growth, Affordable and clean energy, Partnerships for the goals, Zero hunger and Climate change* (Allen et al., 2016).

A recent study published in May 2017, written by leading scientists within different fields connected to the SDGs, explored the interlinkages between the SDGs. This could be used in implementation strategies at a national level. They found that the goals *Zero hunger, Good health and well-being, Affordable and clean energy, Climate action* are the most likely to create synergies with other SDGs. Both positive interactions and trade-offs were assigned scores on a seven-point scale (Griggs et al., 2017).

The result from the survey shows that 90 % of the 20 companies include the Sustainable Development Goals in their sustainability work and 10 % do not (see Figure 2).

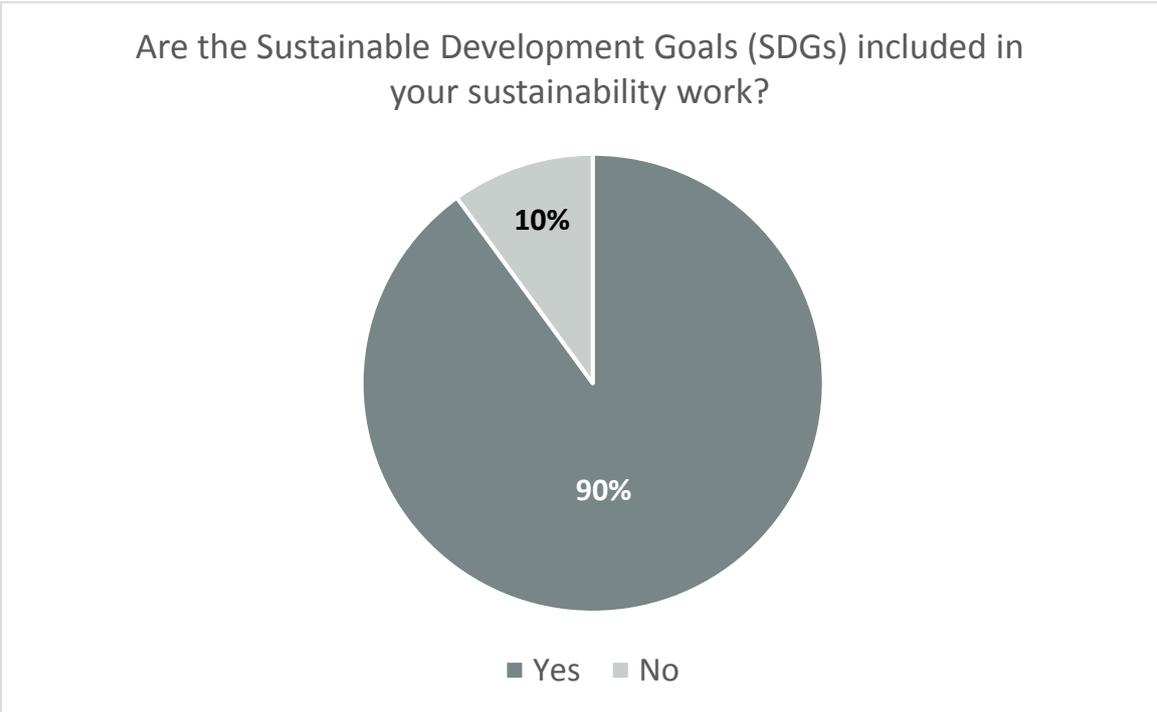


Figure 2. Number of companies (in %) that include the Sustainable Development Goals in their sustainability work.

The most common way to include them in the sustainability work was to integrate them into existing environmental/sustainability goals, which 30 % of the companies answered. 21 % of the companies included the SDGs in their sustainability report and 19 % participate in education and conferences that are connected to the goals (see Figure 3). The respondents also got a chance to again emphasize if they do not work with the SDGs, which 2 % responded. See paragraph 3.3.1 for the answers on "Other".

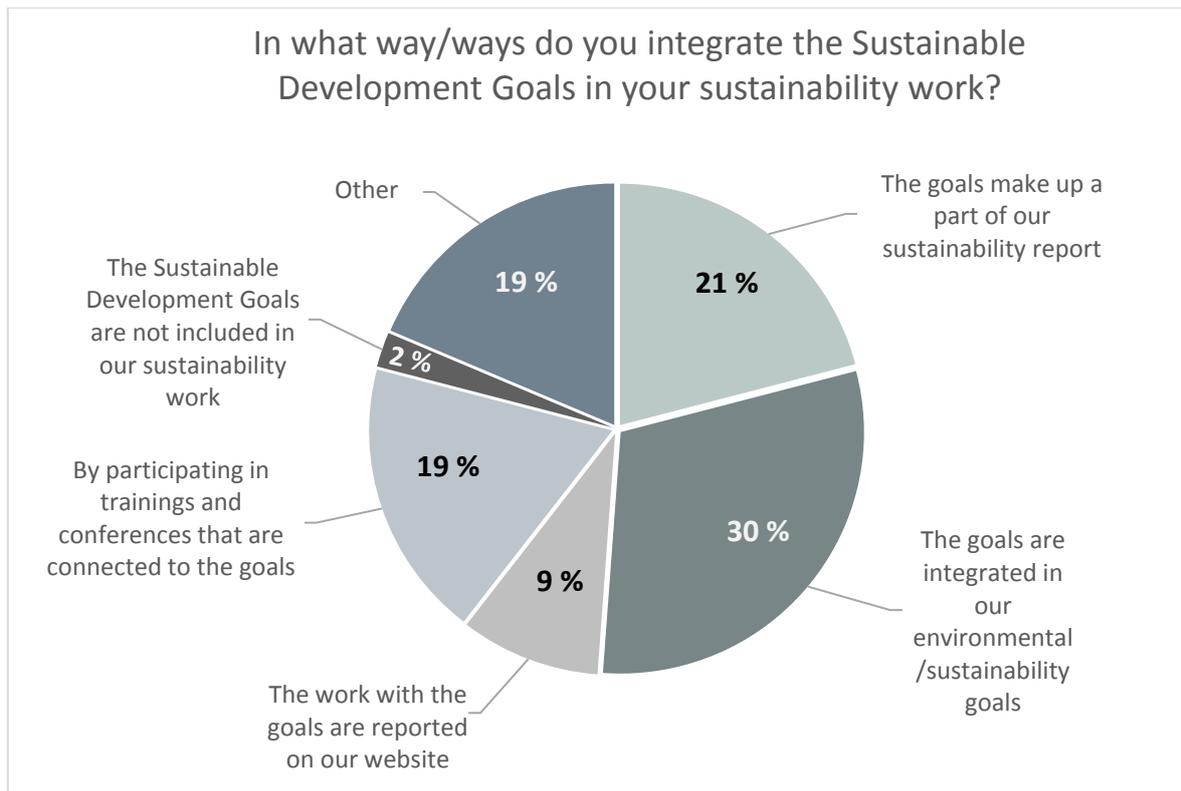


Figure 3. How companies integrate the Sustainable Development Goals in their sustainability work.

By studying the SDGs separately, 15 of the companies included the goal *Decent work and economic growth* in their sustainability work, followed by *Gender equality* and *Climate action* that were included by 14 companies (Figure 4). *Responsible consumption and production* were included by 13 companies and *Industry, innovation and infrastructure* by 12. The goals that were included by the fewest number of companies were *Life below water* followed by *Quality education*.

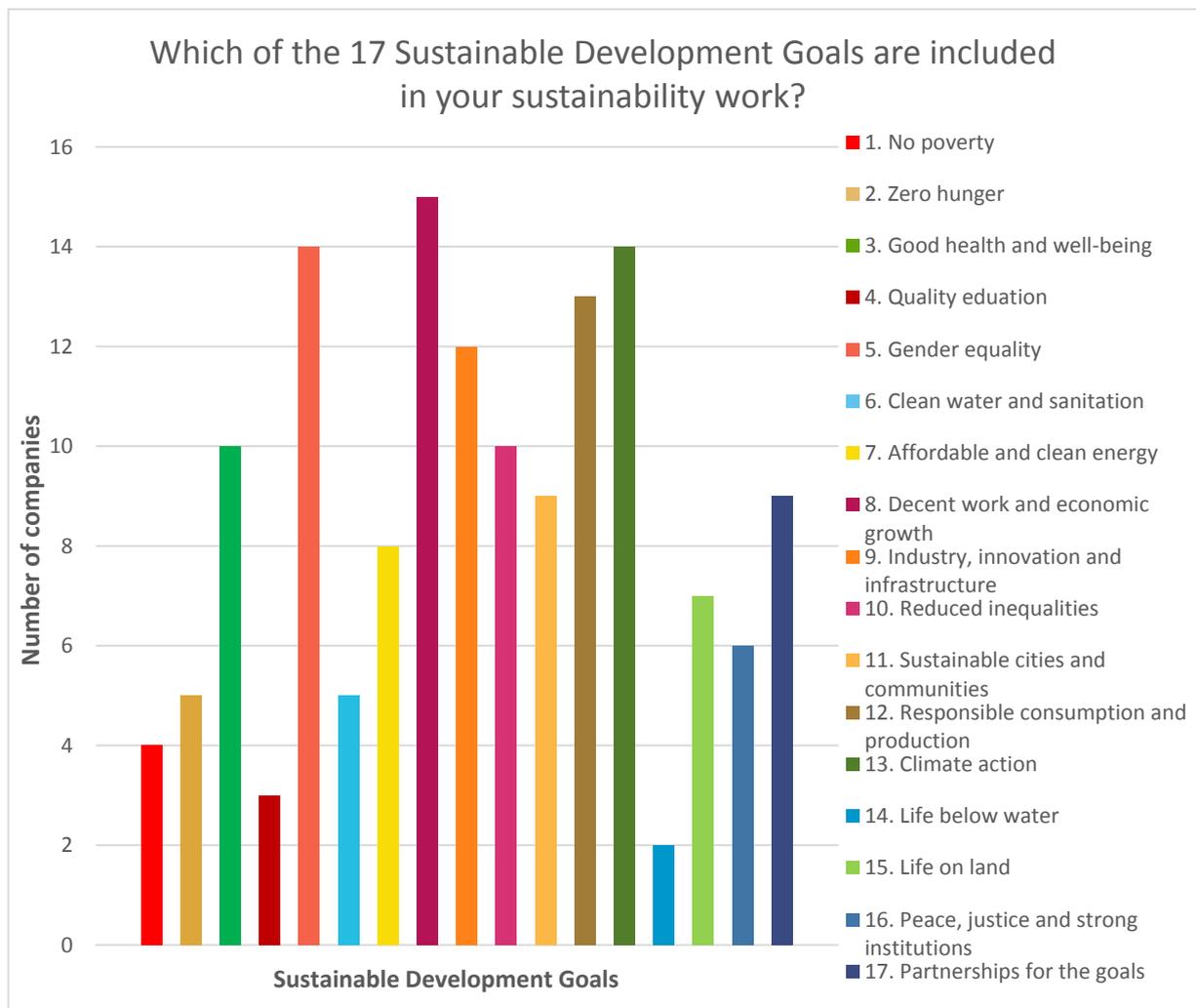


Figure 4. Number of companies that include each of the 17 Sustainable Development Goals in their sustainability work.

Studying the answers divided by sector instead (Table 2) it is clear that only one of the represented sectors have included all of the goals. All sectors have included *Gender equality (5)*, *Decent work and economic growth (8)*, *Industry innovation and infrastructure (11)*, *Responsible production and consumption (12)*, and *Climate action (13)* in their sustainability work. Compared to Table 1, that shows the SDGs that the included sectors could have an impact on, it is possible to see in Table 2 that they cover a lot more of goals in their daily sustainability work. This could be due to goals connected to employees and working environment for example are questions that companies work with either they have a direct impact on them as a sector or not.

Table 2. Which of the 17 goals the companies include in their sustainability work divided by sector (Illustrations: UN).

SDG	Services	Food	Transportation	Energy	Pharmacies	Retail
 1 NO POVERTY		X		X		X
 2 ZERO HUNGER		X				X
 3 GOOD HEALTH AND WELL-BEING	X	X	X		X	X
 4 QUALITY EDUCATION		X				X
 5 GENDER EQUALITY	X	X	X	X	X	X
 6 CLEAN WATER AND SANITATION		X	X			X
 7 AFFORDABLE AND CLEAN ENERGY		X	X	X		X
 8 DECENT WORK AND ECONOMIC GROWTH	X	X	X	X	X	X
 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	X	X	X	X		X
 10 REDUCED INEQUALITIES	X	X	X	X		X
 11 SUSTAINABLE CITIES AND COMMUNITIES	X		X	X		X
 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	X	X	X	X	X	X
 13 CLIMATE ACTION	X	X	X	X	X	X
 14 LIFE BELOW WATER			X			X
 15 LIFE ON LAND		X	X	X		X
 16 PEACE AND JUSTICE	X		X		X	X
 17 PARTNERSHIPS FOR THE GOALS	X	X		X		X

3.3.1 Examples of ways to implement the SDGs

It differs how the companies practically work with the SDGs, although it is possible to roughly divide the answers into the following groups:

- Through strategies/programs that has been formed after e.g. gap-analysis's of the SDGs (**18 %** of the companies)
- In connection to the environmental management system (**18 %**)
- In connection to company specific goals/other key figures (**35 %**)
- By focusing on their own product and how it could be improved (**17 %**)
- By focusing on specific SDGs that have a direct connection to the sector that the company is part of (**12 %**)

The respondents were able to explain by their own words how the company practically work with the goals, some of these answers are provided below. One company indicated that they have made a GAP-analysis in order to set new environmental objectives (Box 2). While another company states that they had worked with the goals in a more intuitive level (Box 3). One company focused more on their own product (Box 4) while another one focused on how they could integrate the SDGs in the company's already existing key issues (Box 5).

"Prior to the development of new goals we have made GAP-analysis regarding the Sustainable Development Goals and taking into account the Sustainable Development Goals in the design of our goals."

Box 2

"We do not follow up the impact that our activities have in relation to the SDGs quantitatively. In the current situation the connections to the goals is on a more intuitive level, based on the milestone descriptions from the UN."

Box 3

"Produce nutritional products in a sustainable way. By working with circular economy."

Box 4

"Our sustainability council has during the year analyzed the 17 goals and the 169 targets to determine which of them we should focus on in our business and how we can integrate them into the activities of the previously described areas of our company's key issues."

Box 5

Half of the respondents felt that the process of integrating the SDGs in their sustainability work had been feasible. 11 % thought it had gone smoothly, while 11 % indicated that it had been occasionally complicated (Figure 5).

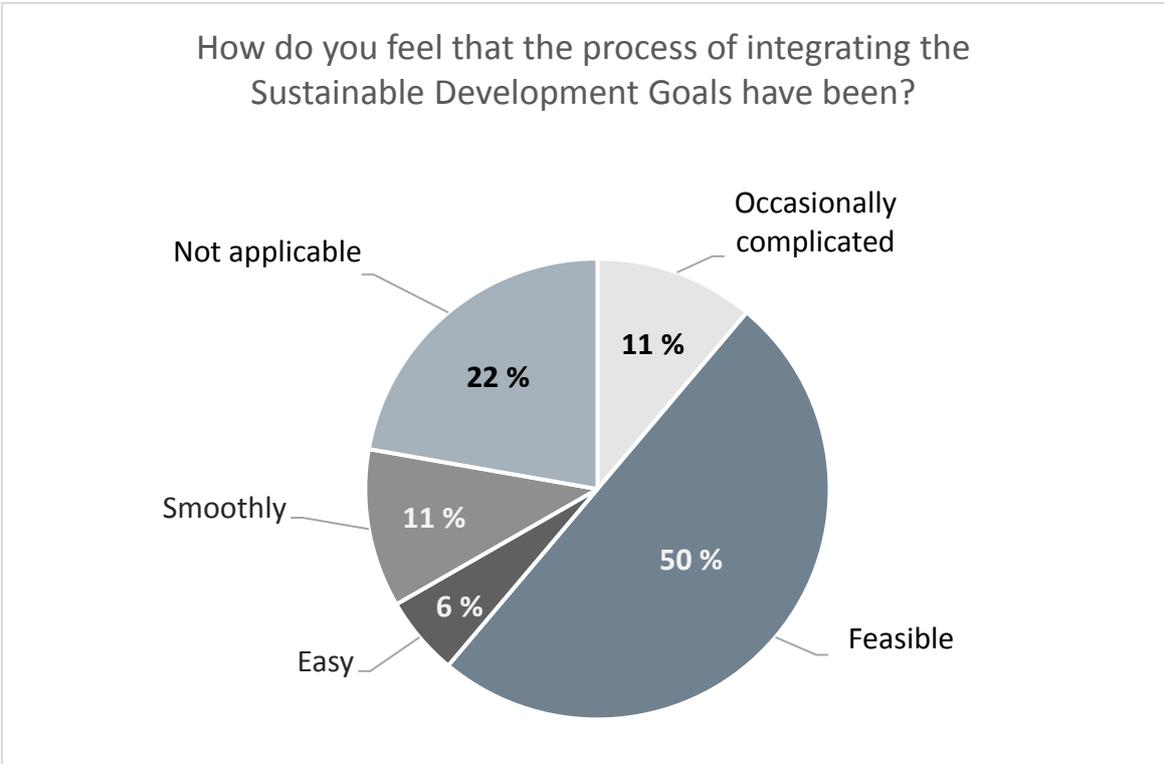


Figure 5. Impressions by the companies of integrating the Sustainable Development Goals.

3.4 The Sustainable Development Goals and the environmental quality objectives

The relationships between the national environmental quality objectives (with focus on the generational goal) and the SDGs for the included companies will be presented below. At a national level efforts have been made in order to link them. Swedish EPA has showed, in their latest evaluation of the environmental quality objectives, how the measures for the environmental quality objectives during 2016 contributed to each of the SDGs and its targets (Swedish Environmental Protection Agency, 2017).

Out of 18 respondents, 45 % of the companies' stated that they had connected their work with the environmental quality objectives to the SDGs. 22 % answered that the environmental quality objectives are an important part of their sustainability work, while 33 % indicated that they do not work with the environmental quality objectives (Figure 6).

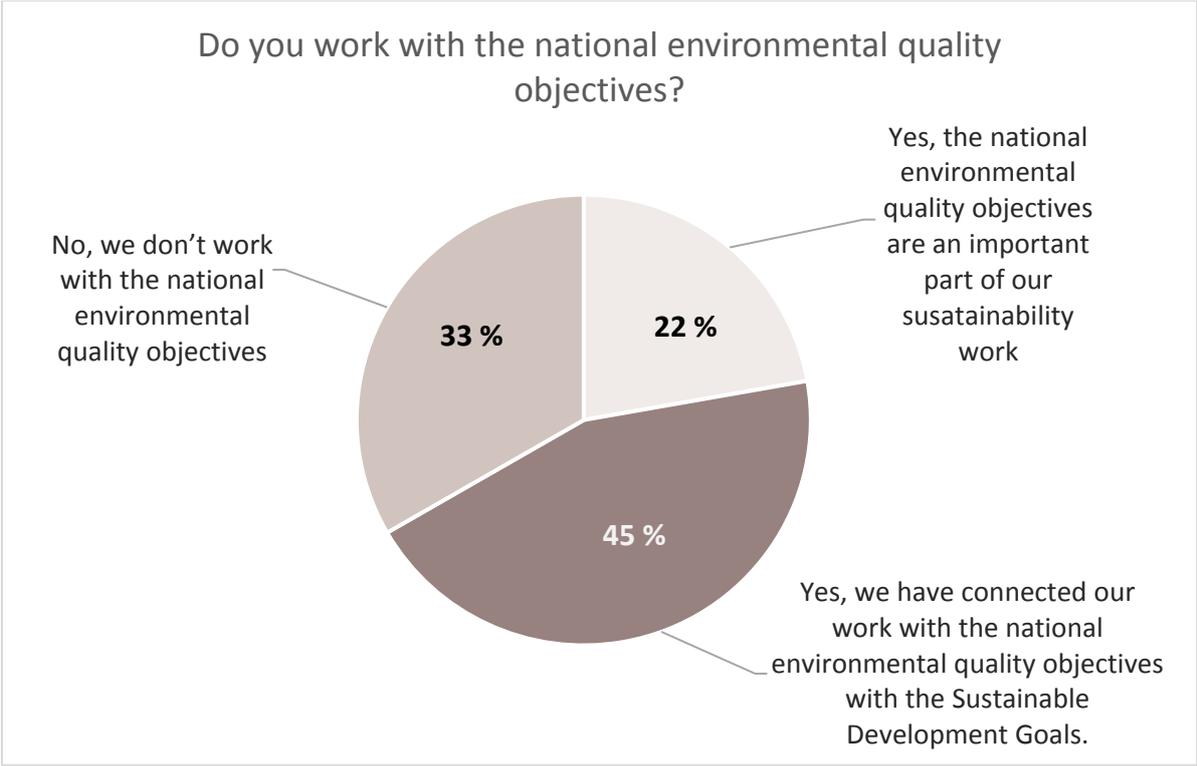


Figure 6. Number of companies (in %) that work or do not work with the national environmental quality objectives.

Looking at the answers divided by sector instead (Figure 7) three of them, *Food, Energy* and *Retail* worked with the environmental quality objectives either in combination with the SDGs or as a separate part of their sustainability work. Compared to the *Service* sector where about 60 % (3 companies) answered that they does not work with the national goals, neither do *Pharmacies* and about half of the *Transportation* sector work with environmental quality objectives.

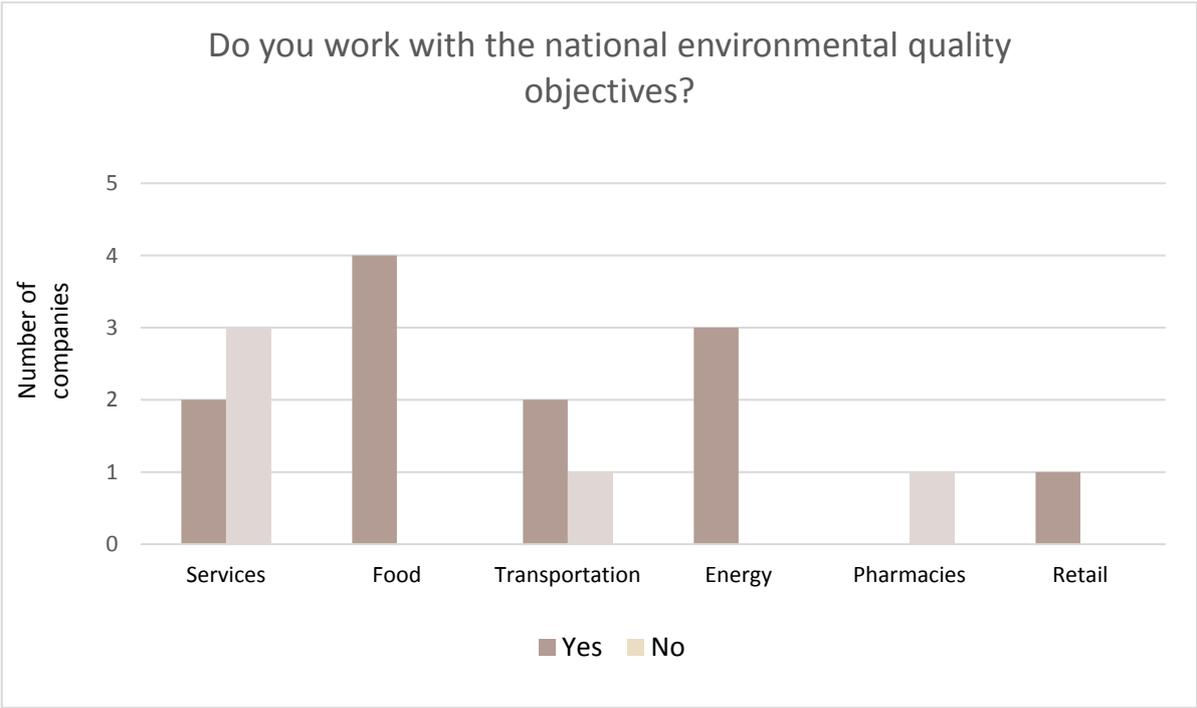


Figure 7. Number of companies, divided by sector that work/does not work with the environmental quality objectives.

Focusing on the overall goal for the Swedish environmental quality objectives (the generational goal), 11 companies answered that they did not connect it to the SDGs (Figure 8). Eight companies connected the generational goal to the goal *Responsible consumption and production*, followed by *Sustainable cities and communities* (seven companies). Five of the companies connected the overall goal to *Affordable and clean energy*, *Decent work and economic growth*, *Industry, innovation and infrastructure*, *Climate action* and *Life on land*. Three of the goals: *No poverty*, *Quality education* and *Partnerships for the goals*, did not have any connections to the work with the generational goal according to the respondents.

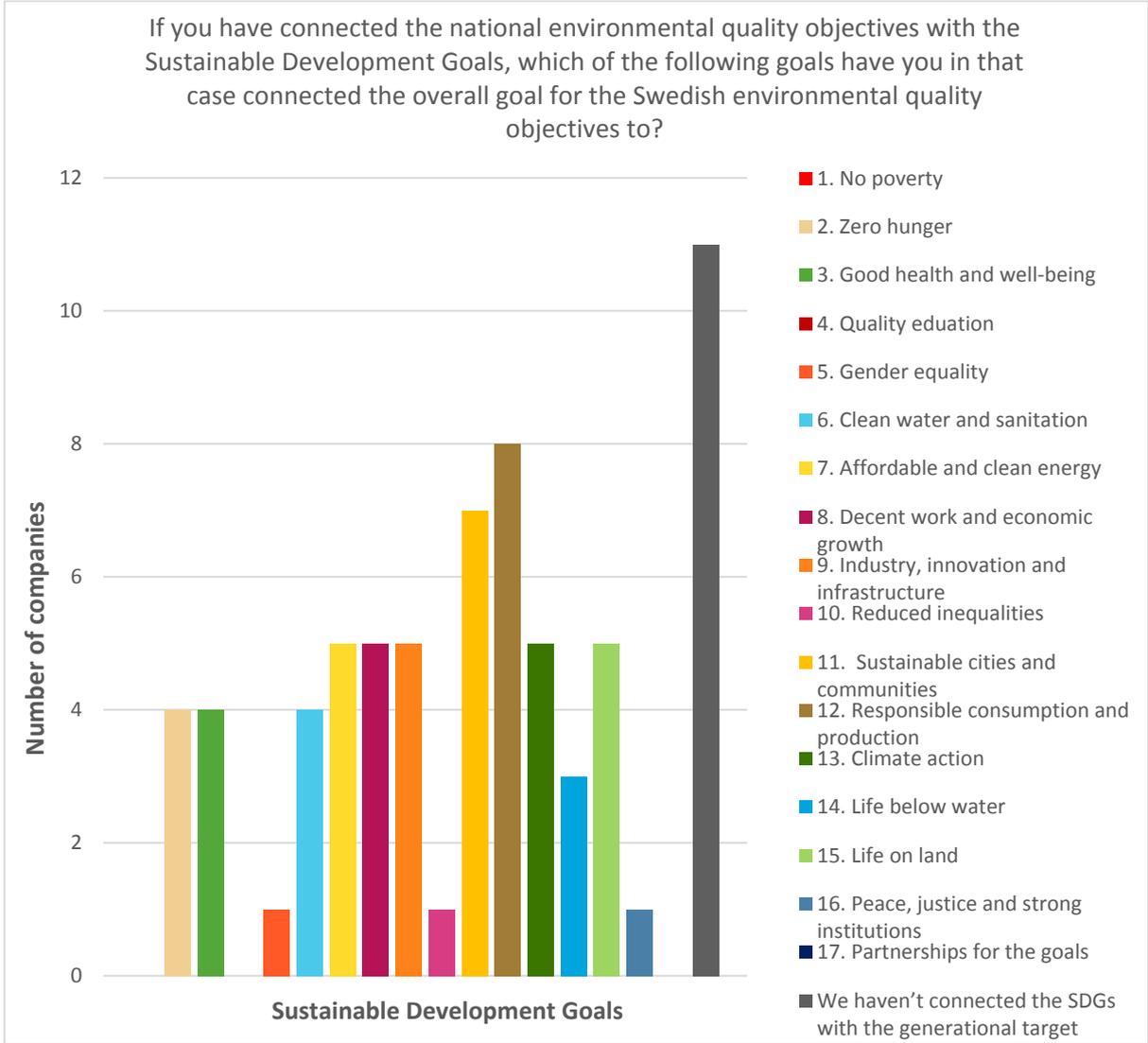


Figure 8. Number of companies that connect each of the 17 Sustainable Development Goals to the generational goal.

Efforts on the goals *Responsible consumption and production* and *Sustainable cities and communities* correspond well with national efforts. Since the generational goal focus on environmental problems it is not surprising that the companies make connections to the goals that focus more on the environmental aspects of sustainability. While equality, peace and education, more traditionally social aspects of sustainability, are not prioritized. Although the purpose with the SDGs is to see the whole spectrum of sustainability. As seen in Figure 1, services, food and transportation constitutes the largest part of respondents, which might have effects on the result seen in Figure 8 above.

3.5 Measures & evaluation of the Sustainable Development Goals

One way to measure if a society is moving in a path towards sustainable development or not is the use of Sustainable Development Indicators (SDI). It is impossible to measure sustainability directly and it is thereby mostly done through predications on how the ultimate sustainable system would be characterized (Granåsjordet, 2012). This could be connected to what is described in section 1.1.3 about planetary boundaries, which could be seen as the limit for that system beyond which we cannot go in order to reach a sustainable development.

The SDGs cannot be measured directly. Costanza et al. (2016) have instead studied how the SDGs can be connected to measures of overall sustainable well-being. They argue that it is important to both know where you are going and to have a dashboard-approach. As stated in the Introduction, Costanza et al (2014) claims that the overall higher goal for the SDGs should be in focus when measuring progress on the goals. By linking the SDG dashboard with a Sustainable Well-being Index (SWI) it could be possible to measure the progress towards the overall goal. The SWI could be based on the following: net economic distribution, natural capital/ecosystem service contribution and social capital/community contribution. The absence of any of these three would lead to zero SWI. It is consequently important that they are combined (Costanza et al., 2016).

When it comes to reporting and follow up the work with the goals 44 % of the companies answered that they are not yet sure how they are going to report their progress (see Figure 9). 28 % are going to report annual key figures on some of the goals, while 5 % are going to report annual key figures for all 17 SDGs. 17 % are going to present their work with the SDGs in writing on their webpage or similar.

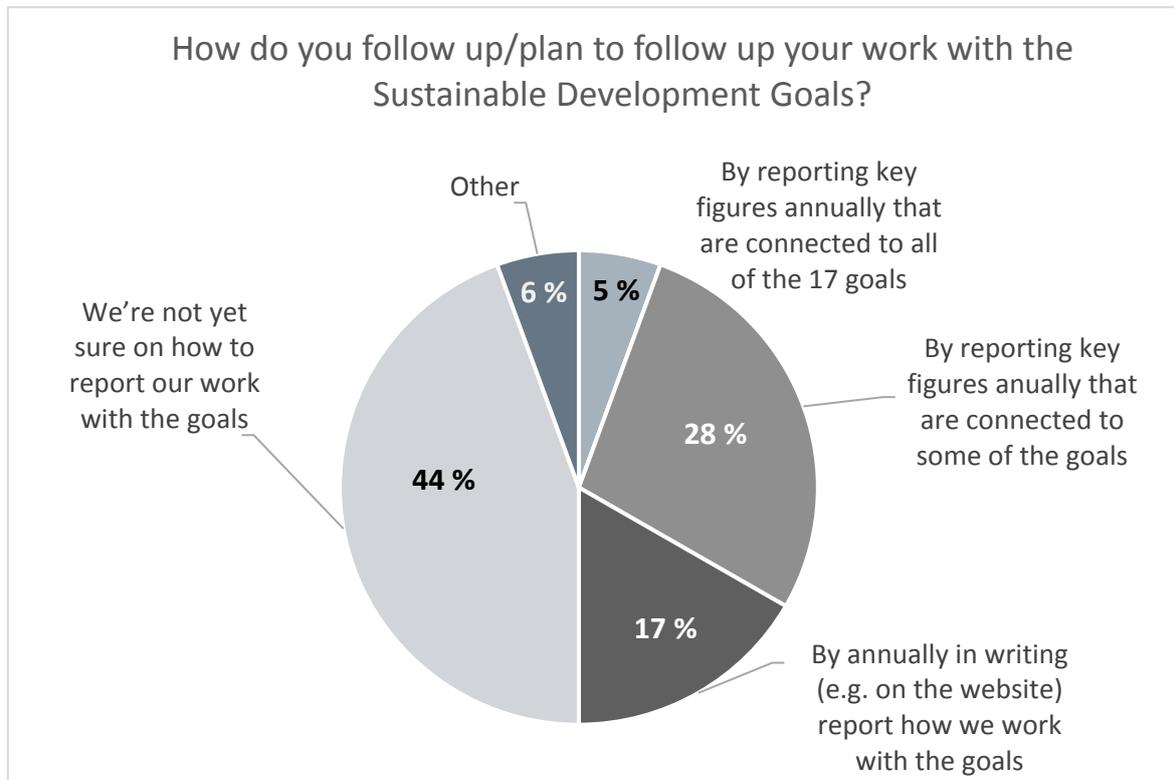


Figure 9. How the chosen companies follow up their work with the Sustainable Development Goals.

4. Discussion

4.1 Businesses role in the implementation of Agenda 2030

The sustainable development challenge demands a multi-stakeholder approach. National governments need to work together with businesses, academia and civil society, among others. No single institution or group of actors can make a crucial difference alone. In Sweden dialogues and collection of information is conducted by the Agenda 2030-delegation, a process in which businesses fill an important role as a provider of examples of actions connected to the SDGs. But mostly, and first of all, companies have the possibility to really direct the whole business against the SDGs by systematically working with them as a part of their daily practice. As can be seen in section 3.2 the included companies and the sector that they are a part of contribute to emissions of certain substances and affect the environment negatively in different ways. Businesses as an actor in society can thereby contribute to making a big difference in the possibility to reach the SDGs and fulfill the agenda. As the results show, a major part of the included companies (90 %) work with the SDGs in some way. This is in line with the results found in other survey studies, where less than one in ten companies are not contributing to the SDGs (GlobeScan, 2017). As can be seen in Figure 3 many of them also include the SDGs in their already existing environmental/sustainability goals which is a prerequisite for being able to work with them in a systematical way and as an integrated part of the sustainability work.

Half of the companies find the process of integrating the SDGs feasible (see Figure 5). A smaller number answers that it has been occasionally complicated and as many that it has gone smoothly. This could have a connection to Figure 9 where 44 % of the companies specify that they are not yet sure how the follow up and report their work with the SDGs. It is also possible to see that only 5 % of the companies have the ambition to annually report key figures on all of the 17 SDGs. One of the obstacles in the implementation process in companies is how the measure and evaluate the progress of the work with the SDGs. If this is not set it is hard to know in what direction the sustainability work is heading. Thereby it must be wisely to first investigate what SDGs that is both possible for the company to measure and also relevant for their business to work with, both in terms of their own environmental impact and the impact of the sector that they are part of (see Table 1). How many of the SDGs that is possible for the company to work with will of course also be determined by the size of the company and its available resources. An already well incorporated systematical way of working with environmental and sustainability issues will of course also determine if the implementation will be smoothly or not. It might also be the case that some companies are waiting for further instructions from the governmental level on what direction Sweden should take when implementing the SDGs, at least when it comes to measuring progress on the SDGs.

4.2 Efforts on certain SDGs and their relevance to national environmental challenges

Depending on the level of ambition, and maybe also the size of the company, the included companies in the study stated that they work with some, several or all of the SDGs. Looking at which of the goals they have in common *Decent work and economic growth* comes in first place, which 15 companies work with (see Figure 4). Followed by *Gender equality* which is, just as “decent work”, generally associated with a business work with the working environment. The connection between economic growth and environmental impact is well known and maybe one of the most important reasons for a slow development against sustainable development. It is therefore crucial with a

growth that takes social and environmental aspects into account, which is the purpose with *Decent work and economic growth*.

14 of the companies works with *Climate action* (see Figure 4), a SDG which is identified by the GlobeScan to be one of the goals that experts thinks is the most important for society to focus on in order to achieve the most progress against sustainable development (GlobeScan, 2017). The synergies that the goals have upon each other must be of great importance in the fulfilling of the agenda though the goals with more synergies, like *Climate action* will speed up the process of reaching the other goals. Thereby it is maybe more efficient to focus on the goals that have the most synergy effects on other goals. Until recently it has been problematic to see which of the goals that has the strongest synergy effects with others because of the lack of a framework for the links between the goals/targets and how they interact with each other. In Griggs et al. (2017) such a framework is described for the first time to a larger extent. They argue that countries will prioritize between SDGs as they have both political, resource and budgetary restraints (Griggs et al., 2017). The same will probably account for businesses. *Responsible consumption and production* were included by 13 companies and it also might be the goal that most directly affect the business sector since it is dependent on consumption on one hand and on the other have the power to present products or services that are sustainable.

Looking at the specific SDGs divided by sector instead it is possible to see that *Retail*, followed by *Food* and *Transportation* covers the most SDGs. Since the response rate on the survey was 21.5 % the number of companies within each sector was quite low. Meaning one company could have had large effects on the result, on the other hand if more companies were included the sectors would probably cover more SDGs in total. Since there was no question on how big the companies were compared to each other it is not possible, due to the anonymous of the respondents, to comment on whether the size of the company are correlated with the number of SDGs included in the sustainability work. Although it is possible to draw the conclusion that larger companies have more resources to put aside for their work with the goals and maybe also have other expectations from the outside world to be serious about their commitments regarding the SDGs.

Among the goals that were not prioritized we found *Life below water* followed by *Quality education*. Since none of the included businesses were part of the educational sector it might not be that surprising. Overall studies show that *Life below water* is ranked as least important to focus when it comes to achieving the most progress, while *Quality education* is ranked as very high (GlobeScan, 2017).

4.3 Integrating the SDGs with the environmental quality objectives

There is a gap between the environmental quality objectives and the SDGs that makes it impossible to see the environmental quality objectives as a way for Sweden to fully cover the ecological parts in the SDGs and its targets. Despite this the respondents answers that they have in some way integrated the SDGs with the environmental quality objectives. The overall goal for the objectives maybe states what could be counted as ecological sustainability and thereby it became interesting to focus on that and not each of the objectives separately in relation to the SDGs. The included companies answered that they have connected *Responsible consumption and production* and *Sustainable cities and communities* to the generational goal, which also match the national efforts. The SDGs has also been included as a part in the evolution of the progress on the environmental quality objectives which could be seen as a way of approaching the connection between the different goals. Although the environmental quality objectives should by fulfilled by the year 2020, it is most

likely that the new objectives will be in line with the Swedish priorities regarding Agenda 2030 when it comes to ecological sustainability.

4.4 Method

Due to problems with locating direct email addresses to some of the companies only 96 of the 100 chosen companies were contacted by mail. Out of the 96 emails, 3 (3.1 %) bounced back, meaning it did not get to the respondent. In order to increase the response rate the questionnaire was sent out to the company's sustainability manager or equal. According to Cialdini et al. (1992) respondents are more likely to respond to a survey if they think that others in the similar group have answered it, as a form of social acceptance. In order to increase the number of participants in mail surveys it is important to personalize the survey and to be careful with what to write in the subject line (Anseel et al., 2010). Since an online questionnaire was used there was no way to ask complementing questions or provide any explanations if the questions were unclear to the respondent. For a study with a more generous time frame interviews would have been preferred since they can give another depth to the answers and counter misunderstandings that the respondents may have. The incomplete surveys affect the results since one of the companies answered the first two questions and one only the first one. The motives for quitting the survey early could either be because the respondent finds the questions irrelevant for their company or because of time restraints due to different reasons. Through the study and in the construction of the questionnaire there were always a balance between the number of questions and their level of complexity and the amount of time the respondent had the opportunity to spare. A higher response rate would have given a more reliable result not at least when it comes to the analysis where the companies are divided depending on what sector they are part of. One of the categories only include one company, meaning that one company's answers need to speak for the sector as a whole which could be problematic.

4.5 Recommendations

Companies work with implementing the SDGs could be improved and developed by choosing certain SDGs with consideration to the company's environmental impact, the synergies between the chosen goals and by integrate them into the systematic environmental work. Further studies could include a wider selection of respondents such as companies from sectors that were not included in this study e.g. education. It could also be an idea to look at a single company to see how they more in detail work with the SDGs and see if it is possible to maximize the synergies between the goals and targets they work with. In general there is still a need for more research within the field of synergy effects between the goals/targets and maybe also frameworks to identify these for different sectors or actors. Regarding measures for the progress on the SDGs it can be interesting to look at different indicators or ways to measure progress for different actors or sectors in Sweden.

5. Conclusions

- Businesses will contribute to the work with implementing Agenda 2030 in Sweden by providing examples on actions connected to the Sustainable Development Goals, by making investments that will contribute to the fulfilling of the Agenda 2030 and by systematically working with the Sustainable Development Goals in their sustainability work.
- 90 % of the companies have included the Sustainable Development Goals in their sustainability work, by integrating them into their environmental/sustainability goals (30 %), in their sustainability report (21 %) and/or by participating in conferences and education connected to the Sustainable Development Goals (19 %).
- Businesses could maximize their contribution to the work with the Sustainable Development Goals by putting effort on the Sustainable Development Goals that have most positive interactions and synergies with other Sustainable Development Goals. The specific Sustainable Development Goals that are prioritized by the included companies according to this study are: *Decent work and economic growth*, *Gender equality* and *Climate action*.
- 45 % of the companies have integrated their work with the Sustainable Development Goals with the environmental quality objectives. Most of them have connected the overall national goal for the environmental policy to the Sustainable Development Goals: *Responsible consumption and production* and *Sustainable cities and communities*.
- Obstacles for implementing the Sustainable Development Goals at companies include: choosing which of Sustainable Development Goals to work with in consideration of synergies between the goals, existing environmental work and the company's environmental impact, uncertainty on how to measure progress on the goals and awaiting national directives on how Sweden should implement the agenda.

6. Acknowledgements

I would like to thank my supervisor at University of Gothenburg, Håkan Pleijel, for valuable comments and help along the way with finishing this thesis. A special thank you to Maria Djupström, employer and environmental manager at Chalmers University of Technology, for letting me be part of the work with the SDGs at Chalmers and the forum for Agenda 2030 in Western Sweden. I would also like to thank the other members of the forum for letting me participate and take part of the important work with the implementation of the agenda. Also a big thank you to my friends and family who have supported me through the process.

7. References

- Abresparr et al. (2014). *Generationsmålet – Tankar om miljöpolitik och samhällsomställning*.
- Allen, C., Metternicht, G., & Wiedmann, T. (2016). National pathways to the Sustainable Development Goals (SDGs): A comparative review of scenario modelling tools. *Environmental Science & Policy*, 66, 199-207.
- Anseel, F., Lievens, F., Schollaert, E. & Choragwicka, B. (2010). Response Rates in Organizational Science: A MetaAnalytic Review and Guidelines for Survey Researchers. *Journal of Business and Psychology*, 25, 335-349.
- Carbon Market Watch. (2017). *EU Climate Leader Board – Where countries stand on the Effort Sharing Regulation*. Available 2017-03-29, from: <http://carbonmarketwatch.org/eu-climate-leader-board-where-countries-stand-on-the-effort-sharing-regulation/>
- Chapagain, Hoekstra, Savenije, & Gautam. (2006). The water footprint of cotton consumption: An assessment of the impact of worldwide consumption of cotton products on the water resources in the cotton producing countries. *Ecological Economics*, 60(1), 186-203.
- Cialdini, R. B., Groves, R. M. & Couper, M. P. (1992). Understanding the decisions to participate in a survey. *Public Opinion Quarterly*, 56, 475-495.
- Costanza, R., Daly, L., Fioramonti, L., Giovannini, E., Kubiszewski, I., Mortensen, L. F., ... & Wilkinson, R. (2016). Modelling and measuring sustainable wellbeing in connection with the UN Sustainable Development Goals. *Ecological Economics*, 130, 350-355.
- Costanza, R., McGlade, J., Lovins, H., & Kubiszewski, I. (2014). An overarching goal for the UN sustainable development goals. *Solutions*, 5(4), 13-16.
- Dir. 2016:18. *Genomförande av Agenda 2030 för hållbar utveckling*. Stockholm: Finansdepartementet.
- Finansdepartementet. (2016). *Strategi för hållbar konsumtion*. Fi: 2016:6. Finansdepartementet, Regeringskansliet.
- Forster, P., Ramaswamy, V., Artaxo, P., Berntsen, T., Betts, R., Fahey, D. W., ... & Nganga, J. (2007). Changes in atmospheric constituents and in radiative forcing. Chapter 2. In *Climate Change 2007. The Physical Science Basis*.
- Garnåsjordet, P. A., Aslaksen, I., Giampietro, M., Funtowicz, S., & Ericson, T. (2012). Sustainable development indicators: from statistics to policy. *Environmental Policy and Governance*, 22(5), 322-336.
- GlobeScan. (2017). *Evaluating progress towards the Sustainable Development Goals*. GlobeScan & SusatinAbility.
- Godfray, H. C. J., Beddington, J. R., Crute, I. R., Haddad, L., Lawrence, D., Muir, J. F., ... & Toulmin, C. (2010). Food security: the challenge of feeding 9 billion people. *Science*, 327(5967), 812-818.
- Griggs, D.J.; Nilsson, M.; Stevance, A.; McCollum, D. (eds.). (2017). *A guide to SDG interactions: From science to implementation*. Paris, France: International Council for Science (ICSU).

- Kemikalieinspektionen. (2015). *Kemikalier i textilier – risker för människors hälsa och miljön*. Stockholm: Arkitektkopia.
- Läkemedelsverket. (2016). *Läkemedel, medicintekniska produkter, kosmetiska produkter och tatueringsfärger – hur påverkar de våra svenska miljömål?*. Uppsala: Läkemedelsverket
- Länsstyrelsen Västra Götalands län. (2015). *Regionala miljömål för Västra Götaland*. Rapport: 2015:50, Länsstyrelsen Västra Götalands län.
- Ministry of the Environment. (2013). *The Swedish environmental objectives system*. Stockholm: Ministry of the Environment Sweden.
- Nilsson, M., Griggs, D., Visbeck, M. (2016). Map the interactions between Sustainable Development Goals. *Nature*, 534, 320-322. doi: 10.1038/534320a
- Naturvårdsverket. (2016). *Energin påverkar miljön*. Available 2017-04-25, from: <http://www.naturvardsverket.se/Miljoarbete-i-samhallet/Miljoarbete-i-Sverige/Uppdelat-efter-omrade/Energi/Energin-paverkar-miljon/>
- Naturvårdsverket. (2016). *Vägtrafikens miljöpåverkan*. Available 2017-04-25, from: <http://www.naturvardsverket.se/Miljoarbete-i-samhallet/Miljoarbete-i-Sverige/Uppdelat-efter-omrade/Transporter-och-trafik/Vagtrafik/Vagtrafikens-miljopaverkan/>
- Naturvårdsverket. (2015). *Hållbara konsumtionsmönster – analyser av maten, flyget och den totala konsumtionens klimatpåverkan idag och 2050*. Rapport 6653. Stockholm: Naturvårdsverket.
- Naturvårdsverket. (2014). *Miljömålssystemets historia*. Available 2017-02-22, from: <https://www.miljomal.se/sv/Miljomalen/Miljomalssystemets-historia/>
- Pleijel, H. (2007). *Transboundary Air Pollution: Scientific Understanding and Environmental Policy in Europe*. Lund, Sweden: Studentlitteratur.
- Regeringskansliet. (2017). *Stort intresse för FN:s politiska högnivåforum bland svenska samhällsaktörer*. Available 2017-03-10, from: <http://www.regeringen.se/artiklar/2017/03/stort-intresse-for-fns-politiska-hognivaforum-bland-svenska-samhallsaktorer/>
- Regeringskansliet. (2016). *Att förändra vår värld: Agenda 2030 för hållbar utveckling*. Stockholm: Regeringskansliet
- Rockström, J., Gaffney, O., Rogelj, J., Meinshausen, M., Nakicenovic, N., Schellnhuber, H. J. (2017). A roadmap for rapid decarbonization. *Science*, 355 (6331), 1269-1271. doi: 10.1126/science.aah3443
- Suh, S. (2006). Are services better for climate change?. *Environmental science & technology*, vol. 40, nr. 21, 6550-6560.
- Sustainable Development Solutions Network (SDSN). (2013). *The key challenges to 2030/2050: mapping out long-term pathways to sustainability and highlighting solutions that should be scaled up*. United Nations: Sustainable Development Solutions Network.
- Steffen, W., Richardson, K., Rockström, J., Cornell, S. E., Fetzer, I., Bennett, E. M., ... & Folke, C. (2015). Planetary boundaries: Guiding human development on a changing planet. *Science*, 347(6223), 1259855.

- SurveyMonkey. (2017). Available at: <https://sv.surveymonkey.com/home/> [2017-03-01]
- Sustainable Brand Insight. (2016). *Official report – Sustainable Brand Index 2016*. Sustainable Brand Insight.
- Swedish Environmental Protection Agency. (2017). *Miljömålen - årlig uppföljning av Sveriges nationella miljömål 2017*. Rapport: 6749. The Swedish Environmental Protection Agency.
- Swedish Environmental Protection Agency. (2016). *Miljömålen - årlig uppföljning av Sveriges miljö kvalitetsmål och etappmål 2016*. The Swedish Environmental Protection Agency.
- UN General Assembly (2015). *Transforming our world: the 2030 Agenda for Sustainable Development* (A/RES/70/1). New York: United Nations
- WWF. (2017). *SDGs means business: how credible standards can help companies deliver the Agenda 2030*. Gland: World Wide Fund For Nature.

Appendix A. Survey (English)

1. What is the name of the company?

Answer:

2. Are the Sustainable Development Goals (SDGs) included in your sustainability work?

- Yes
- No

3. In what way/ways do you integrate the Sustainable Development Goals in your sustainability work?

- The goals make up a part of our sustainability report
- The goals are integrated in our environmental/sustainability goals
- The work with the goals are reported on our website
- By participating in trainings and conferences that are connected to the goals
- The Sustainable Development Goals are not included in our sustainability work
- Other:

4. Which of the 17 Sustainable Development Goals are included in your sustainability work?

- No poverty
- Zero hunger
- Good health and well-being
- Quality education
- Gender equality
- Clean water and sanitation
- Affordable and clean energy
- Decent work and economic growth
- Industry, innovation and infrastructure
- Reduced inequalities
- Sustainable cities and communities
- Responsible consumption and production
- Climate action
- Life below water
- Life on land
- Peace, justice and strong institutions
- Partnerships for the goals

5. How do you practically work with the Sustainable Development Goals that you have chosen to focus on? Please describe with an example from your own company.

Answer:

6. Do you work with the national environmental quality objectives?

- Yes, the national environmental quality objectives are an important part of our sustainability work
- Yes, we have connected our work with the national environmental quality objectives with the Sustainable Development Goals.
- No, we do not work with the national environmental quality objectives

7. If you have connected the national environmental quality objectives with the Sustainable Development Goals, which of the following goals have you in that case connected the overall goal for the Swedish environmental quality objectives (the generational goal) to?

- No poverty
- Zero hunger
- Good health and well-being
- Quality education
- Gender equality
- Clean water and sanitation
- Affordable and clean energy
- Decent work and economic growth
- Industry, innovation and infrastructure
- Reduced inequalities
- Sustainable cities and communities
- Responsible consumption and production
- Climate action
- Life below water
- Life on land
- Peace, justice and strong institutions
- Partnerships for the goals
- We have not connected the SDGs with the generational goal

8. How do you feel that the process of integrating the Sustainable Development Goals on a national level have been (e.g. linking them to your work with the Swedish environmental quality objectives)?

- Difficult
- Occasionally complicated
- Feasible
- Easy
- Smoothly
- Not applicable

9. How do you follow up/plan to follow up your work with the Sustainable Development Goals?

- By reporting key figures annually that are connected to all of the 17 goals
- By reporting key figures annually that are connected to some of the goals
- By annually in writing (e.g. on the website) report how we work with the goals
- We are not yet sure on how to report our work with the goals
- Other:

Appendix B. Survey (Swedish)

1. Vilket är företagets namn?

Fritext:

2. Ingår de globala målen (Sustainable Development Goals) i ert hållbarhetsarbete?

- Ja
- Nej

3. På vilket/vilka sätt integrerar ni de globala målen i ert hållbarhetsarbete?

- Målen utgör en del av vår hållbarhetsredovisning
- Målen är integrerade i våra miljö-/hållbarhetsmål
- Arbetet med målen redovisas på vår hemsida
- Genom att delta i utbildningar och konferenser kopplat till målen
- De globala målen ingår inte i vårt hållbarhetsarbete
- Annat

4. Vilket/vilka av de 17 globala målen ingår i ert hållbarhetsarbete?

- Ingen fattigdom
- Ingen hunger
- Hälsa och välbefinnande
- God utbildning för alla
- Jämställdhet
- Rent vatten och sanitet
- Hållbar energi för alla
- Anständiga arbetsvillkor och ekonomisk tillväxt
- Hållbar industri, innovationer och infrastruktur
- Minskad ojämlikhet
- Hållbara städer
- Hållbar konsumtion och produktion
- Bekämpa klimatförändringen
- Hav och marina resurser
- Ekosystem och biologisk mångfald
- Fredliga och inkluderande samhällen
- Genomförande och partnerskap

5. Hur arbetar ni konkret med de globala mål som ni valt att fokusera på? Var vänligen ange exempel från den egna verksamheten.

Fritext:

6. Arbetar ni med de nationella miljö kvalitetsmålen?

- Ja, de nationella miljö kvalitetsmålen är en viktig del av vårt hållbarhetsarbete
- Ja, vi har kopplat samman vårt arbete med de nationella miljö kvalitetsmålen med de globala målen
- Nej, vi arbetar inte med de nationella miljö kvalitetsmålen

7. Om ni har kopplat samman de nationella miljö kvalitetsmålen med de globala målen, vilka av nedanstående mål har ni i så fall kopplat till det övergripande svenska miljö kvalitetsmålet (generationsmålet)?

- Ingen fattigdom
- Ingen hunger
- Hälsa och välbefinnande
- God utbildning för alla
- Jämställdhet
- Rent vatten och sanitet
- Hållbar energi för alla
- Anständiga arbetsvillkor och ekonomisk tillväxt
- Hållbar industri, innovationer och infrastruktur
- Minskad ojämlikhet
- Hållbara städer
- Hållbar konsumtion och produktion
- Bekämpa klimatförändringen
- Hav och marina resurser
- Ekosystem och biologisk mångfald
- Fredliga och inkluderande samhällen
- Genomförande och partnerskap
- Vi har inte kopplat samman de globala målen med generationsmålet

8. Hur upplever ni att arbetet med att integrera de globala målen på en nationell nivå har varit (t.ex. att länka dem till ert arbete med de svenska miljö kvalitetsmålen)?

- Svårt
- Stundvis komplicerat
- Genomförbart
- Enkelt
- Problemfritt
- Ej tillämplig

9. Hur följer ni upp/planerar att följa upp ert arbete med de globala målen?

- Genom att årligen redovisa nyckeltal kopplat till samtliga 17 globala mål
- Genom att årligen redovisa nyckeltal kopplat till några av de globala målen
- Genom att årligen skriftligt (t.ex. på webben) redovisa hur vi arbetar med de globala målen
- Vi är ännu inte klara över hur vi ska redovisa vårt arbete med de globala målen
- Annat

Appendix C. Answers from the survey

Figure	Number of companies
Figure 1. Represented sectors	
Retail	1
Pharmacies	2
Energy	3
Transportation	3
Food	5
Services (banks, insurance, hotels, communication)	6
Figure 2. Are the Sustainable Development Goals (SDGs) included in your sustainability work?	
Yes	18
No	2
Figure 3. In what way/ways do you integrate the Sustainable Development Goals in your sustainability work?	
The goals make up a part of our sustainability report	9
The goals are integrated in our environmental/sustainability goals	13
The work with the goals are reported on our website	4
By participating in trainings and conferences that are connected to the goals	8
The Sustainable Development Goals are not included in our sustainability work	1
Other:	8
<i>"Vi relaterar till målen i vårt övergripande hållbarhetsarbete."</i>	
<i>"Vi följer inte upp den påverkan som vår verksamhet har på SDG:erna kvantitativt. För nuvarande är kopplingen till målen på en mer intuitiv nivå baserat på de delmålsbeskrivningar som FN har."</i>	
<i>"Vi kommer kommunicera mer efter hand. Vi har gjort första matchningen på var vi bidrar bäst."</i>	
<i>"Inom EU finns nya riktlinjer för hållbarhetsredovisning för börsnoterade bolag. Vi följer dem för 2017."</i>	
<i>"Inför framtagning av nya mål har vi gjort gap-analys avseende de globala målen och tagit hänsyn till de globala målen vid utformning av våra mål."</i>	
<i>"Målen utgör ett av underlagen vid framtagningen av våra väsentliga hållbarhetsfrågor."</i>	
<i>"Målen är delvis grund för vår definition av vår del inom hållbar utveckling"</i>	
<i>"Målen är delvis överensstämmande med vår existerande miljöstrategi, och rapporteras därför i vår hållbarhetsredovisning etc."</i>	

Figure 4. Which of the 17 Sustainable Development Goals are included in your sustainability work?	
1. No poverty	4
2. Zero hunger	5
3. Good health and well-being	10
4. Quality education	3
5. Gender equality	14
6. Clean water and sanitation	5
7. Affordable and clean energy	8
8. Decent work and economic growth	15
9. Industry, innovation and infrastructure	12
10. Reduced inequalities	10
11. Sustainable cities and communities	9
12. Responsible consumption and production	13
13. Climate action	14
14. Life below water	2
15. Life on land	7
16. Peace, justice and strong institutions	6
17. Partnerships for the goals	9
Figure 5. Do you work with the national environmental quality objectives?	
Yes, the national environmental quality objectives are an important part of our sustainability work	4
Yes, we have connected our work with the national environmental quality objectives with the Sustainable Development Goals.	8
No, we do not work with the national environmental quality objectives	6
Figure 6. If you have connected the national environmental quality objectives with the Sustainable Development Goals, which of the following goals have you in that case connected the overall goal for the Swedish environmental quality objectives (the generational goal) to?	
1. No poverty	0
2. Zero hunger	4
3. Good health and well-being	4
4. Quality education	0
5. Gender equality	1
6. Clean water and sanitation	4
7. Affordable and clean energy	5
8. Decent work and economic growth	5
9. Industry, innovation and infrastructure	5
10. Reduced inequalities	1
11. Sustainable cities and communities	7
12. Responsible consumption and production	8
13. Climate action	5
14. Life below water	3
15. Life on land	5
16. Peace, justice and strong institutions	1
17. Partnerships for the goals	0
We have not connected the SDGs with the generational goal	11

Figure 7. How do you feel that the process of integrating the Sustainable Development Goals on a national level have been (e.g. linking them to your work with the Swedish environmental quality objectives)?	
Difficult	0
Occasionally complicated	2
Feasible	9
Easy	1
Smoothly	2
Not applicable	4
Figure 8. How do you follow up/plan to follow up your work with the Sustainable Development Goals?	
By reporting key figures annually that are connected to all of the 17 goals	1
By reporting key figures annually that are connected to some of the goals	5
By annually in writing (e.g. on the website) report how we work with the goals	3
We are not yet sure on how to report our work with the goals	8
Other:	1
<i>"Det saknas ännu uppföljningsbara indikatorer för hur företag ska leverera på både de globala målen och kopplingen till miljö kvalitetsmålet inkl generationsmålet. Stort fokus läggs vid policy-dimensionerna, som förstås är viktiga men företagets ambitioner är väl så viktiga och det finns idag få konkreta delmål med bäring på industrin."</i>	
3.2.1 Examples. How do you practically work with the Sustainable Development Goals that you have chosen to focus on?	
By focusing on specific SDGs connected to our industry	2
In connection to the environmental management system	3
In connection to our environmental goals/key figures	6
Through strategies/programs that has been formed after e.g. gap-analysis's of the SDGs	3
By focusing on our own product and how it could be improved	3