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Master of Science Program in Service Management Logistics

# **Sustainable Supply Chain Management in an emerging country**

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**The case of a global chemical manufacturer  
in Turkey**

**Master Thesis**

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## Abstract

### Keywords

Supply chain management (SCM), Sustainability, Sustainable development, Sustainable supply chain management (SSCM), Emerging market, Turkey, Case study

### Purpose

The author aims to gain a detailed understanding of the different supply chain actors' perspectives on sustainable supply chain management and its implementation in the process of a global chemistry manufacturer in Turkey. In order to identify what is missing and hindering the implementation of sustainability in SCM as well as the opportunities which arise out of SSCM for both company and country, the entire chemistry supply chain, including but not limited to, the Turkish transportation industry along with the political, economic and mental situation in 2014's Turkey are being explored and illustrated. A thorough interpretation of the findings will be followed by concrete recommendations for SSCM implementations in emerging markets.

### Research Methods

The research is conducted as an inductive qualitative data collection with case study methodology being applied as strategy. During the data collection phase the researcher acts as a representative of the focal chemistry manufacturer, gaining inside knowledge and experience within the SCM system itself. The empirical data is gathered through open, in-depth interviews with various participants along the supply chain.

### Findings

After introductions to case study relevant terminology and special circumstances in emerging markets, in terms of sustainable development and supply chain management, related shortcomings of standards, rules and processes in emerging markets, compared to developed countries, are explained. These are followed by the presentation of rich findings from various participants of the supply chain of the focal chemistry manufacturer in Turkey. Involved are participants as well as external, observing institutions such as consultancy agencies. The findings include opportunities, current obstacles and necessary actions related to the implementation of sustainable supply chains in Turkey. Propositions summarize the findings; key issues and patterns are highlighted, which lead to a summary and conclusions, as well as suggestions for further research directions.

### Originality/value

This master thesis provides findings from field research about the awareness, acceptance and prioritization of sustainability in a SCM network in an emerging market. The rich data demonstrates drivers for, opportunities through and challenges for the implementation of SSCM from a practical perspective as new theory and basis for further research.

## Table of Content

Abstract .....	I
Table of Content.....	II
List of illustrations .....	IV
List of abbreviations.....	V
1. Introduction .....	1
1.1. Background .....	1
1.2. Problem description and research question .....	1
1.3. Purpose .....	3
1.4. Focus .....	3
1.5. Structure of the thesis .....	3
2. Methodology .....	5
2.1. Case study research .....	5
2.1.1. Reasons to choose case study as methodology .....	6
2.1.2. Case study design .....	7
2.2. The Research Process.....	8
2.3. Interviewing .....	10
2.3.1. Different types of interviews.....	12
2.3.2. Interview styles used for the in hand master thesis .....	13
2.4. Content analysis of literature.....	16
2.5. The data collection and analysis.....	17
2.5.1. Background of the data collection.....	17
2.5.2. The analysis strategy .....	19
3. The frame of reference .....	23
3.1. Emerging market .....	24
3.2. Supply Chain Management .....	25
3.3. Sustainability.....	28
3.4. Supply Chain Management in an emerging market .....	30
3.5. Sustainability in an emerging market.....	32
3.6. Sustainable Supply Chain Management.....	34
4. Case Description .....	37
4.1. BASF SE – A global chemistry manufacturer .....	37
4.1.1. Sustainability approach within BASF SE .....	38

4.1.2. Supply/Value Chain perspective and sustainability within BASF SE .....	38
4.2. Turkey – A regional business center .....	39
4.2.1. Environment perspective in Turkey .....	39
4.2.2. Logistics and infrastructure in Turkey .....	40
4.3. BASF Turkey – BASF as regional business center and location of research .....	41
4.3.1. The BASF supply chain in Turkey: Key principles .....	41
5. Findings from the case analysis .....	44
5.1. The awareness within the supply chain of the focal company about general sustainability (direct SCM actors’ perspective) .....	44
5.2. The awareness about general sustainability and sustainability in supply chains in the Turkish SCM industry, evaluated from a supply chain actor’s perspective (relative perspective) .....	46
5.3. Opportunities and drivers for implementing sustainability in a supply chain.....	49
5.4. Opportunities for Turkey emerging from sustainable supply chain management .....	51
5.5. Experienced challenges in implementing sustainable supply chain management and general challenges for SSCM in Turkey .....	53
5.6. Towards sustainable supply chain development in Turkey.....	56
5.7. Some further thoughts: Forwarding the “hot potato” of responsibility in terms of SSCM .....	60
6. Results and Discussion.....	64
6.1. Results, key patterns and answers to the research question .....	64
6.2. Distinctive features of SSCM implementation in an emerging market .....	66
6.3. Recommendations for actions towards SSCM development .....	72
7. Conclusion and recommendations for further research.....	78
Appendix .....	V
List of Literature.....	V

## List of illustrations

Figure 1: Research Design (Inspired by Saunders et al. 2009) .....	8
Figure 2: The Research Pyramid .....	18
Figure 3: The Research Focus .....	23
Figure 4: Supply chain process (Inspired by Scott et al. 2011).....	27
Figure 5: BASF sites in Turkey (BASF – Mutlu 2011) .....	41
Figure 6: BASF Supply Chain in Turkey .....	42
Figure 7: The BASF supply chain actors .....	43
Figure 8: Interconnectivity of factors and challenges .....	72
Figure 9: Factors and action groups of the establishment of sustainability .....	76

## List of abbreviations

3PL	Third Party Logistics Provider
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road (French: Accord européen relatif au transport international des marchandises Dangereuses par Route)
B2B	Business-to-Business
B2C	Business-to-Consumer
BCT	Business Center Turkey
C2C	Consumer-to-Consumer
CEFIC	European Chemical Industry Council
CO <sub>2</sub>	Carbon dioxide
CSR	Corporate Social Responsibility
EBIT	Earnings Before Interest and Taxes
ESG	Environmental, Social and Corporate Governance
GDP	Gross Domestic Product
HQ	Headquarter
HSE	Health, Safety and Environment
ISO	International Organization for Standardization
KPI	Key Performance Indicator
MENA	Middle East and North Africa
NGO	Non-Governmental Organization
SC	Supply Chain
SCM	Supply Chain Management
SQAS	The European Safety and Quality Assessment System
SSCM	Sustainable Supply Chain Management
UNEP	United Nations Environmental Program

## 1. Introduction

### 1.1. Background

The 21<sup>st</sup> century is hallmarked by constant growth and expansion. Production and economies are swelling, new markets are being developed; purchasing and distribution areas reach global size and personal demands and needs are still rising steadily (McKinnon et al. 2010). The warnings of saturation limits of the Financial Crisis in 2008 are forgotten and currently booming China emerged to a nation of global power (Tisdall 2014). Along with China many other emerging markets are flourishing, with raising production and raising demands.

As the earth and its resources are limited, a paradigm-shift occurred in recent years and with it an approach towards eco friendliness and sustainability emerged almost all over the world. Cheap production and transportation are enablers for global economic growth but also considered to be main triggers for pollution, emissions and carbon-dioxide production (McKinnon et al. 2010). Furthermore, huge, global supply chain-activities result in a lack of transparency and control, which can lead to bad working conditions and/or environmental harms, as some cases of world-wide operating supply chains showed recently (Seuring and Müller 2008).

The general interest in sustainability and environmental friendliness can be observed in various public sectors, literature and policies. Especially the “triple bottom line” approach, describing sustainable development in economic, environmental and social areas was highlighted positively in public opinions, management standards and political decisions. It was just a matter of time until the connection between supply chain management, the systematic, strategic coordination of flows across companies (Mentzner et al. 2001; Gold, Seuring and Beske 2010) and sustainability as simultaneous economic, environmental and social good will (Seuring and Müller 2008) was made. Best practice examples on the one hand, exploitation due to lack of control on the other hand resulted in public attention: Policies and stakeholders in many regions worldwide requested green and social performances of businesses that deal with those instruments. Hence, in most cases a general development towards sustainability was triggered by public and political voices (Linton, Klassen and Jayaraman 2007; Elkington 1997; Seuring and Müller 2008; Gold, Seuring and Beske 2010).

### 1.2. Problem description and research question

Based on the aforementioned desire for change, many Western, international and multinational companies aim to implement sustainable standards also in their operations and supply chains in other member states of the brand. In doing so, these focal companies, many of which are recognized all over the world, brand-owning and responsible about all connected activities, face problems in less developed countries or those with a different cultural background. These problems can have various origins, but in general the brand’s reputation is

in relation to the outcome of the supply chain performance (Gold, Seuring and Beske 2010; Seuring and Müller 2008).

Sustainable supply chain management in an emerging market is a value-creating network of efficient, physical, digital and financial flows between suppliers and end customers. It aims to optimize all activities along the value chain to reduce the current and future impact to environment and society by decreasing the creation of network by-products through a holistic, all activities-including approach. This sustainable supply chain is aimed to operate in an environment that is characterized by a fast growing economy with little industrial experience and high potential of growth. The circumstances are furthermore defined by political instability, inefficient bureaucracies, corruption, deficits in infrastructure and an underdeveloped awareness, education and valuation of environmental and social protection. Awareness is defined as “knowledge or perception of a situation or fact” and the “well-informed interest in a particular situation or development” (Oxford University Press 2014). It is also characterized by “having knowledge, understanding, appreciation, recognition, perception, consciousness, mindfulness, realization of, familiarity with, sensibility or attention to something” (Collins Thesaurus of the English Language 2002) characterize it. As there are widely differing levels of development, local conditions, as well as different business standards compared to developed countries, the implementation of sustainable supply chains is more difficult, complex and expensive than in industrialized economies (Oglesby 2007; Essential Finance 2003; Petraki and Zalewska 2010; Linton, Klassen and Jayaraman 2007; Gold, Seuring and Beske 2010; Matos and Hall 2007; Emmet & Sood 2010; Mangan, et al. 2012). Generally emerging markets are expected to create high economic growth. This means that demands for transportation, warehousing, shipment handling, infrastructure and services are rapidly growing, too, which in turn affects the impacts on environment and society (Scott et al. 2011).

The subject of this master thesis is the German integrated global chemical manufacturer BASF SE that intends to implement sustainable performances into its supply chain in Turkey. As the company’s mission statement “We create chemistry for a sustainable future” (BASF SE 2014, p. 2), as well as one of the four strategic principles, “we drive sustainable solutions” (BASF SE 2014, p. 4) illustrate, the corporate intention to operate sustainably is ambitious. However, diverse levels of professional knowledge and basic education among partners, varying levels of understanding about the need for sustainability among shareholders and less operational opportunities due to missing infrastructure characterize obstacles for the implementation of SSCM in Turkey (Manufacturer Interview 16). Hence, all current aspects and drawbacks of a potential implementation of sustainable supply chain management in Turkey need to be highlighted. Therefore, the research question for this thesis is phrased as:

*What are the opportunities and challenges that have to be considered by an organization, aiming to develop a sustainable supply chain in an emerging market and what is necessary for its implementation?*

Findings to this question demonstrate gaps between the focal company’s corporate global and the local sustainability approach which need to be bridged to succeed with a corporate vision.



This poses a challenge, as progressing towards more sustainable operations requires an understanding of the local situation and development background. This knowledge must be utilized to create a guideline, a time frame and a set of tools for companies to implement and measure the development.

### 1.3. Purpose

Answering the research question above leads to the goal of the thesis: Developing a detailed understanding of the different perspectives of the focal manufacturer's supply chain actors on sustainable supply chain management and its implementation in an emerging market will allow to derive conclusions about what is missing and hindering the implementation of sustainability in supply chain management as well as the opportunities arising from it for companies and for Turkey. Knowing the key parameters and patterns will enable the researcher to explain the current circumstances in Turkey and to phrase general propositions. Finally recommendations will be provided on how to overcome obstacles and necessary actions in order to achieve the implementation of sustainability in a supply chain in Turkey, as case for an emerging country.

### 1.4. Focus

The focus of this research is on social understanding and is influenced by a realistic social science perspective. The aim is to gain an understanding of how to reach the stakeholders, how to spread sustainability awareness and how to incorporate the knowledge of economic, cultural, mental and historic circumstances to lead towards sustainable supply chains, rather than dealing with technical or business-management approaches. These aspects will only be mentioned briefly, as they can be found in wide ranges of literature, while detailed, practical, empirical data is rare. As it is difficult to create a paradigm shift in an emerging economy, where it is necessary to understand the obstacles and drivers to change a system, empirical data will be collected in order to lead to necessary changes and actions that will support the development towards sustainability in emerging markets. Knowing the challenges will establish a basis for discussion, which can be used for propositions how to solve the occurring problems for further researchers.

### 1.5. Structure of the thesis

The structure of the thesis is as follows: After introducing the reader to the background, the problem and the purpose of the thesis, the methodology part will explain the research design and the reasons for selecting the applied research methods. An overview of extracted literature will introduce the reader to the relevant terminology from a theoretical perspective. Background information of the focal company, its processes and the current situation in Turkey will be explained in the case description. Subsequently, the outcomes of the empirical data collection will be presented and discussed. These findings will be used to create key

patterns and propositions about sustainable supply chain management in an emerging market, combined with suggestions for actions towards a sustainability development. A summary and further research recommendation will complete this master thesis.

## 2. Methodology

The purpose of the in hand research is to draw conclusions about challenges and opportunities, related to the implementation of sustainability in supply chain management, by developing a detailed understanding about the different focal manufacturer's supply chain actors' perspectives about sustainable supply chain management and its implementation in an emerging market. On hands experience of the current state of the chemistry branch, transportation market as well as political, economic and mental situation in Turkey, is valuable. As this includes individual data within a defined system – the supply chain of a global acting focal manufacturer in a special environment – the method of case study has been chosen as research instrument. The reasons of applying the case study method will be detailed in the following section.

### 2.1. Case study research

Case study can be defined as a strategy for conducting research involving an empirical investigation and documentation of a particular contemporary phenomenon or set of events within its real life context, using multiple sources of evidence (Robson 2002; Mitchell 2009).

It is characterized by collecting mainly qualitative, often unstructured data, and provides access to background knowledge and emergent properties of social interaction as well as causal mechanisms that create human behavior (Burgess 1927; Waller 1934; Connolly 1998). Even though quantitative material is possible, creating statistical relevance or empirical generalization is not the focus of case studies (Saunders et al. 2009; Mitchell 2009). Its aim is furthermore to develop knowledge and to gain a rich understanding of contexts and processes that have been enacted (Morris and Wood 1991; Saunders et al. 2009). Case studies are characterized by a special emphasis on the wholeness of the analyzed issue. Often cases are unique and particular (Mitchell 2009), hence multiple approaches like positivism, naturalism, interpretivism or constructionism can be involved (Hammersley and Gomm 2009). The term “case study” is not used in a standard way and is neither clear, fixed, nor limited by research boundaries. The method is furthermore influenced by approaches of other fields; same as the term “case” can be used in various ways (Hammersley and Gomm 2009; Yin 2003; Saunders et al. 2009).

By studying a certain set of cases directly, existing patterns, causal processes, linkages, as well as in- and outputs within a system can be discovered, understood and detected. Certain issues and states of minds can be identified by communication with and between involved actors. As actions, companies, institutions and societies are human processes, case studies make these phenomena understandable. Situations are described from the perspective of third persons (Waller 1934; Conolly 1998, Hammersley and Gomm 2009), which enables the identification of general theoretical principles (Mitchell 2009) by creating an authentic picture of the case (Hammersley and Gomm 2009). As all cases are influenced by a wider context which affects the involved protagonists (van Velsen 1967), the description of a simple event enables to reflect particular circumstances that surround the research object. This pictures

insights of relationships among the component elements and enables space for interpretation (Hammersley and Gomm 2009).

Znaniecki wrote that there is “always something to learn about individual data: concrete reality, as we have said, is an inexhaustible source of new knowledge” (1934 p. 250). This states that case studies can capture unique characters of situations, people, groups, companies or industries, which does not necessarily include generalization, typification or categorization of the issue. It is furthermore aimed to represent special “own terms” of the case in an authentic way, which can be called “symbolic truth” (Simons 1996; Kaplan 1964). To achieve this “symbolic truth”, the researcher should not act authorial, but instead leave the case representatives and participants the possibility to express the case’s unique character, perspective and opinion themselves. The interviewed persons should therefore speak freely rather than being guided by the researcher (Hammersley and Gomm 2009).

Case studies are not defined by the amount of cases, but by the depth of investigation. Many times, only a small number of cases or even a single case is being analyzed with a high level of depth and a wide range of features, to capture its uniqueness. Theoretical conclusions are being drawn afterwards, as case study, as case study methodology enables to provide answers to questions that include “why”, “how” and “what”. Therefore, it is an excellent tool for exploratory and explanatory research that tells stories and reasons of certain issues (Mitchell 2009).

### **2.1.1. Reasons to choose case study as methodology**

The reasons for choosing case study strategy as methodology for this research results from the target of the in hand master thesis, to gain a “detailed picture of Turkey, its current chemistry branch, transportation market as well as political, economic and mental situation” and the general advantages of case studies. As the stated aspects are both created and influenced by human actions and processes, case study methodology delivers the suited frame to gain a clear description (Waller 1934) and to draw an authentic picture of the case (Hammersley and Gomm 2009). Furthermore, case studies enable access to related knowledge, mechanisms and causes of human behavior (Burgess 1927; Waller 1934; Connolly 1998), which captures the unique situation and special features of the case (Mitchell 2009; Simons 1996). In this ‘case’, the chosen methodology enables the researcher to research within the SCM system, as a representative of the focal manufacturer, rather than an external individual. As the in hand case is related to the current situation in the supply chain of a specific company in an emerging market, the situation is considered as unique circumstance. As case studies deliver, as mentioned, answers to “why”, “how” and “what”-questions (Mitchell 2009) and as the formulated research question deals with the aim of discovering obstacles, opportunities and necessary actions towards the implementation of Sustainable Supply Chain Management (SSCM) in a specific environment, the method delivers the right tools to disclose answers and causal mechanisms (Connolly, 1998). As this research is exploratory and explanatory and aims to create new theory (Hammersley and Gomm 2009; Saunders et al. 2009), case study is the right choice of instrument. By using case study methods, knowledge and understanding of

the related contexts will be achieved (Morris and Wood 1991; Saunders et al. 2009) to activate new issues and their related causes (Waller 1934). As Robson (2002) and Mitchel (2009) are cited in the opening sentence of this chapter, a “real life context” instead of fabricated theory is given: By analyzing the current awareness, opportunities and obstacles of the implementation of sustainable supply chains in Turkey, causal issues, bearings and barriers for emerging markets towards the development of new standards, procedures or paradigms will be discovered (Morris and Wood 1991): “Clearly one good case can illuminate the working of a social system in a way that a series of morphological statements cannot achieve” (Gluckman, 1961, p. 9).

As the reasons for applying the case study method in this research were demonstrated, the following chapter will describe the case study design.

### 2.1.2. Case study design

There are two main case study strategies mentioned in literature: multiple and single approach. These can be distinguished by their depth of research, as holistic or embedded analysis. In this study, the single approach has been chosen, as a critical and unique case was analyzed. Analysis of sustainable transportation in Turkey has been few and far between. The actual case is strong, as Turkey is being considered one of the most emerging and developing markets in Europe and the world. The current status quo will not last a long time (Datamonitor 2012). The researcher has the unique opportunity to work for the focal company, which allows involvement, observation, access to data and infrastructure, as well as benefits of contacts to a wide range of partners, suppliers and customers. The research is considered as single case of a focal manufacturer as context with a holistic view, embedded to sustainable supply chain management as unit of analysis. There is no further comparison to other cases – so there is no multiple-study given (Hammersley et al. 2009). Instead, the findings provide a detailed basis which enables other researchers to conduct further studies, using the material for generalization. The case has a holistic attitude, since as many aspects as possible are embedded in the thoughts: various involved departments, stakeholders, or political, economic and partly mental circumstances (Yin 2003).

The general overview of the research design is visualized in Figure 1: *Research Design* and provides a summary of the following paragraph states in detail. It visualizes the research focus, which is defined by the context (BASF), the case (Turkey as emerging market) and the unit of analysis (Sustainability in supply chain management). The rings indicate the level of detail in the research design and process<sup>1</sup>: The general realistic philosophy, the describing and explaining approach, the research strategy and the limited time frame of the data collection. In order to collect the necessary data, the qualitative interview approach was chosen. The collected findings will point out challenges and opportunities, which can be used for generalization or further research.

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<sup>1</sup> While their form has no special meaning.

**Research Design**

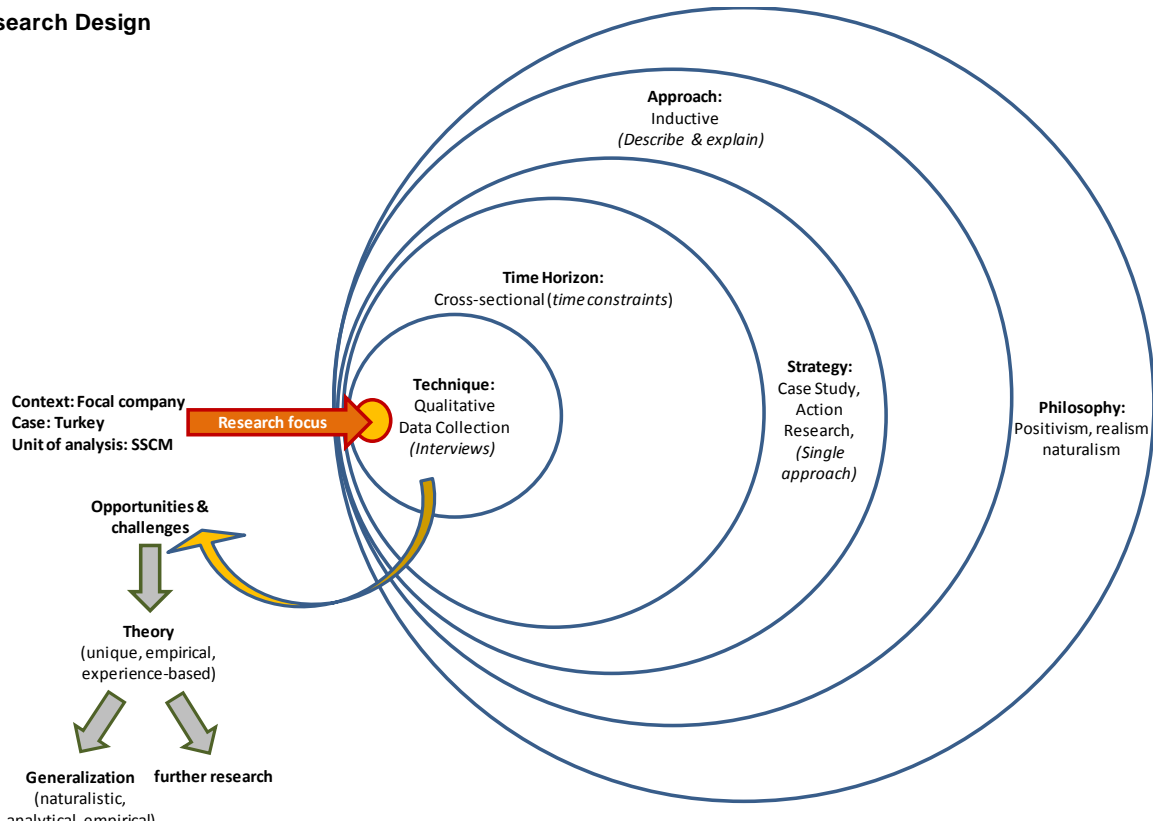


Figure 1: Research Design (Inspired by Saunders et al. 2009)

**2.2. The Research Process**

Even though the issue is a single case study, it provides the basis for further analysis or conclusions about general types of the phenomenon. The research delivers logically and analytically achieved findings which can be applied to other comparable countries or multinational concerns, even though it was decided against a statistical analysis (Mitchell 2009; Yin 1994).

According to prevalent literature, there is no need to create general valid findings, as their value is enduring and context-free. “General” means universal, not bound to time and space and regularly valid – making the generalization of data very difficult (Kaplan 1964; Hammersley and Gomm 2009). Additionally, decent and intensive research is only possible if preceded by long and highly intensive examination. Hence, generalization “comes late” – if it is achievable at all, (Lincoln and Guba 2009) as there are always unique factors and local conditions involved. Despite the difficulty or even impossibility of generalizing data, it is crucial that it can be used by third persons, e.g. for further research. The achieved data of this research is unique, particularized knowledge that can be used further on (Kaplan 1964; Hammersley and Gomm 2009). As there are two kinds of generalizations, one rationalistic, law-like, one intuitive, empirical and based on personal experience, known as naturalistic generalization, the later stated findings represent the second category of generalization (Lincoln and Guba 2009).

Thus, statistical inference was not invoked at all. Instead, validity and extrapolation of the findings were achieved through argumentation and linking to related literature (Mitchell 2009), making the data useable for transfer terms: Transferability means the connection of two different functions that fit in their contexts with each other (Lincoln and Guba 2009). Additionally “case studies [...] are in harmony with the reader's experience and thus to that person a natural basis for generalization” (Stake 1980 p. 5). This will enable to create a general understanding and awareness among readers. Summarized, it can be said that case study findings are a different kind of general conclusions compared to survey data: ‘analytical’, not ‘empirical’ generalization; ‘logical’ rather than ‘statistical’ inference. Not the content is important rather than the use of data that supports theoretical conclusions (Mitchell 2009).

To achieve valuable data, to explore or to challenge existing theory, as well as to provide sources for new research, various collecting techniques and multiple sources were applied and combined in this case study (Saunders et al. 2009).

To gather data, the practice of *action research* was applied to this work, as the change towards sustainable performances is planned by the focal company while the whole environment of the emerging Turkey is changing. The researcher interacted, as mentioned, as part of the focal manufacturer with stakeholders and informants and therefore gained first-hand material.

The character of the research can be illustrated in four main aspects:

### **I. Research in action**

As the final aim of the focal manufacturer is to implement sustainability in its Turkish supply chain system, an aspect of change is given, as sustainability is a new aspect within Turkey. Furthermore, the country at the Bosphorus is considered as a converting, emerging country itself, which implicates general change within the area. Both aspects are requirements for a research action: change of the status quo (Coghlan and Brannick 2005).

### **II. Involvement of practitioners in the research**

The target of this research was to create a close collaboration with employees of the focal company, forwarding agencies, suppliers, partners, NGOs and external consultants. The researcher acted as part of the team and met partners as a representative of the focal company. This enabled him to gain access to data, documents, SCM processes and therefore an inside view of the situation, rather than observing the activities as passive stranger from outside (Eden and Huxham 1996; Coghlan and Brannick 2005).

### **III. Action Research Spiral**

An iterative process of diagnosing, planning, taking action and evaluating towards the work's purpose/objective, *Action Research Spiral* was applied (Robson 2002). Analysis of acquired facts constantly led to further action planning which then defined the next step of research (Cycle 1). The following further cycles took the previous findings into account and shaped the

new progress... (Cycle 2, 3, ...). The qualitative data collection started with employee interviews, to gain a general overview of the situation (Cycle 1). Cycle 2 was used to interview SCM involved parties about their specific experience and Cycle 3 took observing, external institutions into account. The questions were adjusted during the data collection phase according to account for newly gained knowledge. Additionally, parallel reading of literature, corporate material and Turkey related data enriched the knowledge of the researcher steadily. After interviewing suppliers, forwarders and customers, the findings were discussed with an NGO and consultants. This last part was included to tighten the findings, to debate about key issues and to formulate ideas towards possible solutions, with acquainted experts as discussion partners.

#### **IV. Future meaning beyond the current project**

The aspect of future meaning is common for the development of new theory, as knowledge from the current research can be transferred to posterior contexts or issues (Eden and Huxham 1996). The same applies to the case study at hand, as in the first instance a set of obstacles, opportunities and best practice towards sustainable supply chain establishment is revealed. This implied a focus on involvement of the researcher, practitioner incorporation and “how”-questions (Schein 1999). The focus was on development towards the focal company’s midterm purpose of SSCM in Turkey and to assist the perceiving, understanding and succeeding in improving the situation. Generally, elaborated information based on the findings will be provided to the focal company and interested people for further usage and continuative investigation (Stake 1980).

After the manner of collecting data was described, the following chapter is devoted to the main method of collecting data in this research: interviewing.

### **2.3. Interviewing**

An interview is one of the most elementary research methods of collecting data (Marvasti 2004). The idea is simple: In face-to-face conversations, interviewees answer meaningfully to questions. Compared to normal conversations, interviews are based on assumptions, which the interviewer wants to constitute (Marvasti 2004). Modern research interviews have three theoretical basic characteristics:

1. Interviewees share common experiences which can be proven by asking randomly chosen candidates. Out of this, a general idea about the “average opinion” can be constructed.
2. During the interview a kind of leader-follower-concept is developed: The interviewer asks questions which are answered by the interviewee. The interviewer chooses topics, relevance and order of the questions; while the interviewee answers comprehensively, reasonably and truthfully. This becomes a continuously exchange through the whole process.



3. Respondents are carriers of knowledge: The researcher has to animate the interviewee by asking the right questions in order to produce useful knowledge-delivering answers (Marvasti 2004).

There are two other main characteristics of interviews:

#### I. Interviews are seen as interplay of knowledge-creation between two parties

An interview is an active process which includes two or more people who interact on a collaborative basis (Fontana and Frey 2005), also seen as a “partnership on a conversational research journey” (Miller and Crabtree 2004, p. 185). That’s why it is important for research interviewers to consider that every interviewee delivers knowledge. Everything can be relevant for the research results – so it is important to take every participant serious. To get her or him to partake in the knowledge production it is important to commit oneself to the interviewee – through negotiations and agreements (Koro-Ljungberg 2008; Miller 2000). The developed knowledge is the core source which makes it possible to understand social reality, changes and processes (Koro-Ljungberg 2008; Miller 2000). Therefore, interviews themselves can be seen as an act of creating social knowledge (Holstein and Gubrium 2003).

#### II. The research-results can vary

As stated before, interviews are reality-constructing and interactional events during which interviewer and interviewee create knowledge in a value-co-creational way: “Knowledge is interactive, co-constructed and negotiated, as well as historical, situational and changing, and thus difficult to duplicate” (Schwandt 1998, p. 432). Knowledge can be achieved by communities of meaning-making. Each construction of meaning is situated and depends on the context. Therefore, knowledge is always remade, continuously shaped and developed. The knowledge of interviewees can be influenced and limited by cultures, social interactions, social expectations, norms, values and beliefs. These make them look through a particular lens with which they see the world (Koro-Ljungberg 2008). So the statements of a person can change depending on moods, influences and stages in the knowledge development process. Following, the truth of statements in interviews can vary due to the interviewee’s individual life-experience. But they are still valid and noteworthy because they deliver the current “truth” – as the current state of knowledge about sustainability within supply chains in Turkey (Miller 2000).

The interviewer has the leading part in an interview. He dominates the interview in the way that he chooses the questions and the time of asking them during the conversation. He also has to keep costs, time, place, taping and transcription in mind (Miller 2000) and has to consider the above mentioned possible impacts to the respondent’s will to answer his questions. Furthermore it’s him who has to analyze and interpret the data (Kvale 2006). So, the interviewer has to be aware about his research goal, the research concept, its structure and the used methodology in order to achieve his targets. The type of interviews plays an important role here.

### 2.3.1. Different types of interviews

Various types of interviews can be applied for different purposes. In this master thesis a mix of different interview types was chosen. Therefore, the most important types are explained in the following paragraphs.

1) Structured Interview: This is the most commonly used interview form in social science. It is a rigid, inflexible form of constant question-answer-procedure and was used to interview large amounts of candidates, while using statistical analyzing operations.

2) Unstructured Interview: Unstructured interviews are less planned, follow less stringent rules and are mainly open-ending. They allow fluid interactions between interviewer and interviewee and concluding, enable the interviewee to elaborate own or aspects without guidance. Unstructured interviews provide a general direction of the underlying topic and leave the interviewee room to tell his/her own experience. Sometimes unstructured interviews are called “talking”, regarding to their lack of formalities, minimalistic structures and conversational style (Marvasti 2004).

3) Semi-structured interview: Semi-structured interviews combine aspects of the structured and the unstructured interview: They don't force the interviewee to a specific question schedule or time and are designed to spark open, wide answer-opportunities. The goal is to gain deep information, which is guided by the respondent himself. Furthermore, semi-structured interviews can be seen as a checklist of points which need to be covered during the conversation, whether or not all questions have been asked (Miller 2000). When using semi-structured interviews to go deep into details, they are called in-depth-interview. In-depth-interviews deliver authentic data through deep dispute of the topic. They allow illustrating the matter from the interviewee's point of view and enabling an evaluation of his or her ideas. They provide access to hidden knowledge and to a deeper, multi-perspective understanding of the topic (Johnson 2002; Marvasti 2004). By not limiting the range of answers for the interviewee, the respondent can freely express his thoughts and ideas and the researcher can gain multiple and sometimes conflicting answers about the topic he is interested in. This leads to a better quality of results (Marvasti 2004).

4) Focus group interview: The questions are asked to different respondents at the same time, to start a discussion among them and to gain knowledge about the meaning and positions of the different groups. It is also possible to conduct focus group interviews in structured and unstructured manners. The advantage of focus group interviews is that different people can share and discuss a specific topic with each other. A different result compared to single-interviews will be achieved in this manner. Focus groups can stimulate and elaborate participating individuals in creating knowledge. On the one hand it's always possible that individuals act too dominant. Furthermore, it is possible that participants avoid partaking in the discussion of sensitive topics; that the presence of certain participants influences others and that the following group dynamics occur (Marvasti 2004; Fontana and Frey 2000).

### 2.3.2. Interview styles used for the in hand master thesis

For the conducting of this master thesis, various interview styles were used according to the situation in which an interview was offered by the different supply chain stakeholders. In general different focus groups were chosen. So interviews were held with all entities of the supply chain. This means that different representatives of suppliers, the focal manufacturer, customers, transportation providers, as well as consultant agencies and a non-governmental organization (NGO), symbolizing the surrounding affected parties, were interviewed. The aim was to create a holistic perspective of all involved units along the value chain.

According to the offered appointments the interview styles were chosen. Mainly, single interviews were conducted, while group interviews were rare. The general design of the interviews is described as follows:

The interviews were semi structured along a guideline, to lead towards the desired outcome and information, flexible to the process while still allowing reacting to changes in the conversation. Hence, a set of questions was created before the interview. According to the conversation's development the questions were asked, logically fitting to the current topic and aiming to gain deep information and experience for the researcher. The questions started generally and got more focused by time. Most interviews were held face-to-face and some were conducted over the internet using video conferencing technology.

The depth and level of detail-questions rose during the research period. Employees of the focal company were the first to be interviewed with a series of standardized questions to gain a general understanding of the awareness of sustainability among the employees, as well as a first impression about the mentality, circumstances and awareness in the Turkish market. During the course of the interviews, the questions changed according to the interviewees and according to specific interests the interviewer had in terms of the entity's role in the supply chain. This determined depth and detail levels of the questions, according to the hypotheses that the interviewer drew on every stage of the research.

Generally, dynamic, semi-structured interviews based on interaction between both conversation parties were chosen. Representatives from different sectors were interviewed to gain clear knowledge about all existing interests and opinions along the chain. As the thesis' final aim is to create a brief general guideline about actions to implement sustainable supply chains in emerging markets, this method was chosen to enable an open, natural and inspiring exchange about experience and market assessment between the interview partners. The method was chosen to analyze consciousness and attitude towards sustainability and to compile possible challenges and benefits of SSCM for the Turkish market. The target was to leave the interviewees enough room to answer the questions themselves, without being led or biased (Barbour, 1999; Kevern and Webb 2001; Langford and MacDonagh 2003; Reed and Payton 1997; Carlock and Perry 2008; Hall 2001; Andic et al. 2010). This created an understanding of key issues of the current Turkish business attitude as well as actual and historical background information in terms of economic, political, legal and cultural issues in Turkey. It was used as starting point of the research as well as a basis on which to develop further ideas of investigation. Therefore, direct questions were avoided in early-stage interviews and were held back till the end of the following meetings, in terms of specific

topics. Most interviews were recorded. There was no focus on emotions in this research, as this master thesis is not considered as a social science inquiry rather than a business case (Marvasti 2004).

The characteristics of the interviewees can be described as follows: The first decision to interview all sectors of the supply chain was seen to be beneficial to understand the background of the participants along the supply chain as well as their experience and opinion about benefits and obstacles of sustainable supply chain operations. The research was conducted to start with the awareness of sustainability at the source of the investigation: the focal company. Here, the main characteristic was that all employees chosen to contribute to the research were officers from departments dealing with supply chain management. So, interview partners from e.g. supply chain management, transport service procurement, customer service or site logistics management were selected. In addition, colleagues from strategic or environmental responsibility extended the selection, to gain a broader view of the issue. In general, a mix of four management ranks from 1<sup>st</sup> Line to Operations was selected, to measure the degree of sustainability awareness on the different employment levels. This was arranged to be able to understand the awareness of general sustainability in the focal company which in turn expects this knowledge from their partners. Also, it was possible to see if the level of awareness differed between various levels of management. The first stage of interviews enabled the researcher to gain the first impressions about the Turkish transportation market. 23 employees were interviewed in 21 interviews.

In the further development, the external interviews, the interview partners were not chosen, they were chosen according to their responsibility in the company and according to personal contacts of former interview partners, as it is difficult to gain time slots for interviews within the business world.

During the empirical data collection, interviews with seven service providers were held. Two companies were partners of the focal company; four were reached through personal contacts and one through the intercession of a business partner. The companies were selected according to the existing possibilities, which means according to contacts. All requested firms agreed to participate in the research. The selected companies represent a mix of small, local Turkish companies, middle-size international and Turkish enterprises, as well as globally acting transportation concerns. This enabled the researcher to draw a mixed picture of existing perspectives of the Turkish transportation market. Six out of seven interviews were held in person, one was answered by email. Two interviews were held in English, two in German, one was translated from Turkish and one interview was held in a mix of English and German. The last one was held in a mix of Turkish, German and English. The aim of the service provider interviews, as first focus group within the participating institutions (2nd stage), was to retrieve information about the Turkish transportation industry, the main operators of supply chain management, and their opinion on sustainable supply chain management in Turkey. Information about experienced challenges and advantages, as well as if and how their clients request and evaluate sustainable performances were of interest here. This included estimation about the general awareness within the Turkish industry and the

Turkish transportation market when it comes to sustainable performances. Finally, the author asked about sustainable performances in the enterprises themselves.

Four direct suppliers of the focal manufacturer were interviewed regarding their implementation, perspective and activity in sustainability. The companies represent the chemical industry, a textile and safety material agency and a packaging supplier. The three companies are producers, while one deals with import and exports. All companies do international business and three firms are Turkish establishments. As the focal company requests certain standards, summarized in the Supplier Code of Conduct<sup>2</sup>, trying to understand the level of awareness and understanding of these direct suppliers was the main focus. Four out of five suppliers followed the interview invitation. The interviews took place in person and in the focal company's head quarter in Istanbul.

During the previous interviews with employees of the focal manufacturer, the transport providing service providers and the suppliers, one directly related issue was mentioned, which hindered the implementation of sustainability in the supply chain management industry in Turkey: the will to pay for a sustainable performance. As this demand for payment is forwarded downstream from stage to stage along the material flow of the supply chain, it is obvious that the last institution, the customer (in this case: the business-to-business customer) represents the final institution that decides about paying for sustainability and therefore triggers its development. Therefore, the aim of the customer interviews was to understand their demands, requirements and their will to pay extra costs. Three out of five companies accepted the request for a meeting. The first firm was a UK based, multinational consumer goods producer for health, hygiene and home products, which produces in more than 60 countries, sells in more than 200 countries and which investigates in different CSR-related issues. The second one was a Turkish end product distributor of the focal manufacturer and the last company was a multinational manufacturer of hygiene products, based in France. All meetings were held in person and two of them took place in the production sites of the producers.

In order to gain an impression from an external, observing and country-familiar perspective, stage 3 of interviewing provided expertise and knowledge from independent consultants. This stage aimed to support key issues, to answer further questions of the researcher and to provide, final, developed knowledge. Therefore, two consultant agencies were contacted and both accepted the invitation. One interview was held in person, one via Skype. Both consultants are specialized in sustainability and create reports for all kind of companies in Turkey. One consultant focuses on the social aspect of sustainability.

Additionally to the consultant opinions, an NGO statement was considered as an independent, observing source which knows the region. Three NGOs were contacted; one, environmental-active NGO agreed for a Skype conversation. The interview was held as a pure open ended, unstructured interview.

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<sup>2</sup> Accessible here: <http://www.basf.com/group/corporate/en/about-basf/procurement/Verhaltenskodex/Verhaltenskodex>

The focus group interviews included questions about the own awareness, experience and opinion about sustainability, as well as the company's contribution and point of view on the issue. Furthermore, general questions about the Turkish market, obstacles and difficulties that could hinder the development of sustainable operations in Turkey were part of the conversations. All interview information and background aspects about the interviewees' characteristics can be found in Appendix 2.

As Istanbul was the main research location and is the head quarter of the focal company as well as the economic center of Turkey, most activities took place around the Bosphorus metropolis. In total, 43 interviews contributed to this master thesis. The interviews took place in the manufacturer's head office (26), the manufacturer's production sites (5), external offices (5), external production sites (2), in restaurants (2), via Skype (2) and in a written, digital form (1). Further visits contributed to the researcher's understanding about the Turkish supply chain industry: The production sites in Dilovası (2) and Çayırova, the Halkalı rail terminal and custom clearance, the transport fair in Gebze (2), the only chemistry container cleaning facility in Turkey as well as the main service provider's warehouse and garage (2). In March 2014, the researcher participated in the focal manufacturer's internal European Site Logistics Sub regional Meeting EAWA in Istanbul. This conference widened his understanding about circumstances in other emerging countries like South Africa, Dubai, Russia and Ukraine.

## 2.4. Content analysis of literature

A literature review/content analysis was used to gain a general knowledge about the used terminology, sustainability and supply chain management as well as the background of Turkey and its historic, geographic, economic, political and cultural background, visible in the case description. A content analysis is the methodologically controlling of textual and other data to gain deep, detailed knowledge in the area of research (Mayring 2000). By doing a qualitative content analysis, empirical step-by-step methods are used to analyze literature, which allows for an interpretation of the existing material and contents (Mayring 2000).

Content analysis was used to compare the corporate and the national webpage of the focal manufacturer's website to gain an understanding of the different sustainability approaches in both business sectors.

Additionally, internal documents and material of external partners were worked through, using content analysis tools and methods. The results were used to contribute to the general understanding of the companies' activities in sustainability as well as the Turkish economy and transportation market.

The method of content analysis as theory is useful to validate qualitative gathered single case study data (Mitchell 2009). By applying theoretical perspectives to the unique data, sense is created from the case to analyze and explain it correctly in a wider, macro, or societal relevant context (Sharp 1982; Burawoy 1998).

## 2.5. Data collection and analysis

The first part of this sub-chapter demonstrates the background, strategy and aim of the data collection, the second part shows the analysis strategy.

### 2.5.1. Background of the data collection

The data contains material from various stakeholders involved in the supply chain of the focal manufacturer in Turkey, in order to represent a holistic perspective, including all involved opinions. Data collection can be divided in three stages, representing development of knowledge, understanding and growth of background information within the case study and the invested research time.

1. The first stage represents in-depth interviews with employees of the focal company in order to get an overview of the important issues to encounter during research. This can be categorized as essential contextual data (Saunders et al. 2009). Furthermore, a little side analysis was conducted in order to demonstrate an idea about the general awareness about sustainability among the focal manufacturer's employees, which was analyzed in a simple statistical way, based on counting. This statistic<sup>3</sup> allowed for a comparison depending on the management level and the position of the employees within the company. This was important for the researcher, in order to understand the degree of awareness within the focal manufacturer, which aims to create a whole sustainable supply chain. Furthermore it provides hints to the company in order to extend education and training about sustainability within the firm (Saunders et al. 2009).
2. The second stage can be described as data collection with stakeholders and partners that are actively involved in the supply chain processes in Turkey. These interviews were held as in-depth, open, semi-structured single and group interviews, usually with one and sometimes two representatives of different entities of the supply chain. This qualitative research was done in order to achieve important issues of actively involved participants of the supply chain industry in Turkey and their specific requests, demands, problems, hopes, wishes, as well as experience and evaluation about sustainability in Turkey (Saunders et al. 2009).
3. Semi-structured, qualitative group interviews built the basis for the third stage of data collection, too. They were mainly held with observing institutions like consultant agents and an NGO and were placed at the end of the research in order to achieve proofs and clarification of statements, tendencies and key issues about sustainability in Turkey. The aim was to receive expert knowledge of observing, educated and specialized experts that are familiar with the circumstances, the characteristics and the development of the Turkish market and its industry. It was aimed to get a wider meaning behind some of the data, to fasten the researcher's opinion and to get answers to some further questions (Saunders et al. 2009).

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<sup>3</sup> Available in Appendix 1.



The first stage of interviews was formulated in a broad way, while the intensity and directions of the interviews became more focused from stage to stage and was further on adjusted according to the results of every interview level (*Action Research Spiral* (Robson 2002)). Therefore, a pyramid-like structure can be drawn: The research started with the various opinions of employees of the manufacturer, to provide a basic knowledge to the researcher and became more and more sophisticated and specialized during the second stage and interviews, until the final conversations were held with generally informed, external, observing institutions like NGOs and consultants. The sequence represents the SCM downstream flow in some extent, too, as can be seen in Figure 2.



**Figure 2: The Research Pyramid**

Data collection started with an inductive approach, which allowed to explore; to see which themes or issues to follow up and concentrate on, to get hints about the awareness of sustainability in the focal company and the case country as well as to gain a first impression about the situation in general (Glaser and Strauss 1967; Schatzman and Strauss 1973; Strauss and Corbin 2008; Yin 2003). This approach was only chosen for the first stage of data collection, while from then on a process of constantly creating new targets, formed the following stages of research. Therefore, all data was analyzed during the collection and the results developed the conceptual framework for the next interviews (Saunders et al. 2009). The research started as an inductive, less structured and interpretative data collection towards a deductive, more formalized and more structured research that followed certain targets and questions (Saunders et al. 2009).

As common in research, the in hand data collection was limited in time: The empirical data was collected during three months. This constraint was related to the research contract with the focal company, visa limitations in the non-EU country Turkey and to the limited amount of lead time, defined by the university. Therefore, longitudinal studies and measurement of changes were not possible. Data collection and data analysis was achieved using cross-



sectional technique over three months. A statistic about the details of all interviews provides relevant further information about the gathering and analysis approach and can be found in Appendix 2.

### 2.5.2. The analysis strategy

Analysis means data reduction (summarizing and simplifying the data), data display (organizing, assembling and visualizing data in diagrams) as well as drawing and verifying of conclusions (Saunders et al. 2009). As the process of analyzing qualitative data begins already during data collection and continues afterwards (Kvale 1996), both activities of collecting and analyzing took place in parallel and influenced each other, as data collection, data analysis, development and verification of propositions are an interrelated and interactive set of processes (Kvale 1996). The inter-analysis between the different collecting stages shaped the direction of the following interviews (*Action Research Spiral*). This enabled further development, comparison and testing of arguments and statements (Saunders et al. 2009). During this process some of the themes, patterns and relationships that were extracted during the literature analysis phase before, became valid also for the case study (Strauss and Corbin 2008). Therefore, data was consecutively analyzed and its findings implemented in the subsequent data collection process. These insights shaped the following way of asking questions, the questions themselves and the goal of the different interview stages.

The non-standardized, guideline-oriented, qualitative research interviews were mainly recorded and notes were made for all of them. Some of the interviews were transcribed as a whole, which symbolizes a reproduced, written account of the verbal statements (Saunders et al. 2009), but as the transcribing of interviews is very time consuming – six to ten hours for every hour of audio recording (Saunders et al. 2009), it was abstained to transcribe all interviews. This was necessary as the existing research lead time was short and the transcribing of 43 open-ended, in-depth interviews would have been too time consuming, as more than 300 hours of work would have been necessary just to copy the interviews. Therefore, mainly the notes that were taken on-spot and parallel to the interview were used for the analysis. Still, all available recordings are stored by the researcher and would therefore be available for further analysis and more detailed investigation. However, as these notes represent the most important aspects, they can be equally be seen as those parts which are pertinent to the research (Saunders 2009) and represent therefore the most valuable data of the collection.

All interviewees and involved companies were anonymized, due to reasons of confidentiality. Some general descriptions about the companies provide an idea about their characteristics, which enables the reader to create his/her mental picture of the respondents and their answers. The collected data, as well as secondary data, like digital material, organizational documents, reports, websites and e-mails were shaped in order to analyze them (“cleaned up”), which means narrowed down to the main statements. The data was checked for spelling mistakes and sometimes translated from German or Turkish to English (Saunders et al, 2009).

Qualitative data is mainly non-standardized and complex in nature and following, there is no standardized way to analyze it either. Therefore, the main aspects of analyzing can be described as condensing (summarizing), grouping (categorizing) and/or restructuring (ordering) of meanings (Saunders et al 2009). For the in hand research a mix of these approaches was chosen. Therefore, certain analysis steps require structuring or formalization, while others don't, or for a different degree.

In the Analysis part of the master thesis, only the approaches of condensing, grouping and restructuring were chosen. The aim was to reproduce the data as authentically as possible and to present to the reader a genuine impression about the statements and the situation of the interviewed participants within the Turkish supply chain industry. This differentiated the analysis part from the discussion part, where further electronic data, web-based reports and interpretation were added in order to figure out the core issues, opportunities and obstacles of implementing sustainable supply chain management in an emerging market. For the Discussion, the stated data was used, interpreted and discussed, added by other gathered data, background information and theory (Saunders et al, 2009)

### **Presenting the qualitative data: condensing (summarizing), grouping (categorizing) and restructuring (ordering)**

- Summarizing of the key points that emerged from the interview notes and transcripts compresses long statements into briefer ones, includes the main sense and condenses the meaning of what has been said in just a few words (Kvale 1996). In case of this research, a short statement will provide a general answer to the question, summarizing the key propositions of the interviewees. In order to back up these statements, significant quotations are stated in order to provide original meanings. This variety has a selective, purpose-guided effect of reducing and rearranging the data in order to manage and to comprehend it (Saunders et al. 2009).
- Categorizing means to develop categories based on relationships and similarities. As some questions that appeared during the development included hypotheses, testing of those is possible. Furthermore, gained results can be used to draw conclusions and figure out the core aspects of certain groups and participants (Saunders et al. 2009). In order to provide a holistic, rich picture of the transportation market in Turkey and its various demands, the participants were categorized in six sub-groups, consisting of the supply chain entities of the focal manufacturer, forwarders, suppliers, customers, consultants and a NGO. Those represent the different categories of research focus groups.
- Following the category themes, the findings will be ordered and presented according to the group affiliation. This was done, as mentioned, to represent the different perspectives of the involved entities, to create a holistic perspective about the ability, the opportunities and the obstacles of implementing sustainable supply chain management in Turkey. This enables the reader to get a broad picture of the situation from various perspectives. Every one of the six interview parts represents a single step of development and understanding within the research. Therefore, is the level of in-

depth knowledge and investigation rising from step to step during the research. As the order of interviewing follows the supply chain downstream, the gained knowledge is rising with the stream.

- Uniting of data means to attach relevant, certain parts of statements to fitting categories in order to support the statement and to gather all opinions about a certain question. Therefore, descriptions about the background of the interviewed people, the companies and the circumstances of the interviews were provided. Additional information is stated and summarized in a figure, accessible in Appendix 2, in order to provide some more information and space for interpretation (Saunders et al, 2009).

The way in which the data is presented, offers the possibility for interested readers to dig deeper into the material as well as to consume reduced, summarized and simplified data, displayed as core statement. So, the summarized statements bring up the core elements, supported by quotations. A summarizing figure for every focus group contents all meaningful statements, accessible in a simple structure<sup>4</sup>. Additionally, the original notes of the interviews can be provided on request<sup>5</sup>. Finally, the full interviews are available as wave file. This enables both, time-dependent managers to get an overview about the issue, as well as interested researchers, to use the material for further research and a detailed dispute with the topic.

### **Narrative approach of analyzing**

Narrative analysis is used in order to explore linkages, relationships and reasons, obstacles as well as opportunities, based on socially constructed explanations by the interviewees. Different narrative accounts are analyzed and gathered within each stakeholder group. These are finally compared with each other. This approach has been used frequently in organizational research and therefore fits well to the in hand thesis (Saunders et al. 2009; Gabriel and Griffiths 2004). The narrative analysis has been chosen because, for data collected through semi or unstructured interviews, accuracy requirements are less important than the meaning, statements and illuminating, symbol-characterized issues such as organizational politics, culture and change, that are pointed out by the interviewees (Gabriel and Griffiths 2004). Consequently, such narrative approaches describe the meaning to facts, rather than produce facts and therefore allow for the creation of a meaningful analysis (Saunders et al, 2009).

In some parts of the analysis, aspects like the way how interviewees answered, the general impression that occurred due to the whole interview situation and the participant's attitude (non-verbal communication) influenced the researcher. This impression was used to lead towards an interpretation-like evaluation that cannot be understood by just reading the transcript (Saunders et al. 2009). Therefore, additional comments by the author, in brackets in italic provide some further hints for understanding<sup>6</sup>. Still, as mentioned before, the in hand research is solely focusing on the content-relevant issues of the interviewees rather than

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<sup>4</sup> Appendix 3.

<sup>5</sup> Due to company related confidential reasons.

<sup>6</sup> Only available in the fully transcribed interviews, by request.

spending much attention on the behavior, the way of answering or non-verbal communication<sup>7</sup>, like common in some social science research.

The answers were gathered and related to standardized questions (ordering). Even though most interviews were held as a conversation, that led towards the pre-designed questions, the structure that is provided in the Analysis part enables the reader to understand the contents of the statements better and easier. Furthermore, many statements overlapped each other. By assigning the jumbled answers to specific questions the concluding picture of the information becomes more valuable (Saunders et al. 2009).

In addition to the “normal” analysis an analysis about the level of understanding among the employees of the focal company was constructed. This was done in order to gain an impression of the level of understanding from the focal company’s point of view. It was considered as an interesting aspect, as sustainability is one of the core strategies of the company. Furthermore, the focal company aims to implement sustainable supply chain management in their processes. That means that the company expects the ability, understanding and investigation from third parties. Therefore, it was important to understand whether the employees of the focal company comply with the standards of the corporation themselves, before interviewing third parties, where sustainability is not a main concept. The results showed various knowledge levels among employees and hierarchical stages. From no understanding to detailed definitions and visions, everything was mentioned. All people knew the term, but application or further interest was just given by about half of the interviewees. The detailed analysis can be found in Appendix 1<sup>8</sup>.

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<sup>7</sup> Like laughter, breaks or nervous actions.

<sup>8</sup> Not available due to confidential reasons by the involved interviewees.

### 3. The frame of reference

The in hand master thesis aims to gain detailed data through case study methodology. The target is to generate an understanding about opportunities and obstacles towards the implementation of sustainable supply chain management in an emerging market – in this case, of Turkey. To provide the reader with an understanding about the most important terminology to fully understand this research, the following chapter informs about the relevant key notions. To offer the reader a general overview about the integrated terminology, as well as the focus of research, Figure 3, illustrates the concept for an easy understanding: According to this layout, three main terminologies build the base of the frame of reference: emerging market, supply chain management and sustainability (blue circles). As these aspects meet in the interface of the analyzed case, there are certain connecting points, where different aspects are linked with each other (grey triangles) and where a special situation appears: The point where all aspects meet is the focus of interest of this master thesis.

#### Research Focus - Research relevant terminology

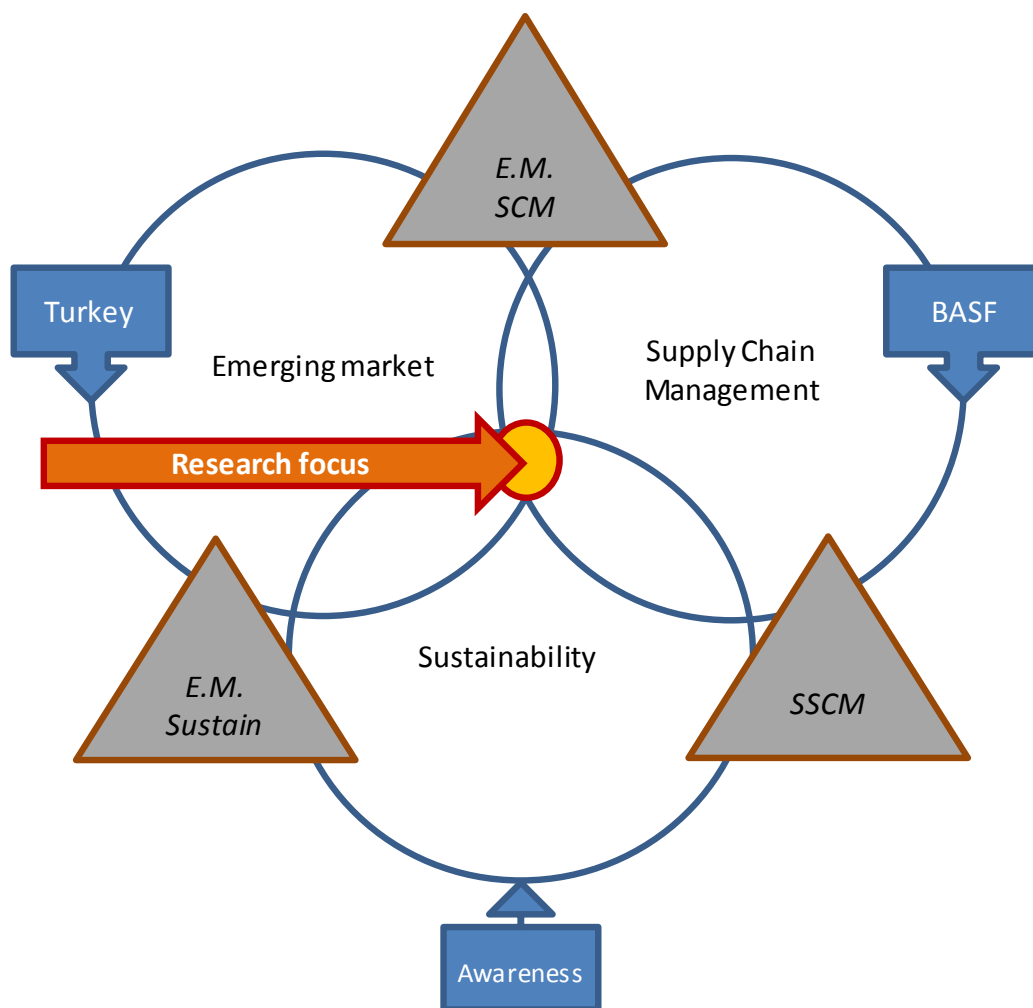


Figure 3: The Research Focus

### 3.1. Emerging market

An emerging market can be defined as a country that attempts to transform and improve its economy to the level of the world's advanced nations. Emerging economies are referred to be financial markets of developing countries that gained financial support by international institutions. This allows the market to be more competitive and open to foreign investors, with the goal to create a strong economy. Emerging markets offer high return on investment rates in short-term cycles. Therefore, they are interesting for investors and concerns, especially from industrial countries. The increase of new shares and a high rate of privatization support national wealth and create the interest for investments of foreign institutions. The demand for national stocks is strong, as they promise high profits and growth rates. However, political situations, unexpected economic changes and currency deviations often create unstable circumstances, which increase the risk on investments for investors (Oglesby 2007; Essential Finance 2003).

Some researchers don't distinguish between emerging and developing countries and define the term "emerging" as "optimistically" for developing countries – a euphemism for the world's poor countries. Developing countries represent less than one-fifth of the total world's Gross Domestic Product (GDP). It is predicted that developing or emerging countries will grow faster than rich or industrialized ones if they use their resources efficiently and smart. However, emerging countries have unique problems that require special, unconventional policy solutions and actions which slow down their development. Especially human capital and government policies (like free trade or property rights) are catalysts for development, but often absent in these economies. Inflation is another hindrance for development and a trigger for political instability. Other crucial problems that limit the growth of emerging countries are inefficient bureaucracies, corruption and national budget deficits (Economics 2004).

Examples for emerging markets are China, India, Lithuania, Mexico, South Africa, Taiwan or Turkey, among others (Essential Economics 2004; Datamonitor 2012). 80 % of the world's population lives in emerging stock markets. 40 % of those were established after 1985 and the majority of the included capital is held by two big players: China and India – two fast growing low-income countries, with a great interest to develop their financial sectors (Petraki and Zalewska 2010).

New technologies, namely quick exchange of information and digital data (electronic trading and transfer systems) as well as the creation of new markets is one of the biggest booms in the last twenty years. Along with the creation of new markets, new stock markets that are starting to cover the globe have emerged. 84 out of 142 stock markets in 2010 are emerging markets and therefore dominate the sector by numbers. The financial liberalization, privatization and pension reforms are supported by governments, funds and banks to stimulate the markets development (Petraki and Zalewska 2010).

The big trend of creating new stock markets is over, now the emerging markets have to save and strengthen their position. They have to invest to achieve this, in terms of standards, legislations, corruption, infrastructure and other aspects, in order to attract international investors. Otherwise the high growth rates are unsustainable, as most developing countries

can't afford to invest without much return. The question is how long emerging markets can sustain their constant, fast growth, and how far they can outpace the existing developed markets' growth rates. Stock markets like those of Bulgaria in the mid-90s can collapse, if they are not stable, controlled and secured (Petraki and Zalewska 2010).

It is a long process for a country to reach the status as a developed one. A change of the economic and political system is necessary: Legislation, laws, bureaucracy, accountability, political stability, regulation quality, governance support and secure stock markets have to be established. Furthermore, economy monitoring and shareholder protection establish efficient basics for trading, investment and growth. Yet many emerging markets are underdeveloped in certain areas. Corruption, poor governmental institutions and officials, as well as political instability are common and characterize emerging markets worldwide. This issue defines the biggest difference of developing markets compared to industrialized countries and therefore influences the factor of success for emerging countries (Petraki and Zalewska 2010).

To summarize, the ability to grow depends strongly on the governance and legal framework of the emerging markets and their ability to improve in these fields. This includes improvement in terms of sustainable development, efficient infrastructure planning, resource-sparing as well as supply chain management.

### 3.2. Supply Chain Management

A supply chain (SC) is understood as a “network of interdependent organizations and business units, [...] involved through upstream and downstream linkages from the original producer to the final customer through [...] different processes and activities that produce value in [...] form of products and services [...] for the ultimate customer”, by the use of physical and information flows as well as financial, human and material resources (Emmet & Sood 2010, p.10; Mangan, et al. 2012).

Supply Chain Management is an umbrella terminology that is closely related to logistics performances. Logistics deals with the planning, organization and movement of goods and people and has its roots in the military, where logistics was used to transport troops and material. Logistics is defined as “that part of Supply Chain Management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption, in order to meet customers' requirements“(CSCMP 2005).

Connected to logistics are various planning activities:

“Logistics Management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand planning, and management of third-party logistics services providers. To varying degrees, the logistics function also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service. It is involved in all levels of planning and execution — strategic,

operational, and tactical. Logistics Management is an integrating function, which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions including marketing, sales manufacturing, finance and information technology” (CSCMP 2005).

The main aim of logistics is the 5R-Principle of providing the customer the right product, in the right place, at the right time, in the right quality and to the right price. Logistics became an important issue for human existence and business processes and is focused on three flows: the flow of material, information and finances (Goetschalckx 2011).

Closely related to logistics, but in a wider context, is the concept of a supply chain, which performs the logistics operations through its network of functional organizations. Another definition states SCM as follows:

“Supply Chain Management encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all Logistics Management activities. Importantly, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, Supply Chain Management integrates supply and demand management within and across companies. Supply Chain Management is an integrating function with primary responsibility for linking major business functions and business processes within and across companies into a cohesive and high-performing business model. It includes all of the Logistics Management activities noted above, as well as manufacturing operations, and it drives coordination of processes and activities with and across marketing, sales, product design, finance, and information technology” (CSCMP 2005).

A supply chain starts simple, with a certain demand (e.g. a cup of tea) and a certain distance that has to be bridged to deliver the tea to the source of demands (the customer). Supply chains are defined by material, information, reverse and financial flows. The material flow generally includes raw materials (tea leaves), a production process (fermentation) and an end product (tea bags). The material stream flows from the supplier to the manufacturer and finally to the customer. The information flow goes reversed and includes orders, order confirmations or dispatch advices. Reverse flows describe goods that have to be shipped back to where they come from. Examples are defected or obsolete goods, recycled packing materials or transportation equipment like cages or pallets. Financial flows, reversal flows of funds, describe the payment flows of the goods and services along the supply chain (Scott et al. 2011). A simple visualization of a supply chain is provided in Figure 4.



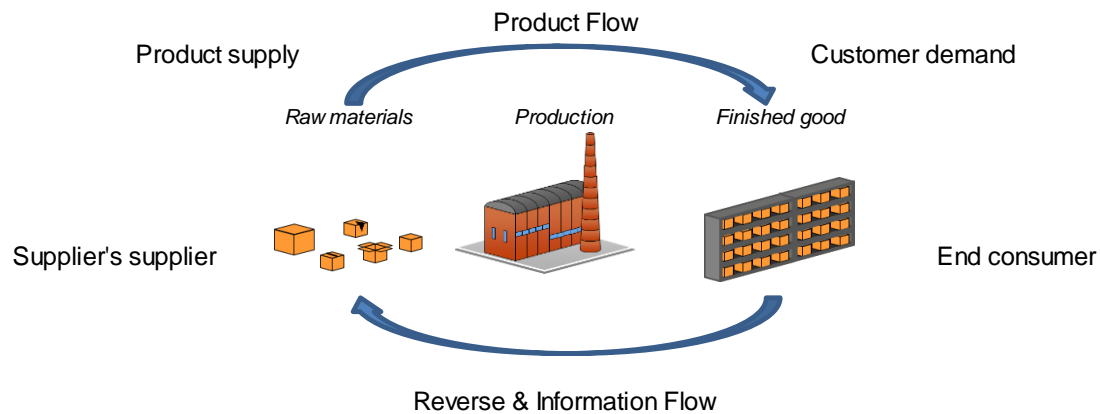


Figure 4: Supply chain process (Inspired by Scott et al. 2011)

A certain amount of participants and processes are involved in a supply chain: “A supply chain is a set of three or more entities that are involved in up- or down stream flows of goods, services, finances and/or information from a source to a customer” (Mentzner et al. 2001; Gold, Seuring and Beske 2010). The key aspects of a supply chain are customer demand and product supply. Related to this are demand planning, sourcing, producing and shipping in advance, before the physical demand occurs. Still, demand or supply can initiate the supply chain (Scott et al. 2011). Supply chains are nowadays defined by various general functions and processes within the chain and among its actors of sub-suppliers, suppliers, manufacturers, customers and sub-customers like distributors, wholesalers and retailers. All of them are triggered by planning decisions that include sourcing, returning, producing and delivering. Partners can be internal or external and the core aim is to plan capacities, demands, sales and schedules on every stage of the chain (Scott et al. 2011). This means that Supply Chain Management (SCM) is the systematic and strategic coordination of business processes across business functions, companies, and international borders, where suitable, fitting and reliable suppliers, partners and service providers have to be found and related policies and performances have to be defined. Additional service performances can be transportation, warehousing, financing, research, product design or IT (Scott et al. 2011).

The aim of this holistic approach is to gain long-term benefits and a competitive advantage (Mentzner et al. 2001; Gold, Seuring and Beske 2010). This includes interconnected partners, suppliers and customers, their resources, capabilities (assets, knowledge and skills) and their internal or external supply chains, in parts or as whole (Harland 1996). All processes are used and controlled heterogeneously and efficiently to enable a smooth manufacturing and delivering of products (Gold, Seuring and Beske 2010; Scott et al. 2011). Therefore, supply chain management can be seen as source of superior operational performance on a long-term basis. There are various aspects of competitive advantage that can be achieved with an efficient network. The most important ones are relation specific assets, knowledge-sharing, complementary resources and capabilities as well as effective governance (Dyer and Singh 1998). Therefore, the functional processes of planning, sourcing, making, delivering and returning are crucial at every stage of the supply chain (Scott et al. 2011). Additionally, trust

grows among the involved partners over time, which builds the basis for long-term relationships and shared values (Skjoett-Larsen 1999). When talking about the entire supply chain, not only the manufacturing operations, also all helping processes, such as transportation or other services and the involved assets of the partners, have to be taken into account. Supply chains are successful if the partners are able to interact within the network, as the key of supply chain management is cooperation rather than targeting individual efforts (Gold, Seuring and Beske 2010). In the recent years, global competition shifted from company level to supply chain level. Hence, SCM became a core competence that enabling higher standards through inter-organizational cooperation as loss of control, lack of service and quality problems can affect the performance of the whole network.

Finally, supply chains are influenced by continuous dynamics: Ideally, they respond to changes in the environment, adjust the performance and optimize the processes according to the new standards. The rate of product supply and customer demand should be balanced. Seasons, macroeconomic tendencies like exchange rates, currency levels, world politics, paradigm shifts and other issues affect demands and therewith volumes and styles of performance of the chain. This impacts inventory and stock levels, transport utilization, transport prizes and employee demands. Bull-whip effects and changes in demand that affect the whole upstream demand in increasing waves can occur, which influence the supply chain system (Scott et al. 2011). Such a factor that gained international recognition during the last years and that affects all divisions of business, and therefore also SCM, is sustainability.

### 3.3. Sustainability

The classic definition describes sustainability as the method of using resources efficiently to satisfy present demands without harming the needs of future generations:

“...sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Boone et al. 2012, p.1).

Even though the existence of greenhouse gases and their harm to nature is known since 1824, the impact of carbon-dioxide to the world climate since 1896 and the danger of pesticides is noted since 1962, the understanding of environmental friendliness achieved general recognition in the late 20<sup>th</sup> century. In 1972 the United Nations Environmental Program (UNEP) conference created the basis of today’s understanding of sustainability: “The protection and improvement of the human environment is a major issue which affects the well-being of people and economic development throughout the world; it is the urgent desire of the people of the whole world and the duty of all governments”<sup>9</sup>. Nowadays, sustainability therefore integrates environmental, economic and social aspects simultaneously on a product’s life cycle, which is defined by the term "triple bottom line" (Linton, Klassen and Jayaraman 2007; Daly and Cobb 1994). This is necessary, as the following facts will demonstrate. Constant global growth of population, continued increase of carbon-dioxide

<sup>9</sup> <http://www.worldservice.org/stockholm.html>.

emissions (about 80 % between 1970 and 2004 (Boone et al. 2012)) and a rise in global temperatures of about 1.8–4 degrees, due to emissions from human activity disrupting environment and disrupt the food supply, weather patterns, sea levels, and hence directly human beings: large-scale migration and diseases particularly harm societies in poor countries (Boone et al. 2012, p. 2).

Even though there is a global trend towards green performances, the understanding and recognition of sustainability is highly dependent on various aspects and circumstances. These are cultural norms, individual and group behavior, governmental and political decisions, development of science, education and the general relation towards the environment (Linton, Klassen and Jayaraman 2007). Technologic solutions and innovations alone cannot create a sustainable environment: “Economic and political climate must be such that sustainable practices are proactively adopted by various stakeholders” (Boone et al. 2012, p. 2). Results of greenhouse gases, waste water and other pollution are carried by all individuals in the world, while the businesses that use and consume energy-intensive products and services do not pay for the related harms: “Sustainable development is a global challenge that calls for a coordinated response from all of the world’s communities” (Boone et al. 2012, p. 2).

Following, sustainable development influences many businesses, their operations and supply chains. Pro-active companies can highly benefit from sustainable performances, not only in economic terms. Due to a general interest and request by customers and public, it became a trend to be environmental friendly in the recent years (Linton, Klassen and Jayaraman 2007). The complexity and connectivity of the global environment as well as the global approach of many companies create challenges for companies and the global economy in terms of transparency and control ability. As serious environmental targets are an important goal/aim, it becomes necessary to move beyond the compliance of environmental laws and regulations. This includes reducing waste and emissions, recycling of solid waste, conserving energy and reducing business impacts on the environment, as well as meeting labor and child work regulations – just to mention some aspects (Boone et al. 2012, p. 2).

Movement towards this issue can be recognized by the implementation of Corporate Social Responsibility (CSR) into the business models of many firms and corporations. The core purpose of CSR is to add the required and demanded values of the company’s stakeholders to the main aim of creating economic success. Stakeholders are employees, suppliers, customers, the environment or/and the local community. CSR is aiming to create good-will and a better development for both the environment and society. CSR reports and guides ideas, policies and requirements of the focal manufacturer to partners, stakeholders and the public. These ideas are mainly defined as environmentally-sensitive product design, efficient production, and recovery of areas that are influenced by the manufacturing operations. The goal is to reduce inputs to products and services, energy consumption, the amount of produced quantities and to increase the portion of recyclable material. A common concept is the holistic product life cycle approach of “Cradle to Cradle”, that tracks the entire product life process from raw material sourcing, production, product use, to material disposal, recycling and the recovery of

parts. Its targets are “closing loops” of raw materials, including the dismantling, reclaiming and reuse of resources, back to their basics and state of origin (Boone et al. 2012).

Carbon abatement targets are also commonly found among sustainability targets. To stabilize the carbon dioxide levels, high reduction achievements are necessary to avoid further growth of global warming and its contribution to climate change. All mentioned aspects affect businesses in their sourcing, manufacturing, distribution and expansion strategies, and there, with them, their supply chains. Or, phrased the other way: Supply chains influence the environment and society through their by-products of congestion, pollution, noise, resource and land consumption (Linton, Klassen and Jayaraman 2007; Elkington 1997). Therefore, it is necessary to include supply chain management in the discussion about sustainable development.

### 3.4. Supply Chain Management in an emerging market

Considering global transport movement, a change of global trade volumes can be detected over the last decades. While trade volumes were traditionally mainly moved from East to West or from emerging markets to economic countries, nowadays flows going both directions are common. Finished products are shipped to the East (China, India or Vietnam) or to the South (Brazil, Argentina, Peru) and raw materials move in the opposite way. This affects supply chains and their strategies. Standardization, small supplier bases or efficient inventories are some of the key factors of supply chains to achieve economy of scales. Anyhow these enablers for cheap transport rates per unit can't be permuted at every place anymore. Emerging markets are characterized by a wide diversity in all possible issues. As parts of emerging countries grow quickly while others remain on the old level of development, huge differences within countries, among human beings' mentalities and within general developments of the affected areas occur. Especially when it comes to infrastructure development, supply chain standards and legislation norms hurt companies from industrialized countries, as they find other standards than back home: The logistics-to-GDP-ratio in the U.S. is approximately 9.9 % and can reach 20 to 27 % percent in emerging markets (Pearson 2014). This makes it difficult to apply lean logistics and other efficient transportation strategies. Unclear, contradictory and frequently changing regulations complicate the conditions for international, standard-used companies and aggravate planning reliability and investments. Changed institutions, policies and service facilities create heterogeneity in emerging economies, combined with diverse business and social cultures, business development, various work habits and rhythms; labor efficiency as well as unstandardized taxation and custom clearance standards. All these issues make it impossible to apply standardized supply chains. Instead, individual planning is necessary. This requires a deep understanding and knowledge of the targeted market. Therefore, it is highly required to include sensing, capturing, and analyzing of country-related data, in order to understand the diverse standards, stakeholders and local conditions to achieve efficient supply chain systems in the various emerging markets (Pearson 2014).

Furthermore, emerging markets are mainly rural-based. This requires more flexible, extended distribution and transportation networks to reach and to connect the diverse, large rural markets with each other and to link transportation infrastructure with areas of raw material supplies and places of demand (Pearson 2014): The key success factors for supply chains in emerging countries are hence flexibility, innovation, response and partnerships with external, local or market-confident partners, to meet the unique needs and demands of these markets (Pearson 2014).

As stated in the definition of emerging markets, issues and gaps compared to industrialized countries' standards in terms of the political situation, economic stability and currency deviation make planning and investing in supply chain networks difficult, especially investment in assets like warehouses, terminals and partnerships. The investment in emerging countries and the prospects of high returns on investments due to the high potentials of growth also includes potential freight volumes and profits for supply chains. Where economies grow, demand for transportation and yields for supply chains appear. Furthermore, many emerging countries represent strategically valuable locations and positions within the emerging regions. This makes it attractive to establish trade and transportation infrastructure in these emerging markets, as it provides access to the booming areas and therefore the expected profits of economic growth. Still, the risk of unstable situations exists for companies that dealing with supply chain management in the same way as it exists for general investors (Essential Finance 2003). For supply chain management systems that particularly deal with operations like sourcing, production, transportation, warehousing, packaging, assembling and value added servicing, articulateness and security of standards, laws and legislations are mandatory. Contract design and security, custom clearance, claims settlement and liability standards are crucial in international trade and partnerships. Without certain regulations, monitoring penalization and governmental provided security, modern and cost-efficient supply chain management is therefore difficult, if not impossible (CSCMP 2005; Petraki and Zalewska 2010).

In an internal supply chain meeting of the BASF region of Middle East and Northern Africa, as one of the biggest regions of emerging markets, key obstacles for supply chain operations in the included countries from a practical perspective were named. These are in accordance to the already mentioned gaps from literature:

- geographic issues (sometimes long distances between industrial zones; extreme weather and geographic conditions)
- lack of middle to long-term planning
- lack of safety awareness (absence of environmental and safety standards; missing awareness of staff towards dangerous goods)
- lack of clear regulations (unclear and sometimes corrupt custom clearance, import and trade regulations; corruption in general)
- lack of infrastructure development (main focus on road transportation; low concentration on other, probably less energy-consuming transport modes; weak

interconnection between industrial and infrastructure zones; lack of road safety; congestion)

- lack of professional Third Party Logistics Providers (3PL) and other service providers and useable assets (low safety standards for warehouses and infrastructure; lack of vehicle fleets; lack of suitable certification) (BASF internal ESL Meeting 2014)

In summary, the same problems that exist for companies that investing in emerging markets in general exist for investors of supply chain operations. Lack of stability, governance and regulations, the absence of developed, save and efficient infrastructure and the difficulty to find suitable partners in the forwarding sector are the main obstacle for supply chains in emerging markets. That makes the establishment of supply chain networks in emerging countries much more complex and difficult than in a developed market and, therefore, more expensive.

### 3.5. Sustainability in an emerging market

As the approach of sustainability to business operations is rather young in general, it is important to understand the approach and the related complications of resource and energy efficient processes in a fast changing environment, such as emerging markets; with partly underdeveloped, partly immensely growing areas, in particular.

As described already, emerging markets constitute opportunities for economic growth and new customers for multinational companies. But the lack of standards, awareness and regulations can also be a challenge for their corporate strategies: An “underdeveloped institutional environment, weak public governance, widespread bribery, corruption and the lack of regulatory legislations, rules, public transparency, and respect for human rights” create an unfamiliar situation for companies that expecting the same or similar conditions from emerging countries as they would from developed ones (Jayakumar 2013, p. 1). Especially when corporate strategies are applied and corporative goals are pursued, to be achieved in all connected branches, markets and regions in the world, different sets of standards and understanding towards certain issues can become a difficult situation in achieving corporate uniformity.

Sustainability is mainly related to CSR, which became an important public issue for many global players in the recent years and which is, like other management strategies, a new approach in emerging markets. How global companies apply their CSR methods in emerging markets is not very well analyzed in literature so far and therefore under-explored, even though that both CSR and sustainability can be used as competitive advantage of global, multinational companies towards their competition in or from emerging countries.

Most global focal companies apply their CSR strategies in the same manner as they perform them in their western, developed countries of origin (Quazi and O'Brien 2000; Rodriguez et al. 2006; Yang and Rivers 2009). As explained in the definition of emerging markets, chapter 3.1., developing countries lack in areas like standardization, political stability, governmental

leadership, legislation and punishment of statutory violation, as well as norms, education and attitude about labor, social conditions and child labor, equality of men and women and other social values (Petraki and Zalewska 2010). As these existing circumstances are widely different in emerging markets, compared to those, found in the home countries of the focal companies and represent the core topics of CSR, the strategy of applying Corporate Social Responsibility in emerging countries has to be adjusted according to the local culture.

CSR in emerging markets must be considered a development tool rather than just a tool for competitive advantage. Business activities should not harm the environment and societies and should create and add value through the optimization of external multipliers of business operations for both instead (Nelson 2000). Furthermore, understanding and awareness should be spread, demands and standards for weak individuals and nature should be created. As emerging markets don't provide efficient bureaucracies, developed policies, protective laws, labor parties, safety and protection standards, the influence from developed concerns and institutions can create a basis for the development of these standards, where no or just few rules exist (Essential Economics 2004).

As these shortcomings in terms of missing standards, laws and protection regulations of nature and human beings exist and furthermore, national budget deficits, poverty, existential fear and corruption are common, the loose obedience of laws or simply the absence of laws in emerging markets create gaps for cheaper performances and, therefore, the possibility to save money (Petraki and Zalewska 2010). Due to the lack of proper protection regulations for human beings and the environment in developing countries, rules that would apply in developed countries might be ignored. Hence, due to less strict labor rights and laws, cheap labor and looser legislation of toxic waste, dangerous products and pollution (Boone et al. 2012), in some cases, emerging markets become dumping grounds – instead of being assisted in developing an awareness towards sustainability. Exploitation and a “competitive advantage” at the weakest's expense, instead of aid for people, is the result. Lacking capacity and infrastructure to properly treat and discard waste, especially when imported or manufactured by international companies, is another important aspect for some emerging countries: improper handling with crude, unsafe methods. The results are harm for human and nature. Unawareness and lack of protection do their parts (Boone et al. 2012) and describe the challenge of implementing additional regulations that will not lead to financial benefits or advantages.

In conclusion, due to the absence of certain standards towards protection of human beings and the environment, missing awareness, low value awarding for social activities and despite understanding about social good will, as well as financial circumstances, it is much harder to implement sustainability into an emerging market compared to a developed one. In emerging markets, activities harming the environment or society are more widespread than supporting activities for this reason.



### 3.6. Sustainable Supply Chain Management

Both supply chain management and sustainability are broad fields of research (Linton, Klassen and Jayaraman 2007). Nevertheless, the following lines will provide a short, general introduction about how the combination about a possible combination of these concepts.

As mentioned before, supply chain management is the planning, controlling and operating of an interconnected business network that provides the products and services demanded by the end consumer, which means that all transportation operation from the place of origin to the place of consumption, as well as related storage and inventory, are covered by the SCM operation (Harland 1996; Cetinkaya et al. 2011). While the transportation of goods to places where they are valuable for economic reasons is meaningful on the one hand, it creates implications for the environment and society on the other hand (Cetinkaya et al. 2011). This is one reason why the European Commission considers it necessary to achieve efficient, effective supply chains and to take the negative environmental and social impacts resulting from transportation into account (Cetinkaya et al. 2011).

The core of supply chains is the transportation of freight, whose total volume is continuously rising due to growing demands of physical goods and due to more complex responsible and sophisticated supply chain solutions: Business strategies as lean production, just-in-time and efficient consumer response require more flexibility to achieve global competitiveness for their users. Furthermore, wider raw material sourcing terrains, large-area-distribution and market-extension due to savings in purchasing and production, as well as sales opportunities and easy communication, create a further extension of supply chains (Cetinkaya et al. 2011). Centralization of warehouses or production sites to generate economy of scales and to reduce fix costs creates an additional demand for the movement of goods. The trend towards Consumer-to-Consumer (C2C) online transaction websites and the related transportation of small units additionally affects transport volumes and hence the impact to environment and society. The related need for flexibility affects the modal split and results in an increased share for road transportation – the least environment-friendly transport solution of all modes except air freight. As this development is continuing and the world's resources are finite, a change towards more sustainable operations is inevitable (Cetinkaya et al. 2011).

Sustainable supply chains can avoid external costs for pollution, noise, congestion and accidents (3-5 % of GDP) as well as social and environmental harms through emissions. CO<sub>2</sub> emissions are still rising due to the higher amount of vehicles, even though technology helped to achieve lower emission levels ON average. Just as sustainability in general, sustainable supply chain management has three dimensions: social, environmental and economic, which are directly caused by supply chain operations and that include issues like energy consumption, resource consumption, emissions, waste and waste water production (Cetinkaya et al. 2011).

Combining the mentioned aspects of sustainability and SCM leads to an optimization of all operations along the entire chain, to create the highest possible value with the smallest financial input and lowest environmental impact. This extends the performance of the pure transportation process and takes issues like production of by-products (reduction and



elimination), end-of life-circle extension (reducing demand for new raw materials), emissions (reduction and elimination) and recovery processes into consideration (Linton, Klassen and Jayaraman 2007). As sustainability is interdisciplinary, all interactions and activities along the supply chain that influence the environment, as well as current or future life quality, have to be taken into account (Linton, Klassen and Jayaraman 2007). It is necessary to define, coordinate and interact with stakeholders to create a holistic awareness of sustainability within the network (Gold, Seuring and Beske 2010; Linton, Klassen and Jayaraman 2007; Matos and Hall 2007). If achieved, SSCM can become a catalyst to create inter-organizational, strategic collaborations, competitive advantage and improved environmental and social standards (Gold, Seuring and Beske 2010).

Literature in English concerned with SSCM mentioned environmental proactivity, greening of the supply process, product-based green supply and strategic purchasing as key issues of SSCM, which are integrated into the daily tasks and operations of the network and their players. Closed loops of two supply chains, a forward and a reverse chain with reentering, recovered products are mentioned as important aspect of sustainable supply chains, too (Gold, Seuring and Beske 2010).

To implement social and environmental actions, interaction and coordination becomes crucial, as these performances are harder to track than financial measures. Therefore, close, grown long-term relationships, built on trust and a common vision are necessary. Through collective learning, knowledge transfer and exchange, a sustainable inter-firm-based competitive advantage can be achieved (Gold, Seuring and Beske 2010).

Factors towards sustainable operations are the constant growth of public and political awareness, political frameworks as well as customer and stakeholder demands that create pressure beyond service or product prices. Furthermore, additional social and environmental added value, as well as the possibility to achieve competitive advantage over competitors can be reasons (Gold, Seuring and Beske 2010). Grant (1996) considers knowledge and information-sharing as one of the most important strategic assets of a company and its supply chain, as those are difficult to imitate. Communication and interactive process planning can lead to learning processes and thereby to inter-competitive advantage (Carter and Rogers 2008).

Environmental and social issues come in line with product quality. As the focal companies are held responsible for the performance of their suppliers, service providers and their supply chain, they rule or govern them, provide direct contact to customers and design the offered service or product according to the market demands (Seuring and Müller 2008). Furthermore, it is expected of those companies to consider social and environmental aspects in their supply chains. As famous examples in the previous years showed, lack of control and monitoring within the supply chain can be dangerous for the company's image: Timberland, C&A and Nike were blamed for inhuman working conditions and environmental harms (Preuss 2011; Graafland 2002).

In summary, aiming to implement SSCM requires the close cooperation with all partners, a holistic perspective along the whole chain and a leading role of the focal company itself.

## 4. Case Description

This chapter provides details about the case study environment. It introduces BASF, the focal company as case of a global corporation, aiming to implement a new approach in its business center in Turkey; it explains the internal attitude towards sustainability and describes the current supply chain system, which is supposed to become a sustainable one. The chapter provides furthermore a brief introduction about the history, economic, and politic situation of Turkey, the environment where the change should happen and where the empirical data was collected. This enables the reader to understand the basics and the background of the case circumstances, in order to follow the findings in the Analysis and Discussion parts.

### 4.1. BASF SE – A global chemistry manufacturer

BASF SE was founded in 1865 and is, as an integrated global company, nowadays the largest, world's leading chemical company (BASF SE 2014 II). The stock-listed manufacturer, with headquarter in Ludwigshafen, Germany, is operating in more than 80 countries, with six integrated production sites and 390 other production plants located all over Europe, America, Africa, Asia and Australia. Its customers are spread all over the world and can be found in all industry sectors. Since the 1990s, there are only B2B relationships in dealing with high-value products like coatings, fertilizers and pharmaceuticals, as the B2C business was abandoned. The main business segments are chemicals, plastics, performance products, functional solutions, agricultural solutions and oil & gas (BASF SE 2014 II). In 2012 sales of 78.73 billion €, earnings before interest and taxes (EBIT) of 8.88 billion € and a return on equity after tax of 20.4% were achieved. "The Chemical Company" employs around 113,260 employees within the BASF Group worldwide (BASF SE 2013).

In general, BASF is known as an innovative, resource and energy efficient producer. The integrated production sites, well planned production plants producing based on an interconnected resource flow, with mutual transfer and usage of by-products within the system, are one example. These systems enable the reduction of production and transportation costs, as well as risks of accidents (BASF SE 2014 II). BASF communicates a special interest in environmental issues, resource and development investigation, environmental protection and steadily improvement in reducing carbon emissions, health performance, as well as high quality and safety standards (SQAS, CEFIC or ISO 14001). The progress is monitored at all sites worldwide (BASF SE 2013; BASF SE 2014 II). Also, engagement in other sustainability initiatives with other chemical companies is maintained to improve sustainability sourcing practices, including ecological and social aspects. BASF sets standards in distribution safety. These are required by logistics partners and suppliers through a Supplier Code of Conduct<sup>10</sup> for global procurement, raw materials, technical goods, traded materials, logistic services, packaging and others. This should guarantee quality, safety, environmental and social protection. BASF remarks a particularly strong commitment in emerging economies, where

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<sup>10</sup> Available online:

<http://www.basf.com/group/corporate/en/function/conversions:/publishdownload/content/products-and-industries/procurement/Compliance/Lieferantenbriefe/English.pdf>.

the necessary infrastructure is in the process of development. The European Safety and Quality Assessment System (SQAS) is applied with checks and trainings to raise the standard of safety and quality within the concern worldwide. The company complements this triangle with core sustainability aspects, based on fundamental environmental, social and corporate governance (ESG) standards, inspired by the ten principles of the United Nations Global Compact (human rights, labor, environment, anticorruption) and the global chemical industry's Responsible Care Program (chemistry branch improvement in health, safety and environmental (HSE) performance) (BASF 2013; BASF 2014 II).

#### 4.1.1. Sustainability approach within BASF SE

According to the annual report of the focal company, sustainability plays an important role for BASF, as it is the main part within the corporate strategy: "We create chemistry for a sustainable future" (BASF SE 2013). According to official material, sustainability is embedded in the whole organization and strategy and is seen as a driver for growth. BASF defines sustainability according to the "triple bottom line" (Daly and Cobb 1994): "We create chemistry. We combine economic success, social responsibility and environmental protection. Through science and innovation, we enable our customers to meet the current and future needs of society" (BASF 2013, p.2). The global integrated chemistry manufacturer sees its role as part of society and explains a special interest in growing in emerging countries, as these are more vigorous than industrial countries: The international concern expects the world's population to grow up to 9 billion people until 2050 and especially in emerging counties a growth of more than 60 % by 2020 is expected. This documents the need to act sustainable, especially along the entire supply chain, as growing demands have to be satisfied with limited global resources. This creates challenges and opportunities for the chemical industry: "We drive sustainable solutions" and "offer [...] sustainable products and solutions" (BASF 2013, p.4)<sup>11</sup>.

#### 4.1.2. Supply/Value Chain perspective and sustainability within BASF SE

The emphasis on sustainability is also communicated for the supply chain and includes suppliers, transportation, production and customers, which are informed, monitored and audited according to performances in environmental and health protection, safety and security. Sustainable supplier management (BASF SE 2013, p.92) is seen as a significant factor for growth, value and reliability. The selection of suppliers is based on economic, environmental, social and corporate governance aspects, implemented through a Supplier Code of Conduct Audit, which is based on international guidelines. The aim is to minimize supply chain risks and to inform about sustainability benefits. Special requirements, standards and risk assessment exist for transportation and warehouse safety between all partners and disposal facilities. Furthermore, there are product risk assessments for environment and customers, trainings in developing countries and emerging markets, ecological and

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<sup>11</sup> Detailed environmental figures BASF SE 2013, p.25; Global labor and social standards, BASF SE 2013, p.43; Focus on social commitment, BASF SE 2013, p.44.

toxicological testing, energy efficiency and climate protection programs. The corporate carbon footprint along the value chain is measured worldwide since 2008, aiming at a reduction of air pollution and emissions (BASF 2013), also for supply chain management.

## 4.2. Turkey – A regional business center

The Republic of Turkey, the location for the in hand research, has a population of 76.8 million people and was the 18<sup>th</sup> biggest economy in the world in 2011 (GYOder 2013). The country that is located between Asia and Europe and is surrounded by four seas has a higher balance of imports than exported goods. Main export goods are clothing, foodstuffs, textiles, metal products and transport equipment, while machinery, chemicals, semi-finished goods, fuels and transport equipment are imported (Datamonitor 2012; GYOder 2013). Turkey applies a liberal, open trading system, especially with EU countries and aims to become one of the 10 largest economies in the world until 2023 (Datamonitor 2012; GYOder 2013). Turkey has a strong financial sector but declining account balance due to the high amount of imported goods consumption, energy imports and a dependence as an export industry which is based on imported intermediate goods and machinery. The country is strongly energy-dependent and its energy imports are a main trigger for the national account deficit. This leads to a frail and unstable economic situation. The current government has been implementing constitutional changes towards more democracy since 2010, still Turkey's domestic and foreign politics are fraught. Difficult foreign policy with the neighbour countries Iran, Syria, Israel, and Cyprus and inner conflicts with protests, violent police forces and threats of internet-based information limitation create political and economic instability (Datamonitor 2012) in this booming, emerging market. The recent mine accident created once more questions about work safety, political governance, the leading politicians and the importance of profits rather than human rights and health (Blaser 2014).

### 4.2.1. Environment perspective in Turkey

In recent years, Turkey has seen the update and modernization of environmental policies and laws – due to the ambition of EU accession. These include for example recycling, waste sewage treatment, water purification, solid waste management, and environmental remediation. Policies target energy efficiency and the usage of renewable sources, with low tax rates for natural gas, liquefied petroleum gas and biodiesel. Anyway, there is still a bad impact of chemical and detergent waste waters and a constant increase of air pollution, CO<sub>2</sub> emissions and greenhouse gases, especially in urban areas (Datamonitor 2012; European Commission 2010). Various environmental programs are supported, e.g. the Kyoto Protocol, Convention on the Protection of the Black Sea against Pollution or the United Nations Framework Convention on Climate Change (Datamonitor 2012).

#### 4.2.2. Logistics and infrastructure in Turkey

Turkey was rated the 27<sup>th</sup> best logistics hub worldwide in 2012 according to its logistics performance, efficiency of customs clearance, transport related infrastructure, ease of international shipments, logistics competence, service providers, tracking and tracing capabilities, and other categories (Alişan 2014). Despite continuous improvement since 2005, 80.63 % of the modal split is still represented by road transportation, while modes considered being environment-friendly like railway (4.76 %) and sea transport (2.66 %) have considerably low shares. In earlier years, road transportation gained the most investments and grew to one of Europe's biggest – with huge bus and truck fleets. Currently (2012) 90 % of goods and 95 % of passengers are transported on roads. Regardless the infrastructure is not very developed, as only 3 % of the 65,000 km are declared as being a motorway (GYOder 2013). The railway network's distribution is small, even though extension plans exist.

The government is aiming to achieve railway freight villages and expand the port facilities in Turkey (Alişan 2014). The need for road, rail, shipping and aviation facilities is rising, due to an increasing demand for oil and gas, as well as the related industrial and refining zones (Emerging Monitor International 2014; PwC Turkey 2012). Being located at one of the world's most lucrative transport and trade routes connecting Asia, Africa and Europe, Turkey is expanding in transportation, logistics and supply chain infrastructure. There are high infrastructure investment goals, including the establishment of logistics centers, undersea tubes and a new bridge above the Bosphorus; new ports, airports and railway infrastructure, as Turkey targets to become the "China" of Europe (Alişan 2014; GYOder 2013; Beyzatlar and Kuştepe 2011). Some regulations still need time, the ADR law was finally recognized in 2014, after around ten years of planning. Still, there are other deficits to fix: "The real question is whether Turkey can integrate all its latest projects into a system that improves logistics, as well as transport, customs procedures and regulations, especially on international borders. There is a need of improvement, as the government recognizes, while more global and regional players in the logistics industry need to be encouraged to enter the Turkish market. Visa regulations need to be revised, as well as documentation. The lack of third-party logistics service providers hinders and competitive international standards are the major problems" (Smith 2013).



Figure 5: BASF sites in Turkey (BASF – Mutlu 2011)

### 4.3. BASF Turkey – BASF as regional business center and location of research

BASF Turkey employs approximately 700 people and operates in five production sites<sup>12</sup>; three of them are located in a circuit of 45 km around Istanbul (Gebze, Dilovası & Çayırova). One lays in the east (Trabzon) and one operates in the south (Adana). All these plants are located about 1000 km from the main BASF area of Istanbul<sup>13</sup> (BASF - Mutlu 2011). Approximately 80 % of the manufactured goods are produced for the Turkish market, while the main transportation distribution mode is road transportation: 90 % in average (See Figure 6). The plants' business goals are named as profitability, lean production, growth in Turkey and Middle East & North Africa (MENA). The produced goods are textile and leather chemicals, construction chemicals, oil and gas chemicals, plastics, performance products, automotive products, energy efficiency and wind energy products, agricultural products and fine chemicals. The distribution shares in 2012 consisted of 56 % bulk and 44 % packed goods (BASF - Mutlu 2011). The head office of the Business Center Turkey, as well as for the whole region of Middle East & North Africa (BCT) is located in Istanbul and was the location the empirical research for this master thesis was conducted at (BASF Turkey 2014; BASF - Mutlu 2011).

#### 4.3.1. The BASF supply chain in Turkey: Key principles

The BASF supply chain in Turkey is not standardized. Each of the four BASF business units is organizing their supply chain self individually. As such, four different business models are applied and different departments are involved. In the following a general schematic plan of

<sup>12</sup> In April 2014.

<sup>13</sup> Visible at Figure 5.



procedures describing the (Figure 6) the BASF supply chain in Turkey is presented and provides information about the operational core aspects and the material flow rather than spending elaboration on processes that are conducted by particular departments.

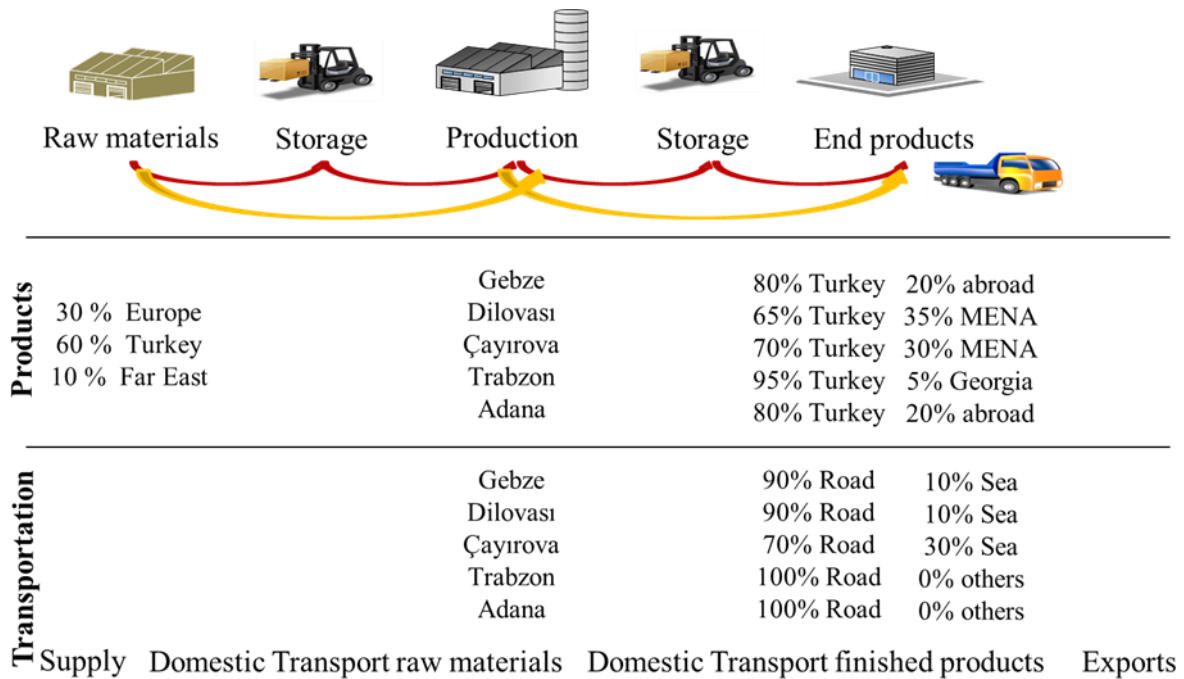


Figure 6: BASF Supply Chain in Turkey

According to Figure 6 the supply chain of BASF in the business platform Turkey is as follows: BASF Turk produces commodities, as mentioned, in five production sites. To produce goods, raw materials are required. Those are purchased on the domestic market or from the BASF network, mainly in Europe. Here, main suppliers are the “Verbund”-sites in Ludwigshafen and Antwerp. 40 % of raw material is imported, while 60 % is procured by national suppliers. The materials are transported by 4 to 5 service providers and arrive straight at the plant or are stored for a certain time before reaching the production. Various warehouses are rented and operated by external service providers. After the production of the end products, the same choice presents itself: storage or distribution. Approximately 78 % of the finished goods are dedicated for the Turkish market, while 22 % of the products are exported to countries of the Middle East & North Africa (MENA), Georgia, Turkmenistan, Kazakhstan, Azerbaijan or Cyprus<sup>14</sup>. For the distribution of the BASF products 90 % of transports are made by road vehicles and 10 % are delivered by sea transport. Rail road systems are not used.

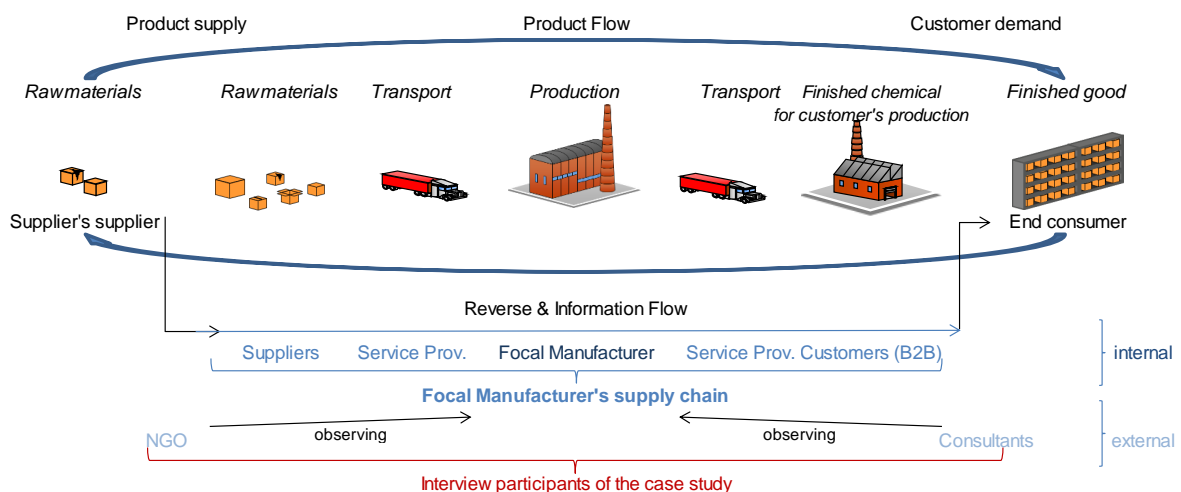
Import-shipments, domestic raw materials and transport of finished goods, as well as the domestic and export distribution of finished goods are organized by at least 5 different forwarding agents. There are more than 50 various suppliers providing materials for the Turkish production and hundreds of companies are considered customers of BASF Turk. 193,000 tons of bulk products and 148,000 tons of packed goods were distributed in 2012.

<sup>14</sup> Average according to the detailed figures of every plant: Visible in Figure 6.



Figure 6 demonstrates a general overview of the processes, raw material origins and end product destinations, as well as production sites and modal split of the finished goods. As the processes are complicated and overlapping and not part of the focus of this master thesis, this brief overview of the supply chain process is considered to be sufficient in order to understand the following argumentation and context<sup>15</sup>.

The mentioned actors of the BASF supply chain in Turkey are called *focal company/manufacturer* (BASF), *suppliers*, *service providers* and *customers* in the following paragraphs. To demonstrate the main actors' roles within the supply chain, the upcoming lines describe their activities: Taking the simple supply chain figure from *The frame of reference* as example (Figure 4), the BASF supply chain looks a bit different, as only B2B relationships exist. The material flow was described as raw materials, a production process and an end product. In the case of BASF it looks like this: Suppliers sell raw materials, which are shipped to the focal manufacturer's production site by service providers. The raw materials are used to produce the BASF products in these sites (production process). Those "end products", ingredients for the focal manufacturer's customers' production, are delivered to the customers' production plant. So, a second "production process" takes place, which is not part of the focal manufacturer's supply chain. Finally, the goods are sold as end product to the consumer in various forms (plastic, agricultural, hygiene products...). Those end consumers, e.g. private individuals, are not considered as part of the focal manufacturer's supply chain either. Therefore, both the end consumer and the supplier's supplier are not part of this case study, while internal actors like suppliers, service providers, customers and the focal company are considered as source of research (the focal manufacturer's supply chain). Additionally to the active, internal SC actors, external, observing institutions, like *NGOs* and *consultants* are interviewed in order to gain further, more general knowledge about the circumstances in the branch in Turkey from an external, observing point of view. Those actors build the group of interview participants of the in hand research (Figure 7).



**Figure 7: The BASF supply chain actors**

<sup>15</sup> Some facts are rounded or generalized, due to confidential reasons.

## 5. Findings from the case analysis

The following chapter contains the findings from the qualitative interviews with the focal manufacturer's SCM actors. While the thesis up to this point contained the theoretic foundation, the following pages present the practically achieved empirical qualitative data. This will enable a detailed understanding about the SCM actors' perspectives about sustainable supply chain management and its implementation in the emerging market of Turkey.

The findings from the interviews with suppliers, service providers, the focal manufacturer and customers (the active actors of the BASF supply chain, visualized in Figure 7) are summarized<sup>16</sup> and compared by key topics that are considered the main aspects about the implementation of sustainable supply chain management in the emerging country Turkey. Those are:

1. The awareness within the supply chain of the focal company about general sustainability (direct SCM actors' perspective)
2. The awareness about general sustainability and sustainability in supply chains in the Turkish SCM industry, evaluated from a supply chain actor's perspective (relative perspective)
3. Opportunities and drivers for implementing sustainability in a supply chain
4. Opportunities for Turkey emerging from sustainable supply chain management
5. Experienced challenges in implementing sustainable supply chain management and general challenges for SSCM in Turkey
6. Towards sustainable supply chain development in Turkey
7. Some further thoughts: Forwarding the "hot potato" of responsibility in terms of SSCM

The structure of the analysis is as follows: A short summary provides the key aspects of the statements that are supported by quotations from the interviews. Summaries of all target groups demonstrate insights about the group-specific opinions of the focal manufacturer's SC's internal actors. To add the perspective of external, observing institutions, summarized descriptions of consultant agencies and the NGO are stated. Out of this, patterns are formulated that conclude every part.

### 5.1. The awareness within the supply chain of the focal company about general sustainability (direct SCM actors' perspective)

In general, there is a variation of understanding about sustainability among the actors of the Turkish supply chain of the focal company. It ranges from no understanding to clear definitions, ideas, visions and implementation. Most interviewed companies are not fully convinced of the benefits and reasons to implement sustainability in their processes. The most frequently stated reasons for this are missing benefits and sales advantages. Still, there are

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<sup>16</sup> The most important statements for all groups of interest can be found in Appendix 5.

some companies that think further, are innovative and provide higher standards than competitors in general. However, the status of sustainability is low:

*In Turkey, mainly economic issues decide. You don't know what will happen at the next day, due to exchange rates and currency changes. Therefore, economic issues are very important in the Turkish market. Environmental issues are not important in Turkey yet. EU laws are sharp. So, companies that aim to have business in Europe or the USA have to produce within these frames. But there is no legislation in Turkey. Human lives are not very important in Turkey yet. The price counts.*

(Supplier 2, chemical manufacturer)

*The environment is sensitive, but there is no chance for profit with eco trucks in Turkey. Still, I buy trucks with EUR 5 and EUR 6 standard, but this does not affect my sales.*

(Forwarder 2, small Turkish company)

*Sustainability here is just in its beginning. We were just acquired, as the plant was not our plant before (6-8 years now). In the beginning we focused on other issues, sustainability is a future topic. Definition of sustainability is not known. Of course something is going on here, but no specific terminology is known, as the topic is not so frequently used at us at the moment.*

(Customer 3, manufacturer of hygiene products)

Interviewing the focal manufacturer, about half of the interviewed employees were fully aware of the aspects and the meaning of sustainability. There is a general understanding within the company about the issue of sustainability, which can be discovered in all departments where interviews were held. This general awareness is found among all levels of employment. All people knew the term “sustainability”, still there was a big gap between knowing the term, knowing the economic part of sustainability and being fully aware, which means having a wider understanding about the approach that includes three different aspects within itself<sup>17</sup>.

The answers to the question about awareness by service providers varied from having no idea (Forwarder 3; middle-sized Turkish company), to concrete processes, implementation and visions about sustainability (Forwarder 1, big Turkish company; Forwarder 4, big, Europe-wide acting Turkish company). The smaller, locally-oriented Turkish companies were less aware of the aspect than bigger, international ones. The main argument against sustainable trucks or performances was that it would not increase profit (Forwarder 2, small Turkish company). One of these companies clearly mentioned that sustainability plays no role in the firm and the interviewee stated that he has generally no knowledge about it. He made sure that it is not the right time for investment into sustainability for his company (Forwarder 3; middle-sized Turkish company). Three of the bigger companies (Forwarder 1, 4, 6) are well-

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<sup>17</sup> These are defined as Triple Bottom Line approach.

known for their innovation and investment into higher standards, emission monitoring and green logistics. They stated clear ideas like multimodal transportation, driver trainings, a research center, efficient operations, resource efficiency, carbon emissions and waste recycling. The entrepreneurial and competitive advantages as well as the marketing usage of sustainable operations were understood by these companies. Still, the feedback of the small participants painted another picture.

The understanding of suppliers about sustainability varied among the interviewees. One person had no idea (Supplier 3, packaging supplier), others see it from the economic perspective (Supplier 4, chemical manufacturer). One company focuses on the social part, by supporting the local transportation industry, which includes guiding them towards development (Supplier 4, chemical manufacturer). Furthermore, quality and safety are mentioned as sustainability aspects. In general, the low importance of sustainability and the focus of prices in Turkey are named. It seems as most international acting companies think further.

Customer satisfaction, cost benefits and marketing issues were the terms that were used to define sustainability from a customer's perspective. The importance of the price and a lack of priority towards sustainability and the space of improvement were mentioned.

### **Patterns**

There are some patterns that stick out: In many cases, sustainability is purely seen from an economic perspective, while the environmental and the social aspects are not included. Also, quality and safety as preventive tools are considered as being sustainable for many interviewees. Another important pattern is the decreasing sustainability awareness from big and international, to small and local firms. Finally, the missing monetary benefit gained by a sustainable performance is mentioned repeatedly. In many cases reasons why sustainability is not implemented, why the awareness is so low and why gaps in awareness between different institutions exist are not clearly stated.

## **5.2. The awareness about general sustainability and sustainability in supply chains in the Turkish SCM industry, evaluated from a supply chain actor's perspective (relative perspective)**

Asking the interviewees about the awareness of sustainability in Turkey in general, to evaluate other organizations about their knowledge, which means a relative perspective; the main answer was that sustainability awareness in Turkey is generally low. Turkey as a country is supporting different agendas; the government supports the development and Turkey is more aware of sustainability than other countries in the Middle East, but sustainability thinking is not given necessarily. There is mostly no preference for sustainable or green products for companies: Environmentalism is less important than performance and costs in Turkey. Still, the standards and knowledge about sustainability are higher in big and international firms, as European customers require certain norms. Turkish companies are

rather cautious about investing in sustainability. Generally, society is considered to have little knowledge and awareness about eco-friendly or sustainability aspects. Only a small number of companies invest in green logistics or other transportation related sustainable approaches.

*There is no awareness. It must be educated in school. Young people have to learn the issue. Turkey is not a very developed country regarding sustainability at the moment. The government has to initiate it. Individual movements in the West of Turkey are not enough. People in the East have other problems.*

(Customer 2, Turkish chemistry product distributor)

*People need force and then they follow. They need leadership (Customer 2, Turkish chemistry product distributor). Other pushing methods are penalties by the government. This helps, as penalties were not high in the past. Companies start to employ environmental engineers and some got high fines.*

(Customer 1, multinational consumer goods)

*There is awareness here, but it's useless on the market. Folk has no awareness. They see it more as a disadvantage, like custom duties. People think that if they invest, they don't gain something out of it. Nobody is willing to pay more than necessary. It's the same business than with ordinary trucks. The market and forwarders know the issue, but I don't know if they do something about it. I don't know if they do it in the right way or not.*

(Forwarder 2, small Turkish company)

Even though Turkey implemented new laws and regulations, while following international protocols, the interviewed forwarders state that sustainability is no criteria for selection or requests by customers, as awareness and understanding are missing. In Turkey, price and quality count and only big and well-equipped (international) firms offer sustainable performances.

Suppliers believe there is awareness among international and internationally-acting firms, but not among many local ones. Companies have to operate sustainably in order to invest in sustainability. Furthermore, laws and the cooperation among business partners in terms of sustainability and shared assets and freight volumes are required.

Force, leading and punishment seem to be necessary to create an awareness of sustainability in people and companies in Turkey from the customers' perspective. Even though Turkey is ahead of other countries – when it comes to sustainability and other standards, the people are still very cost-focused. The environment is not regarded as important and education towards it is necessary to raise awareness. It is the government's duty to initiate this development in Turkey.

## External perspective

From the external, third, perspective sustainability is seen as a new aspect in Turkey, especially when it comes to SCM: Sustainability has to come first. Sustainability is mainly supported by international companies, due to corporate cost reduction aims, but is more a topic for the annual report than real application. Companies use gaps that laws and regulations provide. Rules are not always applied, as there are no controls. Furthermore, there is no desire for sustainable supply chain management at the moment. It is of low importance even for global players, as only the price counts. Sustainable development feels constant depression due to political instability, lack of governance and clear visions of companies:

*It's such a new issue for Turkey, but SSCM will be the last one within sustainability. Sustainability is currently only a topic for the company report and related to CSR. I'm a sustainability expert, but SCM is a very new issue for me and sustainability is very new for Turkey. I'm reporting to achieve the spreading of this concern. In reality it must be written to achieve understanding. SSCM is quite far away. Companies have to be sustainable first. There are currently no strategies on sustainability. It's more like being environmental friendly for cost reasons Main actors are international companies with business in Turkey, which implement rules, strategies and so on, from their motherlands.*

(Consultant 1, CSR Consulting)

*The sustainability agenda grows slower than we hope, due to the political instability<sup>18</sup>. These impacts stop the investigation towards sustainability; it's like a political crisis. It continues later on, but all this creates obstacles to continue*

(Consultant 2, Social focus of sustainability)

*In Turkey sustainability means quality. It's used as a concept, like looking at a book description, but without understanding the essence. If something is affordable, it is sustainable.*

(NGO 1)

## Patterns

One of the patterns is that small and local companies are seen as less informed and less interested in sustainability, while big, international-acting firms are more aware of the triple bottom line-idea. This is triggered by customer requests or the companies' origin in Europe. Another interesting pattern is the aspect of force. According to the interviewees, companies in Turkey must be guided towards sustainability by mandatory laws and regulations. The third pattern is the request for better education, both in schools and in professional training. Ideas on how to implement a better understanding were limited to these two aspects mentioned by the interviewees.

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<sup>18</sup> The interviewee referred to aspects like Gezi, Berkin Elvan or the Soma mine incident in 2013 and 2014.

### 5.3. Opportunities and drivers for implementing sustainability in a supply chain

#### Opportunities

The opinions on opportunities of sustainable performances, especially in supply chains, differ once again: small or local companies see no reason for implementation, while international and big companies recognize the benefits from sustainable operating. Reduction was named as main opportunity and main driver cost. This was related to consumption and waste production. Higher standards, process improvements and gaining a competitive advantage over competitors were also mentioned as benefits of sustainability in Turkey. Among forwarding agents, multimodal transport was seen as key performance of sustainability in transportation. The resulting benefits are a higher efficiency, bigger volumes and therefore better economy of scales:

*There are no advantages, as the freight price stays the same. The customer is only interested in the freight price – in Turkey only the price counts.*

(Forwarder 2, small Turkish company)

*1. Environmental aspects and 2. Economic aspects: If emissions decrease, you save money, if you use less gas you pay less.*

(Supplier 3, packaging supplier)

*Export figures can benefit from sales to sustainability-requesting countries. The Turkish market won't benefit from it.*

(Supplier 2, chemical manufacturer)

*There are no reasons to implement sustainability, as there won't be any impact to our business development (Forwarder 3; middle-sized Turkish company). If there is contract bidding and the last instance, the price counts, not eco-friendliness. Also for big companies.*

(Forwarder 2, small Turkish company)

One small supplier sees no advantages at all, as they predict a missing intention of the customer to pay more (Supplier 2, chemical manufacturer). Others see cost reduction, economy of scales due to inter modal transportation and social benefits due to better driver conditions, related to un-manned main runs in multimodal transportation as main advantages. Marketing opportunities and competitive advantage were also mentioned:

Customers see meeting future demands due to increased awareness among the youth, competitive advantage as well as cost benefits and sales opportunities to international markets as main advantages for the implementation of sustainability. Last but not least, the environment and its preservation were mentioned.

## External perspective

Opportunities due to process and energy efficiency, cost reduction, competitive advantages and marketing advantages are the most important benefits named by the observing entities:

*Companies aim at competitive advantages to enter global markets or to lead the market here. These companies are very few. It's rare in Turkey that companies have this vision. Therefore, it is not possible to discuss the matter of SSCM with them and the market structure.*

(Consultant 2, Social focus of sustainability)

*Small enterprises that produce sustainable products can sell them directly to the customers, who can go there and buy the product at its place of origin. This can be used for marketing, too.*

(NGO 1)

*Marketing issue, cost reduction, improved processes (deliveries without delays, deliveries to closest locations are reliable and the best for the environment).*

(NGO 1)

## Drivers

The most frequently mentioned drivers of implementing sustainability in the processes are the will to establish international business relations, laws and regulations, as well as corporate strategies:

*Multinational companies ask for sustainability – locals don't. Multinational companies are triggers (BASF and others): If you want a business relationship, you need to apply these standards. So they push towards this development. Owners of those companies are not Turkish (Supplier 2, chemical manufacturer). Global companies want to see themselves in these companies and expect the same standards, so ISO is not enough for multinational firms. They demand own surveys and standards or give the job to a service provider, which tracks the suppliers by the focal companies' standards. We are currently working on to get approved for two more certificates, which will enable us better contact to big global companies.*

(Supplier 4, chemical manufacturer)

When asking forwarders about their drivers to implement sustainability, the author once again observed the pattern discerning between small and big companies. But both have an economic perspective in common: The small ones see no further profit due to sustainable performance and complain that the customer doesn't prioritize it, while the big ones realized the benefits of implementing sustainability: Costs decrease and other benefits occur that can be added afterwards. Still, sometimes personal reasons were mentioned as main driver for implementing sustainability tendencies.



Human and personal issues are mentioned as drivers for suppliers, but main reasons to implement sustainable operations are business relations with international or Western companies and market trends. Laws and corporate strategies from Western countries' headquarters also force companies to apply sustainability.

### Patterns

Key patterns about opportunities of sustainability were once more the decreasing awareness between big/international and small/local companies. A strong focus on economic decisions is another pattern: Missing will to cover higher costs was frequently stated, which hinders the development of sustainable performances and the opportunity to save costs. Another driver is the influence of international companies and cooperation leading companies to implement sustainable performances into their business. Missing willingness by customers to pay for sustainable supply chains were mentioned, but the same interviewees did not, however, offer any solutions or plans to overcome this problem.

## 5.4. Opportunities for Turkey emerging from sustainable supply chain management

As opportunities for Turkey stemming from sustainable performances and sustainable supply chains, the development towards Western standards through inspiration by European countries, norms and companies were named. By the orientation, individual companies gain familiarity with the guidelines, which raises the general standard of the country. This will improve systems and processes in terms of safety, security and sustainability. From this success, innovation and a competitive advantage will be brought forth for Turkey. This is crucial, as Turkey's current rapid growth without sustainability might not last for long. Gaining an understanding in general will furthermore result in a raised sympathy of the government, which will invest in sustainability further on. Finally, opportunities to save costs were named. Still, some sources argue that Turkey's time to invest in sustainability has not yet come:

*Trying to join the EU can have a positive impact for Turkey (Manufacturer Interview 13). Some companies implement approaches of Europe (e.g. Service Provider 1), as European standards are better than Turkish ones (Manufacturer Interview 18). Big, global acting companies that invest in Turkey can act as mentor for Turkish companies and act as orientation inspiration.*

(Manufacturer Interview, pharmacy perspective 22)

*European regulations can be regarded as "contribution to improvement" rather than learning. Until the final adoption in EU countries, this mostly means an additional benefit, advantage and contribution specifically in our system in Turkey.*

(Forwarder 1, big Turkish company, written statement)

*The economic growth for Turkey is estimated with 6-8 %. Therefore, sustainability is necessary to achieve and to continue it.*

(Manufacturer Interview, pharmacy perspective 22)

*Turkey has other problems. Sustainability is no issue at the moment.*

(Customer 2, Turkish chemistry product distributor)

For the focal company the achieved standards are seen as source for competitiveness, competitive advantage and further development of the country. Furthermore, sustainability is needed for Turkey as an import-dependent country, in order to keep its growth constant.

The forwarding companies stated that the collaboration with multinational companies, the support through expertise and the application of European standards helped and helped them in becoming successful and innovative (Forwarder 1, big Turkish company; Forwarder 4, big, Europe-wide acting Turkish company). Opportunities for Turkey lay in a development towards German standards (Forwarder 6, big, globally acting French company). The orientation towards multinational concerns, their support and an increasing awareness for the whole country can be drawn. Furthermore, examples like Austria or Italy show that a government can support sustainable supply chains through limitations and regulations in transportation practice (Forwarder 6, big, globally acting French company).

According to the interviewed customers, continued improvement and understanding, cost savings and the achievement of higher standards can be opportunities arising from sustainable thinking. A better infrastructure can reduce road congestion. Furthermore, actions by the government can lead towards better laws and regulations and hence towards less road transportation.

### **External perspective**

Constant, sustainable growth for the country is a sustainability-related benefit that can be achieved for Turkey:

*This is the opportunity to grow sustainably. If a paradigm shift and understanding is achieved while growing, a comprehension that sustainable growth means constant success as green country is developed. If ignoring this, the growth will not last. It's a trend and companies will go somewhere else. Turkey will get stacked with its consumption habits and limited production opportunities.*

(Consultant 2, Social focus of sustainability)

### **Patterns**

One clear pattern can be understood: Cooperation with and inspiration by Western countries, standards, regulations and companies is appreciated and considered as beneficial for Turkey and its development. Strategies to achieve such cooperation, especially when it comes to aspects of confidentiality, were not mentioned.

## 5.5. Experienced challenges in implementing sustainable supply chain management and general challenges for SSCM in Turkey

In the following, challenges that were experienced by companies aiming to implement sustainability in their supply chains, as well as general challenges due to the conditions in Turkey, are summarized. Challenges were enumerated by the interviewees in various forms and levels. Missing infrastructure, cultural issues, a distinct desire for luxury goods of Turkish citizens and a missing awareness about sustainability were named. Lack of nature protection laws, lobbying, corruption, an unstable inner-politic situation and governmental issues are seen as harmful for the development of sustainability and green supply chain operations. Lack of education, expertise and awareness, short-term thinking and missing support from the government hinder people and customers to pay and to request eco-friendly standards on one hand. Competition, price pressure and an unstable economic background for individuals and companies create a low prioritization of sustainability on the other hand:

*There is 100% road transportation in Turkey (Manufacturer Interview 21; (Manufacturer Interview 1). Inter modal is more and more difficult in Turkey. Infrastructure is the problem: We need more effort for investment of train and port infrastructure, not just in truck fleets (Forwarder 4, big, Europe-wide acting Turkish company). One main problem for railroad transport is the monopoly of the operator in Turkey (Forwarder 5, Austrian rail-freight provider). There was no investment in rail infrastructure between 1950 and 2000, as the railroad was seen as being communistic – therefore it has no big role in TR.*

(Forwarder 6, big, globally acting French company)

*Folk needs to have a certain level and has to understand the benefits, and then the point is given, to permute it. Take the Gezi Park as example: Only educated people knew about it, the average people did not. Poor and uneducated people haven't been there, rich people haven't been there. Only the educated middle class participate. (Forwarder 2, small Turkish company)*

*Customers don't ask for it. If they would, then we would have to implement these issues. We have to act according to our customers' demands (Supplier 3, packaging supplier). Customers like colorful products that don't look natural. Customers want the most luxurious-looking products to create attention and prestige.*

(Supplier 1, textiles, work safety)

*People see these aspects only in general, not in detail. They don't know the reason of sustainability, health or safety issues, of recycling or material re-usage. People are not trained enough to meet the regulations. In Turkey, everybody tries to do everything, but most providers are not very educated or skilled (Forwarder 1, big Turkish company). The rules are good, but nobody knows how to check and how to control them. There is a lack of information from the government of how to apply the*

*rules. Instead of providing information and guidelines, the new law comes and nobody knows about it.*

*(Customer 3, manufacturer of hygiene products).*

*When it comes to laws and regulations – the government comes to BASF to ask questions with a low level of expertise, to gain suggestions by the company. The government doesn't understand why money is spent for sustainable issues – they only see and know investments for monetary benefits.*

*(Manufacturer Interview 15)*

*If the government does not establish rules or regulations, nobody follows. As human being you should not use harming things, but customers don't care. The profit counts, not humans or the environment.*

*(Supplier 1, textiles, work safety)*

*There is no belief in the government and no support by it. Turkey is divided into Atatürk and Erdoğan. The government is too religious. There are too many Muslim followers in Turkey: This stops development, as the history shows.*

*(Supplier 1, textiles, work safety)*

The focal company's employees mentioned a high number of challenges. These range from missing infrastructure, a traditionally strong road transportation competition and lobbyism, to a corrupt, unreliable and sometimes unqualified government; lack of laws, regulations and their observation, in terms of nature protection. Also, the geographic size of Turkey, its young history and cultural specials were mentioned. Lack of education, expertise, and sustainable awareness, the special demands as an emerging country and its interest in procurement and growth follow. Short-term thinking, market pressure and the prioritization of quality and prize are stated as typical Turkish mentalities. But also economic fears, local and international competition and the lack of governmental taxation support are issues hindering the development of sustainability in Turkey: Finally, the will to pay extra for sustainable performances was mentioned.

Main obstacles from the forwarders' perspective are the missing will to pay for more expensive operations, shortcomings in the Turkish infrastructure, which hinders intermodal transportation and generally, the attitude of customers towards sustainable thinking. Hindrance towards a general sustainability development exist in Turkey and in the Turkish markets: The lack of regulations and their enforcement; infrastructure and equipment, expertise and specialization, 100 % road transportation, unstable politics and its missing ability to implement laws, standards and its observation, the lack of awareness and prioritization of sustainability by customers and society; emerging country-typical obstacles like missing justice, corruption, as well as traditional Anatolian and cultural behavior are named among others.

The feedback from the suppliers shows the importance of price, the necessity to be able to afford sustainability and the noncompliance with laws, if companies are not tracked and checked. Also, a desire for expensive, fancy, non-environmental products is presented. High taxes, the government and its missing support in terms of sustainability investments, as well as the discrepancy among opposite political thoughts<sup>19</sup>, the lack of environmentalism laws, highly religious tendencies among the population, focus on the lowest price, lack of demand for sustainability and short term thinking are considered main obstacles against the development of sustainability in Turkey. The feedback from the suppliers underlines the importance of the price, the necessity to be able to afford sustainability and the disobeying of laws. Still also a strong preference for expensive, fancy, non-environmental products is present. Missing governance and the related difficulties, the special cultural and attitudinal situation of Turkey, torn between Asia and Europe, and the possibility to save costs are the main arguments.

Competition and price pressure from Asia are mentioned by customers as harming factor for the implementation of sustainability and sustainable supply chain management in Turkey. Furthermore, lack of awareness, understanding, expertise among partners, competitors and poor support from the government hinder development. The big gap between domestic and international companies' approaches and understanding of sustainability complicates establishing the concept in Turkey. Additionally, a lack of renewable energy is mentioned.

### **External perspective**

Massive distances, two main consumer regions in Turkey (Istanbul and Ankara) which constitute one fourth of the population and the focus on road transportation were highlighted. Furthermore, lack of social security and the prioritization of other issues such as fighting black labor or safety, quality or cost saving are hindering the development of sustainable supply chains in Turkey.

*Quality is important, but only for the best possible price. If it is good enough, companies buy the cheapest. This is an obstacle for supply chain management and for local development.*

(Consultant 1, CSR Consulting)

*It is a bad situation in general. The electricity industry is a mass; the agriculture sector is the same. Most goods are consumed in Istanbul, where 25 % of the population lives. Even if you produce something, the local markets produce only for the big cities of Istanbul and Ankara and to do this, transport is necessary. Transport over massive distances, with high footprints of the products. It is cheap in price, but there are no benefits for the community and only damage for the environment remains.*

*The government focuses on road transportation, which is not sustainable: Small shipments with a lot of labor and flexibility. Sea transport can be achieved through*

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<sup>19</sup> This means a discrepancy between a modern and a conservative, Islamic ideal of Turkey as republic.

*better planning, which is more efficient. There is no hope for sustainability in transportation, there is no diamond, and it's just a conveyor belt.*

(NGO 1)

## Patterns

Main patterns in challenges are a missing local, social and governmental awareness, missing expertise and therefore a missing understanding; the will to pay more and an absence of disposition to invest in sustainability. The government is mentioned in many cases as cause: Education, laws, infrastructure, support and generally well-being within the country are not necessarily given. These aspects symbolize not directly mentioned desires and requests of the interviewees: Better governance by a skilled government, efficient laws, supply chain infrastructure, changes in demands, more education and a general development of Turkey.

### 5.6. Towards sustainable supply chain development in Turkey

Potential for Turkey's development towards more sustainability is mainly seen in the government and society: Laws, rules and their enforcement, professional training and basic education, a good and fair government, an aware society and creation of knowledge about non-monetary value are mentioned repeatedly. This will lead to better standards, a stable economy and a better infrastructure for Turkey. Furthermore, support by Europe and cooperation with international brands is emphasized. Better market and economic conditions would affect the development positively, too:

*Minimum standards and safe live conditions are needed to give the spreading of sustainability a chance (Manufacturer Interview 7). Support from companies and especially the government (Manufacturer Interview 12). More governmental control (Manufacturer Interview 13): Without laws and force, nobody obeys something.*

(Manufacturer Interview, transportation, 17)

*Create understanding and awareness through education: Showing them non-monetary values and benefits (Manufacturer Interview 8). More governmental advertisement: Broadcast to spread information, to reach people, also during peak hours, not only during the night. Push the people to think. Create self-awareness that can then switch over to others and can create a change from the inside. Understanding of resource limits: higher prices for national resources like water and oil (Manufacturer Interview 9). Better education system: Creating awareness makes people believe.*

(Manufacturer Interview 10)

*Children have to create awareness. Not only in transport issues. It is required in all aspects and elements. It's hard to change old people (Forwarder 1, big Turkish company). Education means 50 % of Turkey's success and opportunities. It doesn't make sense to change something for the current population. They are too old, they*

*won't change. The children have to be educated now. By their parents, by schools and social environments.*

(Forwarder 2, small Turkish company)

*It's necessary to increase the customer awareness: The market will follow. Customers request special issues because others request them too. Main triggers to implement sustainability in Turkey are the industry or laws.*

(Forwarder 1, big Turkish company)

*I believe in the young people. They will change the situation in a couple of years. Things have to get developed and get inspired by other countries and other best practice. Gezi was started from a green purpose<sup>20</sup>.*

(Supplier 1, textiles, work safety)

*Support from multinational companies: International companies are important but can also ruin the market: hope for support rather than competition.*

(Manufacturer Interview 11)

*Co-operation with customers like BASF, which originally come from EU-standards, but also operate in the Turkish market for a long time. Such customers can support implementations with their know-how and human resources as well as by supplying training.*

(Forwarder 1, big Turkish company, written statement)

Asking the focal manufacturer's employees about their wishes of development (including utopic ones), mainly the elimination of hindering aspects are named: laws, rules and their observation, trained, aware experts and politicians, a fair and well-behaving government, an sustainability-aware society and customers; educated and skilled people and experts, better standards for Turkey, a stable economy and better infrastructure. But also aspects like support by Europe and multinational companies, cooperation among industries and companies, less competition from abroad, as well as safer streets are hopes for future Turkey.

Justice, standards, understanding about non-monetary values, legal development and sensitivity about the issues were named by forwarding agents as main problem-solving aspects for Turkey. The awareness about sustainability and the will to pay for it have to be raised, for example through education, seminars and schools, especially for the young generation. Finally, the role of multinational companies with expertise, know-how and education is crucial for Turkey's development towards sustainability; highlighted by international, further-thinking service providers.

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<sup>20</sup> The protests started as the government planned to cut trees in the central park in Istanbul, a place where citizens used to relax.

If companies don't apply sustainable and environmental friendly performances due to cost-issues, they have to be forced by laws and regulations, suppliers believe. The young Turkish generation, the development of niche markets and the inspiration from abroad, as well as current riots and signs of protests against injustice are seen as hope for Turkey and its development towards sustainability, especially by internationally-acting firms.

### **External perspective**

Education, pressure and guidance the interviewed consultant agencies wished for the market to be achieved. Infrastructure and investment in harbors and multimodal transport are seen as solutions for transportation issues:

*Pressure by laws, the market and by demands.*

(Consultant 1, CSR Consulting)

*Educate the end customer! Basic education is a big issue in Turkey. Many people just gained basic education. To influence the customer choices will be a long journey for Turkey.*

(Consultant 1, CSR Consulting)

*Lack of knowledge (capability, qualification, resources and will): People should understand that sustainability means benefits.*

(NGO 1)

*Harbors and management would be necessary and the industry must be settled around the harbors. Before the Republic, all industry was around the harbors. The government thinks that every little area must have its own industrial and agricultural zone. There is an increasing demand of employment in the industry, but the demand is not knowledge-intensive. Cheap and uneducated labor is required. So sustainability is not affordable. Own resources and added value are needed.*

(NGO 1)

*Less manipulation for benefits of the own sector by politicians – this is not sustainable for Turkey. Centralized decisions are necessary, as well as negotiations with each other.*

(NGO 1)

*Turkey wants to become an energy exporter, but you need to be sustainable for that. You have to work sustainably if you don't want to lose your resources (wetlands, water, ...). All companies want to emerge and to grow. But that can become your own suicide. The decision makers should know what they have to do, as they are only smart people: safe food and water resources for the country!*

(NGO 1)



## Patterns

Obstacles related to the political situation are strong and the development of Turkey is strongly related to the behavior of the government. Focus is given to the young Turkish generation, which, due to better education and future-oriented thinking, as hope and enabler for a better future in Turkey. Related to this is social awareness. Furthermore, learning from the West and cooperation with Western companies is seen as key pattern for a development towards sustainability in Turkey. Though, it seems like every actor is pointing to the next one down the supply chain: Suppliers and forwarders request payment and valuation by the manufacturers, the manufacturer requires better payment by the customer and they miss demands from the end consumers' side. This can be seen as a "hot potato" situation. It indicates a missing understanding and awareness about the holistic aspect of SSCM and the necessity that every actor does his part. It is important that all actors take action, not just one. Otherwise, implementing a sustainable supply chain is impossible.

Nonetheless, some positive tendencies towards the development of sustainable supply chain management in Turkey exist already: The orientation towards Europe and Western norms, cooperation with international companies with higher standards, leading regulations and an increasing awareness about sustainability were mentioned. Still, it seems that the hindering issues dominate:

*For Turkey, we have to say, things are different than it was 10, or even 20, 30 years ago, because the quality was widely improved, like in many emerging countries. This aspect is good because people do not only improve their economic situation. They also start to improve on social issues and so on. They see and ask more for these standards.*

(Manufacturer Interview 3)

*Turkey is on a good way and will become more efficient and greener as a country. We signed the Kyoto Protocol, but I still see pollution of rivers and air. There are still issues to fight against. Civil organizations appeared recently and became active. This can be seen as positive or as negative, but Turkey is in a good direction. I think the aspects are more positive.*

(Customer 1, multinational consumer goods)

*Istanbul is lucky, due to the wind etc. Maybe there is pollution, but people don't feel it – compared to China for example, where you feel the immense pollution due to car emissions. There are emission tests here, in Tuzla, too and it's very green. But Dilovası is bad. E.g. the steel factory opens the filters during the night. This must be sentenced. Laws exist but not obeying them must be punished.*

(Customer 1, multinational consumer goods)

The main hope for the focal manufacturer's representatives occur from the facts that Turkey is heading towards the right direction already, especially due to the convergence to Europe and

the activity of multinational companies within the country. Those bring new, developed standards with them and in turn request them from their partners. They spread knowledge, train and educate people about sustainable supply chain methods in Turkey. Investment in infrastructure projects is seen as big hope towards inter-modal transportation. The young population and the increasing education as well as growing wealth are seen as triggers for sustainability.

Customers believe that Turkey is on a good way, even though there is a lot of space for improvement. Civil organizations have been appearing in recent years. Still, a feeling for the importance and the impact of non-sustainable performances seems to be missing in most interviewees.

### **External perspective**

Hope is based on the understanding of monetary benefits which will improve the ecological and social impact along the way:

*The good thing is: It reduces costs and increases sustainability. It is not an ecological approach, it's a cost approach. If you use resources efficiently, you decrease stock expenses and warehousing costs. It's the dream of every company to decrease these costs (capital commitment costs).*

(NGO 1)

### **Patterns**

Some good tendencies were mentioned, but still not in all areas. A lot of room for improvement remains. So far, guidelines or actions steps on how to push the development were not mentioned.

## **5.7. Some further thoughts: Forwarding the “hot potato” of responsibility in terms of SSCM**

During the interviewing process, the following patterns were frequently mentioned: Pointing to the next actor down the supply chain, request of monetary benefits due to sustainable performance, demands of payment from actor to actor and forwarding of responsibility to the next SC stage. As these aspects play such an important role, the researcher was asking for the customer's opinion about them. As last actor of the focal manufacturer's supply chain and final financier (not taking the end consumer into account), their sustainability approach on a corporate and local level as well as their general willing to pay for sustainable performances, were seen as important factors with regard to a sustainable development within the supply chain. This was repeatedly mentioned by all actors: the focal manufacturer, forwarding agents and suppliers request more support by their clients. Therefore, the researcher asked partners of international manufacturers what they expect of their customers' behavior. Especially as international manufacturers represent the main type of customers within the supply chain of

the focal manufacturer. Further on, it was aimed to understand if differences between the local and the corporate understanding of sustainability occur within these corporations.

### **Expectations towards manufacturing customers**

Interviewed forwarders expect cooperation, knowledge exchange and the spreading of know how. The will to pay for sustainability and also the trust in small companies that are less profit-driven were mentioned. Furthermore, they expect support and the implementation of laws, in order to raise sustainability in Turkey:

*Co-operating with us and support us in setting the standards for sustainability. To commit themselves more on forming more transparent, liable and high quality customer relationships. To share more often their knowhow by organizing more internal training sessions specifically designed for their service providers.*

(Forwarder 1, big Turkish company, written statement)

*We must invest in the industry and share the knowledge with customers and competitors through meetings with universities, customers, and companies to share the results. General will to invest for customer demands and needs is necessary. When the customer has sustainable ideas, we follow (Forwarder 4, big, Europe-wide acting Turkish company). Spread awareness: Being open and clear (website, meetings).*

(Forwarder 4, big, Europe-wide acting Turkish company)

*We expect global companies to trust in us small forwarders, as even though they arrange agreements with big players, those buy our trucks from small companies anyway.*

(Forwarder 2, small Turkish company)

*Applying of requesting sustainability and using policy gaps: A sustainable supplier agenda is only a matter for global companies. Sustainable companies see the opportunity without a sustainability agenda. In Turkey it depends on the culture of the company. In Turkey many companies don't care about the environment. There are sophisticated, ecological/sustainable programs in Europe, but not in Turkey. They see Turkey as wasteland and also consumers don't care. In this way, Turkey stays a wasteland.*

(Consultant 2, Social focus of sustainability)

### **Corporate and local sustainability perspectives of manufacturing customers**

Due to the results, potential differences between local and global approaches of sustainability within global, corporate firms were aimed to discover.

Business with Europe and targets set by the headquarters in Europe mark the attitude of multinational companies' business units in Turkey related to sustainability. Some companies

are innovative compared to Turkish standards, but in the country on the border between Europe and Asia, safety and quality are more important than environmental-friendly acting. The lack of development of an emerging market compared to established Western markets and the resulting differences become clear, too:

*This is a problem in emerging markets and can be slightly accepted for Turkey too. Turkey as a part of Europe wants to become a part of the EU. Therefore, loads of regulations and rules have to be applied. It's the EU perspective that triggers. Standards are requested from the head office in London and by the Ministries in Turkey. London (our headquarter) is interested in health, safety, and environmental issues.*

(Customer 1, multinational consumer goods)

*The priority in Turkey is safety, that's the investment focus while we concentrate on all aspects globally. It's the end of the process in Turkey. We receive regulations of the global concern. Of course we are active but we need much more time than developed factories or the general commitment. Other countries had much more time to react than we have now. We have more pressure than them (only 1 year). Compared to other sites we are a bit late, but have sustainable projects, too.*

(Customer 3, manufacturer of hygiene products)

*The global perspective can be read online, but there are other priorities for Turkey, there is no focus on sustainability here. These issues started 20, 25 years ago in other regions, but not yet here. We aim to reduce emissions by 50 % between 2005 and 2015. That's a global approach and is also valid for Istanbul. It's the same for electricity consumption.*

(Customer 3, manufacturer of hygiene products)

For the interviewed customers, sustainability is seen as a future aspect and probably a future demand, but it is not an issue of today, as demand from end customers is low. If the end customer would pay, and request, the manufacturer would follow. Still, there is not much experience in purchasing sustainable solutions and having the choice to pick them. Nonetheless, cooperation within the supply chain and an exchange with each other is welcomed, as costs, waste and by-products could be shared. Companies would not pay for sustainable performances, as it's no priority, due to lack of understanding and missing force by law:

*There is not enough pushing from the customers. People don't have the money or are maybe not ready to pay for it. It depends on the income of the people: rich people can do it.*

(Customer 1, multinational consumer goods)

*If the customer pays for it (mostly global companies pay, locals don't). This will be performed by customer requests and more and more of them request it.*

(Customer 1, multinational consumer goods)

*We would pay more for safety issues, yes. Environmental issues are in the scope for sustainable suppliers (ISO norms). I can say that we are not in the position to choose expensive suppliers just for an environmental reason, but we can do it more than before. In forwarding the customers are responsible for the transport of end products. Big players in Turkey are aware. For raw materials and transportation we request licenses, but not in terms of environmental issues. We "believe" in big players that drive for us, like Schenker or Mars Logistics, but we don't know it.*

(Customer 3, manufacturer of hygiene products)

*No, as it is no priority. People have no understanding to solve problems through sustainability. The budget has priority. The bad thing is that if there are savings for a company in operations, we tell them not to spend and rather invest the money in sustainability. Some do that and gain benefits, some don't. It is important to continue to gain benefits through sustainable investments and to reserve money for the sustainability agenda.*

(Consultant 2, Social focus of sustainability)

*Economic rather than ecologic perspective: revenue and profit is everything.*

(NGO 1)

## **Patterns**

Interviewed service providers request cooperation, knowledge exchange and benefits for sustainable performances from their international customers.

For these international manufacturing customers, safety and quality are the first priority of investment while environmentally-related expenses have to wait. Furthermore, sustainable development in an emerging market requires more time and money than in a developed country, due to the deficit in development. Still, no different approaches between the corporate and the local sustainability performance exists, it simply costs more and needs more investigation. Additionally, the time is not seen to be right yet.

## 6. Results and Discussion

This concluding chapter will point out the achieved most important findings, discuss them and will answer the research question. After the current situation in the supply chain management industry in Turkey was explored and understood, the previous chapter identified key aspects along with important patterns that hinder or support the development of sustainable supply chain management in an emerging market. Those aspects were described and explained<sup>21</sup>. Based on the findings this chapter aims to summarize the results of the case analysis and to discuss them in detail. In addition, propositions of the major topics of the master thesis will be drawn to provide recommendations for a guideline that supports the improvement of the situation and which will support companies looking to implement sustainable supply chains into their processes.

### 6.1. Results, key patterns and answers to the research question

After completing the findings from the case analysis, the following key patterns and results were uncovered:

#### Key patterns

- Missing awareness was defined repeatedly and by all interviewed actors.
- A high prioritization of monetary value, lack of will to pay and in general, desired monetary benefits out of sustainable supply chains were detected.
- The government is regarded as an obstacle in various aspects: from social standards or the treatment of citizens to investment, education and legal concerns hindering the development of sustainable supply chain management in Turkey.
- The orientation to and cooperation with Western institutions is seen as an advantage and hope for the development in Turkey in general and in terms of sustainable supply chains.
- Every SC actor is referring to the next one down the supply chain, requesting its responsibility and will to pay for sustainable performances: A “hot potato”-effect of forwarding action-taking occurs
- Higher cost and time investment hallmark the biggest difference of implementing sustainable supply chains in an emerging market compared to a developed one

#### Summary of the findings

- There is a low degree of awareness about sustainable SCM among the SCM actors and generally a low prioritization of sustainability in the Turkish industry
- There is a factor of international activity that influences the degree of sustainable supply chain management understanding and activity in companies
- The introduction of new laws is seen as important to create sustainable performances in Turkey

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<sup>21</sup> The most important statements of all groups of interest can be found collected as overview in Appendix 5.

- More education and training is needed
- Cost advantages and orientation towards the West are the main drivers for sustainability implementation in supply chains in an emerging market
- Progress on social and governmental level is crucial for a further development
- Know-how, education and governmental support are seen as necessary development steps towards sustainable supply chain management in Turkey
- Even though there is much room for improvement, Turkey is seen to be on a good way of development by some participants

This summary of findings, conducted through a detailed statement collection and analysis of the different focal manufacturer's supply chain actors' about sustainable supply chain management and its implementation in an emerging market enables to answer the research question of Chapter 1.2:

*What are the opportunities and challenges that have to be considered by an organization, aiming to develop a sustainable supply chain in an emerging market and what is necessary for its implementation?*

Challenges related to the implementation of sustainable supply chain management in an emerging market outweigh the opportunities, due to the general lack of development in emerging markets. These challenges are manifold. Lack of awareness and prioritization of sustainable performances and its benefits among partners, customers and the public is crucial. To understand the necessity of paying higher costs to achieve gains later and accepting long-term or non-monetary benefits, training and education is necessary. In general, overcoming the lack of education and expertise is an important challenge, which can be influenced by the investigation of organizations themselves<sup>22</sup> while economic issues are part of the government's responsibility. The government must be convinced to support the development of sustainable supply chain management in an emerging country, on a legal basis as well as through fiscal, educational or monetary benefits. It's a challenge regardless of whether the government has understood the importance of sustainable supply chains or not. This includes necessary infrastructure and social security. Furthermore, organizations have to develop a sustainable supply chain thinking within the company and its supply chain, through education, training and codes of conduct: Organizations have to understand that every single part and every partner of the chain must act according to the organization's specific standards. The supply chain must be regarded holistically: as an entity, not as interacting parts. Every actor must understand and contribute its part to the sustainable success and to the supply chain's vision. Furthermore, companies have to be aware that investments in sustainable supply chains in emerging markets require higher costs, more effort and more time to become established, compared to Western, developed regions.

Opportunities for sustainable supply chain development are many times originate from local companies looking to create international, Western-oriented business relations that are influenced by European standards and that are forward-looking. These are the right partners

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<sup>22</sup> Through knowledge exchange, information sharing, training and education, e.g.

for collaboration, willing to invest and learn from Western firms. If the collaboration and establishment works, long-term relationships, cost-savings due to better, more efficient processes, less consumption and optimal use of resources emerge. This is beneficial for both the companies and Turkey.

In order to implement sustainable supply chain management, high effort of education, training and creating awareness is necessary, holistically for partners, customers and the public. Companies have to develop a vision and have to financially invest in SSCM. Collaboration, knowledge and best-practice exchange is needed to convince stakeholders and politics of SSCM's value. Making sustainable supply chains mandatory as a basis for cooperation will create demand and a market, even without laws. The organization aiming to implement SSCM must lead, guide and push the development of sustainability in supply chain management as one entity and from all levels of employment.

The following paragraph contains a discussion as to which extent this is possible.

## 6.2. Distinctive features of SSCM implementation in an emerging market

In the following, the most important propositions emerging from the results, based on the findings from the empirical data collection, are stated and discussed.

- **There is a lack of awareness about general sustainability and even more about sustainable supply chain management in Turkey and its supply chain industry**

The level of understanding about sustainability, protection of nature and from them, occurring benefits, are low. Roughly half of the employees of the focal company that were interviewed were fully aware of the term "sustainability". Among the SCM partners, a similar ratio was observed. Some companies had no understanding, no priority and no interest in the topic, while others invested and led the market. Size and international orientation are influencing factors regarding the degree of awareness. Lack of understanding and low financial opportunities are affecting the ability to request sustainability and sustainable performances, both in society and industry. This aspect is crucial, because the economic aspect is centric when it comes to sustainability. The benefits sustainability brings absolutely have to outweigh the costs. If there are no promising financial benefits, companies are not willing to invest. This is at least in part due to Turkey's status as an emerging market that is highly dependent on imports. Profit and sales are prioritized before environmental or social aspects as non-monetary benefits are not considered as important.

Spreading and creating awareness in Turkey as emerging market is therefore seen as an urgent need, in order to educate citizens, customers, companies, the government and all involved stakeholders about the benefits and brought forth sustainable behavior and sustainable products (Gold, Seuring and Beske 2010): "How can a problem be solved when it is not perceived as a problem? How do you bring awareness to people when their governments are not supporting these activities?" (Andic et al. 2010, p.52). If people can define the term SSCM, awareness about its benefits can be generated. The importance of long-term benefits



as a trade-off for short-term expenses must be taught and explained in the business. Willing actors must be supported. Creating awareness means creating demand. Demanding customers are willing to pay and therefore allowing the financing for the implementation of sustainability.

- **There are benefits to gain by implementing sustainable supply chain management, for companies and for an entire country**

Various benefits, opportunities and advantages arise from sustainability and sustainable processes (Andic et al. 2010). The most frequently mentioned aspects are cost savings, consumption reduction, process efficiency, competitive advantage, opportunity for new business relationships with Europe as well as marketing aspects.

As the aspect of costs, savings and profit play an important role in Turkey, the financial and economic benefits have to be explained and highlighted first. Direct cost savings due to more efficient production and savings of material and electricity can be measured in short-term cycles; new markets and business relationships with Western countries and partners deliver mid-term sales and income. Long-term benefits can be reached through lasting and amortizing investment in sustainable assets. It is important to provide information about these benefits, to educate, to provide best practice examples and to offer help and support in order to create a paradigm shift within the business. Once established, the market will request sustainability itself. This mechanism is once more driven by the development of awareness which will spread demands from the up-flow stream of the supply chain (Andic et al. 2010). As soon as the financial understanding is established, the environmental and social benefits can be added as additional advantages – as the example of *Forwarder 4* demonstrated, which started with multimodal transports due to requirements in Europe and which understood the environmental value over time and nowadays keeps track on improving its carbon footprint steadily.

Furthermore, it must be said that benefits are not limited to the applying companies. The whole industry, the whole market and economy benefit from higher standards and better performance. A development towards Western standards will improve Turkey's economic role in Europe and in the World. This must be emphasized as Turkey currently has an excess of imports to exports. The lack of raw materials and especially natural resources<sup>23</sup> makes it necessary for the country to establish sustainability in order to become independent, competitive and to keep the level of economic growth, as well as to provide the basics of living for its inhabitants (Datamonitor 2012)<sup>24</sup>. The current and expected growth of population, demands and ambition requires a responsible approach (Datamonitor 2012).

In addition to the awareness aspect, a social and monetary security must be provided. Interview participants stated that other aspects are more important than sustainability (Forwarder 2; Supplier 1). Daily needs have to be prioritized. Long-term investment is impossible when short-term survival is risky (NGO 1; Customer 2; Consultant 2). In these cases, opportunities through governmental support in terms of taxes and subsidiaries or

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<sup>23</sup> has a water per person ratio far below the global average (1,7 cubic meters compared to 7 cubic waters), which is enforced by population, economic and agriculture growth.

opportunities for loans have to be generated to help interested actors which cannot afford sustainable supply chain management. This must be achieved through a will and vision for a good development of a country or branch and can be supported by focal manufacturers too. As optimum solution, all investments should be sustainable and long-term, as they provide the best opportunities for success. Still, it is difficult to finance without support and collaboration.

- **There are more challenges to implement sustainable supply chain management in an emerging market compared to a developed country**

The amount of challenges is clearly taking the biggest part of the findings. As explained in the *Frame of reference* part, the conditions in an emerging market are different than in a developed one (Jayakumar 2013) and this fact was explored by the researcher in Turkey. Among all challenges, some were highlighted and pointed out repeatedly. Those will be discussed in the following:

1. An unstable political situation, the lack of proper laws and their enforcement leads to a low acceptance and perceived importance of environmental and social values in Turkey. This hinders a general development of sustainability, as a sustainability agenda is missing (Andic et al. 2010). Therefore, sustainable supply chain management is even more exotic. Shortcomings in planning ability and expertise of government representatives such as officers and clerks, impede the spreading of information. Missing guidelines to implement new rules and standards prevent a proper application. These aspects make it hard to improve new standards, as the responsible people don't know how to handle them themselves and therefore can't provide information or guidelines to companies that aim or are forced to implement these reforms. The implementation of new laws and regulations, such as the current dangerous goods law (ADR), needs years and still there exists a lack of clarity; equipment is missing and the responsible institutions don't possess the ability to deal with the issues.

Political instability, corruption scandals and disputed, strict leadership create anger and mistrust, sometimes resulting in riots such as in 2013 and 2014, where mass protests due to disputable political behavior were fought down with violence and where people died in the streets of Istanbul and Ankara (Girit 2014). These incidents stop the development of sustainability frequently. The government's focus on religion and conservative values polarizes the country. The support of minorities, sympathy for less educated, less wealthy voters in rural areas, as well as a strong religious view by the government, slow down the development of education and of a modern Turkey. Also, the aspect of safety standards and understanding of responsibility is a constant topic in Turkey. The recent mine incident in Soma provided a clear picture about the working conditions in some industries and the way the government responded created once more national and international incomprehension. Even deaths through national forces occurred once again (BBC 2014). In this case the question arises how far it is possible to expect an interest in social working conditions and sustainable development while national protests are defeated with violence. The political situation seems to remain the most discussed and difficult issue of Turkey, even one year after the Gezi protests. Its investigation is leading towards

- sustainability remains important and crucial, as many aspects are related to political decisions, like laws, trade regulations, subsidiaries, education and professional training.
2. Turkey as emerging country is led by short-term thinking of individuals, groups and companies. It is focused on growth: Demand is rising and personal enrichment is deemed to be the first priority. This leads to thoughts on future issues, future generations and direct results of today's activities to be of low priority. The lack of industrial, bureaucratic and democratic history is related to missing standards, basics and the shortfall of development in some areas. This leads to the current focus and prioritization of other more risky issues, like black labor and child labor. Furthermore, a perceived lack of justice, corruption, a lack of diplomatic solutions and political cooperation harm the healthy development of the country towards a stable inner-political situation and the implementation of cross-sectional sustainability.
  3. The "lack of education" also refers to professional education systems and basic education and results in a lack of educated expertise. Specialized, skilled labor is rare due to a history of "learning by doing", of trying to do everything without a proper background education and specialization. Education is lacking, especially in the Eastern areas of Turkey. This leads to weakness in professional understanding, of methodology, laws and regulations, business and economic philosophies and environmental issues. Knowledge of the benefits of (long-term) planning, sustainable behavior, quality and safety aspects, green logistics and sustainability in general, are poorly developed. These deficits in basic education, language skills, knowledge of the climate change and general property result in a general lack of awareness and in a poorly educated middle class, which seems to be the only group which is interested and active in environmental issues: "Awareness is at an individual level and thus in order for companies to become truly green, every employee needs to become environmentally conscious" (Andic et al. 2010, p. 59).
  4. Missing education supports the big focus on cost and price prioritization. Environmental aspects play a small role, only international and multinational companies are aware of environmental protection, which leads to a missing will to invest in sustainable supply chain management and a missing will to pay more for a green solution. The aspect of quality was mentioned separately to the importance of price, but has the same background: Both, price and cost aspects push environmental or social issues to the second rank of interest (Andic et al. 2010, p. 59).
  5. Few laws, mandatory regulations, standards and a missing enforcement through governmental monitoring create a culture of disregard and exploitation of the situation, in many cases. On the one hand, this supports competitive disadvantage for companies that obey the rules and that are tracked stricter, like international and big companies. On the other hand it motivates to use these gaps of lower standards too, which results in pollution and pollution of the environment and the country. This aspect is recognized in literature as well (Andic et al. 2010).
  6. The implemented, complex "Oriental" culture was named as an obstacle, due to its mix of Asian and European influence and a special emphasis on religion. This bears on a traditional behavior, of following a leader, which goes back to the Osman Reign and can still be felt: Guidance is needed and wanted. Nature is seen as personal belonging, which

complicates the establishment of natural energy resources. Reporting of misbehavior of breaking the laws is frowned upon, while the focus on quick and cheap solutions is strong. Price, quality and a short lead time count, a strong interest in luxury goods is common. This can be seen from the high importance that is placed on driving one's own car, as well as the importance of brands in Turkey.

7. Missing infrastructure and equipment hinder environmental-friendly transportation, as the necessary facilities for rail and sea transportation are lacking. Both transport modes are considered as being the modes with the lowest energy consumption and the lowest emissions (OECD 1997), but tracks, terminals and harbors are widely absent or under construction. For years there was no investment into railroad transportation, which was seen as communistic. The government advised to invest in road transportation and nowadays Turkey runs the biggest truck fleet in Europe (Written statement Forwarder 5).
8. Even though Turkey gained much success and recognition for economic decisions, the situation remains unstable and therefore uncertain. This creates planning difficulties and hesitating will to invest, which influences short-term planning and price focus, due to currency and exchange rate fluctuation. Furthermore, unstable economics, inflation, debts and income deficits raise fears that harm further investment. It leads towards actions aiming to secure the basics of living, instead of spending money for additional investments with potential future gains.
9. Modern business strategies are seen as hindrance for sustainable development: The focus on flexible, low-stock production strategies, like just-in-time demand more transportation, which produces emissions and pollution. Domestic and especially global competition creates internal and external price pressure and therefore the constraint of cost efficiency. This in turn leads then to the disregard of additional investment – e.g. for sustainability.

This list of challenges demonstrates the importance of improvement and development. This is necessary to establish sustainability and sustainable supply chain management in an emerging market. Furthermore, the differences to developed, industrialized countries are pointed out. Many challenges of emerging countries are already established standards in the West and don't need further investigation there, while the overcoming of those still need a lot of investigation in emerging countries.

- **Awareness about sustainability is fundamental for the development of sustainable supply chains**

Awareness is seen as the fundamental aspect for sustainability and its development. Knowing about sustainability is the basis of implementation (Andic et al. 2010)<sup>25</sup>. Sustainability is a very new approach in Turkey and in many other emerging markets as well. During the research it was discovered that understanding and recognition are very important as they trigger the general understanding and the comprehension of sustainability. Without knowing benefits, people won't appreciate them. No appreciation leads to a low prioritization and following low demand, which means a low will to invest. As lack of understanding and

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<sup>25</sup> This aspect is reflected by the title of the master thesis, too.

prioritization were identified among all entities of the supply chain and even the government was seen as not educated in sustainability (Andic et al. 2010), the focus on awareness as starting point of the research was proven. Awareness leads to people thinking beyond tangible or monetary values and in establishing awareness in society and industry, a market will be created, which will lead to a better overall performance. Awareness can furthermore help to bridge the will to invest into sustainability despite financial penalties.

Therefore, awareness has to be spread; society, companies and politicians have to be educated, trained and sensitized. Being aware of sustainability and sustainable supply chain management is the key of implementing it in an emerging market.

- **The government plays an important role in implementing and establishing a paradigm shift in a society and economy**

Based on the findings, the role of the government in implementing sustainable supply chains in Turkey is crucial (Andic et al. 2010). Various things have to be changed in order to implement sustainable supply chains in Turkey. Even though all interviewed actors are pointing at each other when it comes to responsibility for sustainable supply chain management, many aspects are driven or guided by governmental and political decisions.

Guidance by obligations through laws, regulations and rules as well as guidance by information, education and training must be provided to generate an umbrella of activities that leads to the establishment of sustainability and SSCM in an emerging market (Linton, Klassen and Jayaraman 2007). This includes the political clerks themselves. Education reforms and professional training are important to raise the understanding and ability to apply sustainability in social and professional terms. Furthermore, fair and equal conditions for all economic participants are important.

The government must request sustainable performances, reward investment in sustainability and must invest in sustainability itself. Sustainability has to become attractive for companies and citizens. Promotion affects the status of sustainability even more. Furthermore, social and economic security as well as inner stability must be created (Linton, Klassen and Jayaraman 2007).

Investment in ports, railway tracks and intermodal assets are necessary and a paradigm shift to relieve road transportation is important. Various opportunities therefor exist, from taxation, limitation of access, to subsidiaries. The government must provide governance in order to establish sustainable thinking in Turkey.

- **Cooperation with Western entities improves the new standards and development**

Cooperation with and inspiration from Western entities and standards are seen as one of the main opportunities for Turkey, its companies and aspiration of implementing sustainable supply chains. Due to the close proximity to Europe, its influence is important: “Europe enforces a wide range of regulations on Turkey. [...] It sees Turkey as a business partner, and how they do not want Turkey to face the problems they have had, particularly in the case of especially environmental issues” (Andic et al. 2010, p. 60). Close business relations are developed, an EU entry is still planned and various European companies use the excellent

location in Turkey to develop the market with branches and plants. Those companies that come with high standards, experience and history enable Turkish firms to gain from their expertise and know-how. Cooperation, knowledge exchange and collaboration are highly appreciated by interviewed Turkish participants and even the government was reported to look for inspiration at Western companies, when new regulations are introduced.

In order to develop sustainable thinking and practice, these companies can provide guidance and support. They must educate, train and share their experience. Collaboration along the supply chain, sharing of waste and resources as well as sharing of best practice and findings is seen as highly contributing. Furthermore, multinational companies must use their responsibility and influence to convince partners, political leaders and decision-makers of the benefits and need of sustainability, especially when they aim to implement sustainable supply chains in their own systems. They have to push towards related investment. Pushing towards Western standards, norms, enforcement and justice of laws as well as governance in the market are important and beneficial for the economy and the market of an emerging country.

### 6.3. Recommendations for actions towards SSCM development

- **Different factors influence the development of sustainability in Turkey actively: The governance, economic and human factor as examples**

As described before, one core parameter of implementing sustainable performances into a process, an industry, a society or a country is the awareness about its contents and benefits. From the previous argumentation, three key factors were identified as examples of challenges towards a sustainable SC development. These are the Governance factor, the Economic factor and the Human factor, as they were mentioned repeatedly during the data collection. All these factors are connected and independent, as Figure 8 visualizes briefly.

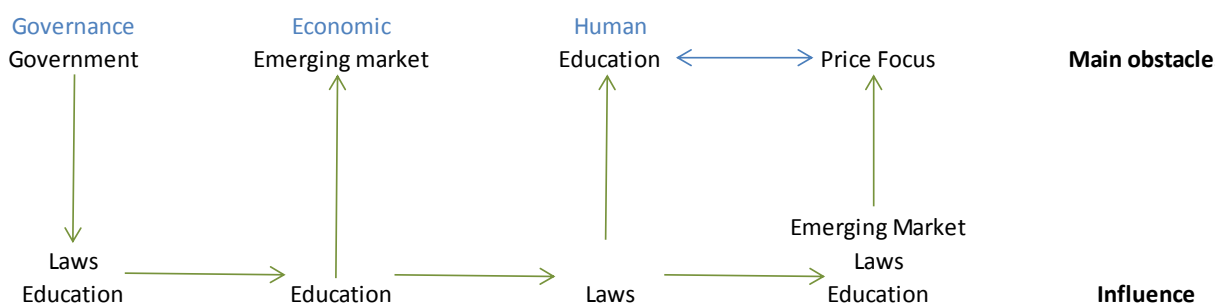


Figure 8: Interconnectivity of factors and challenges

Taking the interconnectivity into account, the involved entities have the opportunity to influence the development of sustainable supply chain management positively in a forcing or volunteering approach. Both the Governance and the Economic factor have these trigger opportunities, while the Human factor aims for awareness. The following paragraphs will detail the process and dependencies outlined in Figure 8.

1. The Governance factor symbolizes the possibility to create pressure through mandatory laws, rules and the tracking and observation of obeying them (hard option). If the rules are not obeyed, penalties and punishment create an understanding and (probably) awareness to follow the rules, as failure to comply would hurt the entity. The second option is the leading through understanding (soft option). It aims to create understanding through information, media, education and workshops. This triggers the people to invest, due to a stable environment, security, social wellbeing and support towards sustainability through tax benefits or subsidies.
2. The Economic factor impacts the investment in sustainable facilities, equipment and infrastructure, as well as products and services, both in terms of offers and demands. The driving instrument is market power and market pressure. If the market heads towards a certain direction and customers demand sustainable, green products, eco certificates or decent carbon footprints, the service provider has to deliver them in order to keep the business. If the competitors set environmental standards and gain a competitive advantage, competing firms have to follow in order to not lose out (both nationally and internationally). From the voluntary perspective, a stable economy, stable planning parameters, currencies and exchange rates create certainty. Certainty enables mid and long-term planning of investments, as sustainability is mainly future-gaining related (Carter and Rogers 2008).
3. The third aspect, the Human aspect, focuses mainly on the voluntary, the clear-thinking and foresighted human being. As all existing entities, companies, concerns, political parties, societies as well as financial and merchandise markets consist of human beings, the people form, guide and rule these social constructions. Therefore, the human part is the most important factor and can be improved through information spreading, education, training, expert exchange and best practice interchange. Providing and delivering the benefits of sustainable action creates awareness and hinders price or cost-related thinking. Awareness creates thought-provoking impulses and leads decisions; creates visions, demands and strategies and provides future targets. Furthermore, believe and understanding shape societies: It is easier to change people than complex, entangled, connected structures like capital, stock and commodity markets and their fluctuating character. Therefore, the aspect of awareness is one key towards the implementation of sustainability.

The described key factors towards the implementation of sustainable performances are triggered and can be influenced by different actors within the market.

- **Different groups of actors can actively influence the development of sustainable SCM in Turkey: Society, the government, companies and NGOs are examples**

The main actors of a society, a nation or a modern country are the government, companies, folk and non-governmental organizations, as well as the media as SCM-external entity. Referring to the interviewed participants, the core obstacles were related to governmental decisions (semi-optimal administration, missing planning ability, missing information spreading, lack of environmental and social laws and regulations, lacking investment in infrastructure and unstable economics as well as financial circumstances which impact the

social life); market and social attitude (an Oriental, conservative, religious, wealth-oriented, quality and price preferring society, that does not appreciate sustainable effort and therefore does not demand it, creates no benefits in sales for sustainable providing firms and therefore hinders its development); and corporate issues (missing application of laws, focus on reporting rather than on practical implementation of environmental regulations, lacking leadership and entrepreneurial visions and missing promotion). In addition to this, strong lobbyism (NGOs) and the threat of modern business structures were mentioned as hindrance towards the implementation of sustainability in the Turkish market.

While the reformation of modern business is barely realizable, the mentioned actors are able to change their acting and behavior. Four exemplary core actors are highlighted in the following that trigger the establishment of sustainable supply chain management in Turkey: the Turkish government, customers of every description, (multinational) companies and opinion-building entities such as NGOs and consultant agencies.

1. The government can influence the deployment of sustainable SCM performance through proper basic and professional (logistics, safety, environmental, economics and business) education as well as by training its own officers, through information sharing via media (in simple language and with easy to understand examples to apply), mandatory laws and regulations (oriented by Western standards). Tax benefits and subsidies, as well as an inner national stability in political (democratic, EU-orientation), economic (working conditions, salaries) and financial terms (inflation) would further support the development of sustainability in Turkey. Furthermore, investment in environment-friendly infrastructure, like ports, multimodal transport terminals, hubs and logistics cities offers better opportunity to relieve the crowded Turkish roads, especially around Istanbul. Fighting monopolies and corruption, investing in the environment and creating demand as customer is required, too. The government has to represent strong governance towards the development of sustainability for the country's well-being and for future generations.
2. Customers, both private consumers and companies are able to shape the market and support of sustainability, sustainable products and sustainable supply chains, by their demands and requests. They represent the society and can enable profits for companies. Competitive advantage and selling will support investment in sustainable products and services naturally. These requests can be addressed to all entities, the government, manufacturers, suppliers and service providers. Agreements and regulations can furthermore add a mandatory character. Requesting certificates, creating codes of conducts, assessments and monitoring will help to guarantee the application. If the implementation has succeeded, the achievement can be used for marketing purposes, too. It all depends on personal attitude and values.
3. Multinational companies, as part of the customer group, represent another aspect: experience, expertise and custom. These companies, often with European or Western origin, established and adept in sophisticated business, can lead, train and educate local companies through collaboration and knowledge exchange. As most companies are global players, they have corporate strategies in terms of social and environmental, production and process standards; are leading in efficiency and safety aspects and their skills have evolved over their long history. Those companies can act as mentors, as inspiratory, as



vision, as leader and as standard-establisher. This can improve Turkish, local and small companies in their performance. Best practice can be presented, exchanged and supported, based on modern standards, technology and regulations. Furthermore, this will enable Turkish companies to enter additional business relations with Western markets and economies. Multinational companies have, furthermore, the possibility to push the development through reputation, size, market power and business-related demands. They can request certificates for sustainable performance, but are also requested to pay and to cope with their responsibility as global, accountable business entities. Greenwashing or exploitation of missing regulations to achieve profits, based on environmental pollution or social conditions, is strictly counterproductive. Furthermore, partnerships and long-term collaboration should be aimed for. International, mighty, wealthy companies have to spread understanding and awareness through openness, communication and exchange. This can include training, cooperation with education facilities, like universities, own research, internal training and conferences. Those companies are triggers to teach others about the benefits of sustainable business, the non-monetary value of sustainability; to prove them with numbers and to promote sustainability. They have the power to convince governments, trade unions and NGOs of the necessity of sustainable business and protection of the environment and furthermore have the financial means to do it.

4. The fourth group consists of groups of public opinion and advisory in general: Consultant agencies and NGOs. Their responsibility is to promote, educate and request sustainability, to show its benefits and to convince companies by showcasing both monetary efficiency as well as non-monetary values achieved long-term. Those institutions can influence society, companies and the government alike and can provide support for implementation, reporting and investment in sustainability and sustainable supply chain management.

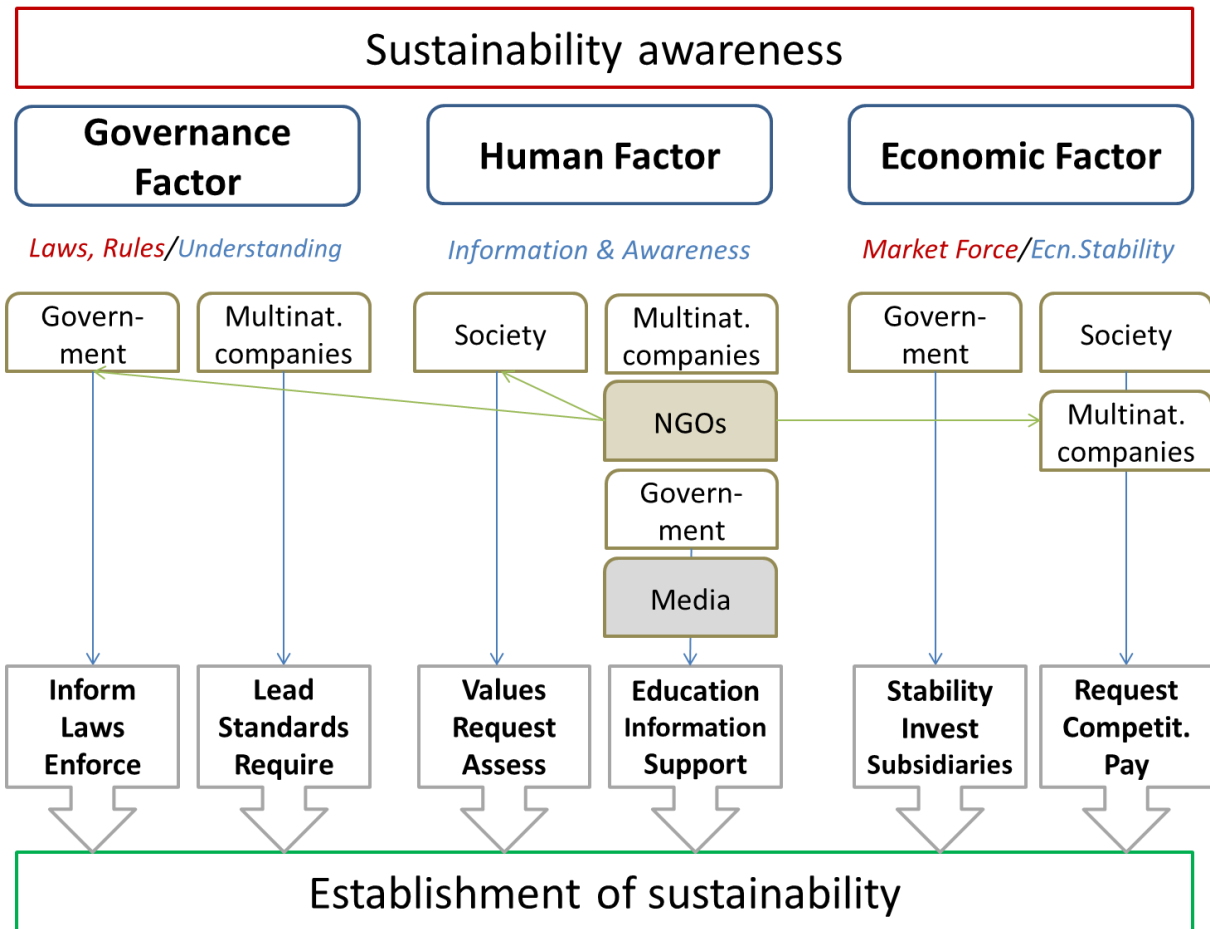


Figure 9: Factors and action groups of the establishment of sustainability

The responsibility of all considered actors comes all down to one point: Creating awareness and knowledge about the non-monetary value of sustainability. If people see examples, best practice presentation, clear numbers and figures and understand that investing money will lead to long-term gains and benefits; if they realize the long-term perspective of sustainability and its “future generation”-approach, then a paradigm shift can be achieved.

The benefits and opportunities of sustainable supply chain management and in general, sustainable performances, create cost benefits through efficiency, less consumption, less emission-related costs and waste material. Furthermore, it can become a competitive and sales advantage, especially for future demands – a general development towards sustainable demand is assumed. Especially in intermodal transportation, shorter pre and post runs, economy of scales, less delays and planning reliability enable better entrepreneurial conditions and the achievement of better Key Performance Indicators (KPIs). Social aspects improve and the environment benefits from the decrease in road transportation. Sustainable performances allow the establishing of business relationships with markets of higher standards than Turkey.

Some of these aspects were mentioned as triggers for implementation: Acquiring business relations, cooperation with international companies, expansion to global markets and meeting market trends are triggers for companies to implement sustainability. Cost decreasing in

purchasing, through an efficient use of raw materials; less consumption and recycling of resources is desired. Furthermore, sustainability and the investment in new technology enable small companies not to lose out with big competitors. One aspect has to be clear: Sustainability supports cost and consumption efficiency, leading to cost benefits, which was mainly named as number one priority of companies in Turkey.

Out of this, opportunities for Turkey as country, as economy and as emerging market arise. The development towards Western standards, due to close cooperation, historical backgrounds, the intermixture of Turkey's and Europe's populations and important business relations is considered to be possible. The convergence towards a membership of the European Union has changed much. Orientation towards European legislation and regulations already resulted in various benefits for the Turkish economy. Furthermore, many multinational companies and activities of Turkish companies provide excellent examples of best practice with regard to implementing environmental protection. For example, the government can adopt legislature of truck limits for foreign trucks, as is common practice in Austria and Italy, as soon as a competitive rail and ship infrastructure is established. The infrastructure that is currently being developed will enable to better modal splits, more efficient and reliable transportation and will provide benefits especially for companies looking to cover the big distances between industrial centers all over the country. Last but not least, Western companies can be used as mentors for sustainability procedures and standards. All this helps to improve the mindset in Turkey, to increase the awareness of sustainability and to lead towards a healthy, sustainable development with lasting success, rather than collapsing under the quest of growth and profit. In summary, it can be stated that despite shortcomings Turkey has seen some good improvements, is on the right track and is advanced compared to other emerging markets in the region.

## 7. Conclusion and recommendations for further research

This master thesis gained empirical, qualitative data from various actors of a global chemical manufacturer's supply chain in the emerging market of Turkey. It offers detailed information and statements to various relevant aspects and issues about sustainability in transportation and supply chain management in an emerging country. Drivers and potential advantages, opportunities and obstacles for companies that arise out of the implementation of sustainable supply chain management were identified. Furthermore, the current role and level of sustainability awareness in Turkey in the spring of 2014 was explained.

Generally, the awareness about sustainability in Turkey is low. This results in a low priority of environment-friendly, sustainable performances and products and therefore, in fewer sales opportunities. Even though many benefits due to SSCM are known, especially in connection to business with Europe, the understanding must be trained among companies. A widespread understanding in Turkey will help to overcome the various challenges that hindering the implementation of sustainability and sustainable supply chain management. These challenges are based on political, social, legal and educational issues and include limitations through short-term thinking and investment in infrastructure. The research pointed out concerted activities that can be used especially by companies aiming to implement SSCM that support to create the economic, social and political basics of SSCM implementation in Turkey. Special emphasis is on companies, NGOs, the government and society in general that affects and drives the development of sustainability and sustainable supply chain management. Possible actions were explained and suggested. Appendix 3 and 4 provide a summary and an overview of them.

Further work might improve the findings and enables a generalization of the key patterns:

- Further investigation in the economic, political and educational development of Turkey and the level of reaching the set of goals of Vision 2023 will evaluate the direction of development of Turkey. These aspects were only briefly analyzed, as the main focus of the research was concerned with creating a paradigm shift rather than analyzing Turkey from an economic perspective or development attitude.
- Comparison with other companies, industries or emerging markets should be drawn to prove patterns and results. This will enable researchers to create general theory about sustainable supply chain management in emerging markets and will furthermore allow to test the applicability for other industries, markets and countries.
- As this master thesis, as case study, was focused on social and qualitative aspects, technical and business related approaches can broaden the horizon and can add additional value to the findings.
- The focal manufacturer or other interested companies can use the findings in order to create a guideline, a time frame and a set of tools to implement sustainable supply chains in their processes with their own resources.
- As the will to pay and the aspect of sustainability awareness within the society were highlighted repeatedly, a survey with Turkish end consumers would provide insights of the appreciation and the demand of sustainable products within the Turkish society.

This would allow for an investigation towards the financial aspect of sustainable supply chain management, covered by the end customer.

The development of awareness is crucial in establishing sustainability in an emerging country such as Turkey, as there won't be as trust or investment in sustainable issues without specific purpose and goals is an unrealistic expectation. Cooperation and collaboration among all actors of the supply chain, open exchange of findings and best practice are necessary to act successfully. Involvement of governments and external consultants, NGOs and experts from various fields will enrich the outcomes. This includes companies, industries, countries and regions:

“Today, supply chains know no boundaries  
and learning from other people's successful practices from other companies,  
supply chains, industries and countries is hugely valuable”  
(Cetinkaya et al. 2011, p. 4)

## Appendix

### Appendix 1: Knowledge about sustainability among the focal manufacturer's employees (confidential)

Knowledge about Sustainability among the manufacturer's employees					
#	Interview	management level	business area	Understanding about sustainability	Category*
1	1	operation	accepted procurement	Quality & safety, internal transportation	understanding
1	2	operation	sales	beneficial for hardware, not harmful for the environment & not too expensive	understanding
1	3	3 line	marketing	high level knowledge, production without learning, participation	understanding
1	4	2 line	sales operation	Quality & Security, dangerous goods, lack of will to pay for sustainable transportation	understanding
2	5	4 line / operation	SRM customer service		under
1	6	3 line	SRM customer service	company culture, maintaining of performance, lack of awareness and identity	under
1	7	operation	SRM customer service	Party economic perspective, lack of awareness, low internal knowledge of safety	under
1	8	operation	CO2 output	Usage of resources, no awareness of way and delivery of them for the next generation	understanding
1	9	3 line	sales	Environmental, security of high business for the future, importance of global resources	understanding
1	10	3 line	SRM customer service		under
1	11	operation	new material purchase	efficient, good and economic usage of resources, holistic approach, new aspect for safety	understanding
1	12	2 line	market development	Not committed, economic, cost-cut, green building, sustainability in technology	understanding
1	13	2 line	SRM customer service	time taking, climate change risk, climate change necessary, transport mode shift, safety performance	understanding
1	14	operation	SRM customer service		under
1	15	2 line	business input	Environmental process reliability, good utilization help environment, work safety, business, social responsibility	understanding
1	16	3 line	transportation		under
1	17	2 line	feedback product safety	Developing team potential, quality & safety, EMS safety, following customer requirements	safety & quality
2	18	3 line / 2 line	production input	managing production capacity, EMS safety standards	under
1	21	3 line	safety & environment		under
1	19	work force	production	time aspect, knowledge, quality & safety, SRM in changes and better product aspect, lack of motivation	understanding
1	20	work force	production	Work force safety, CO2 production reduction, usage of clean for electricity production	operation

\* categorized by overall impression of the researcher

## Appendix 2: The interview characteristics

### Interviews

1) Focal Company																
Response rate			Code	Duration (hrs)	Location	Interview style	Analysis method	Quality			Recordings		Transcribing		Implemented	
Requested	Confirmed	% achieved						good	average	poor	yes	no	yes	no		
28	27	96,43														
*English if not stated			*Istanbul HQ if not stated													
Confidential	Manufacturer 1		1	1,5		In-depth	standard	1					1		1	
	Manufacturer 2		2	1,5		In-depth	standard	1			1		1		1	
	Manufacturer 3		3	1,5		In-depth	standard	1			1		1		1	
	Manufacturer 4		4	2		In-depth	standard	1				1	1		1	
	Manufacturer 5	german		5	1		In-depth	standard			1		1		1	
	Manufacturer 6			6	1		In-depth	standard			1		1		1	
	Manufacturer 7			7	2		In-depth	standard			1		1		1	
	Manufacturer 8			8	1,5		In-depth	standard	1			1		1		1
	Manufacturer 9			9	1,5		In-depth	standard		1		1		1		1
	Manufacturer 10	german		10	1,5		In-depth	standard		1		1		1		1
	Manufacturer 11			11	1,5		In-depth	standard	1			1		1		1
	Manufacturer 12			12	2,5		In-depth	standard	1			1		1		1
	Manufacturer 13			13	1,5		In-depth	standard	?			1		1		1
	Manufacturer 14	german		14	1		In-depth	standard	?			1		1		1
	Manufacturer 15			15	1,5		In-depth	standard	1			1		1		1
	Manufacturer 16	german		16	1,5		In-depth	standard	1			1		1		1
	Manufacturer 17	german		17	2		In-depth	standard	1			1		1		1
	Manufacturer 18			18	1	Production Site	In-depth	standard				1		1		1
	Manufacturer 19			19	1		In-depth	standard	1			1		1		1
	Manufacturer 20			20	1	Production Site	In-depth	standard		1			1	1		1
	Manufacturer 21			21	1	Production Site	In-depth	standard			1		1	1		1
	Manufacturer 43			43	0,5	Production Site	In-depth	standard				1		1		1
	Manufacturer 42			42	0,5	Production Site	In-depth	standard				1		1		1
	Manufacturer 44			44	16	ESL Conference	Conference	special				1		1		1
	Manufacturer 45			45	0,5		In-depth	standard				1		1		1
	Manufacturer 22	german		22	2		In-depth	standard	1			1		1		1
Manufacturer 46	german		46	2		In-depth	standard	1			1		1		1	

2) Forwarders															
Response rate			Code	Duration	Location	Interview style	Analysis method	Quality			Recordings		Transcribing		Implemented
Requested	Confirmed	% achieved						good	average	poor	yes	no	yes	no	
7	7	100													
Confidential	Forwarder 1		23	2	Ext. office	In depth + written	standard	1			1				1
	Forwarder 2	ger/turkish/eng	24	2	Ext. office	In-depth	standard	1			1				1
	Forwarder 3	german	25	1	Ext. office	In-depth	standard			1					1
	Forwarder 4		26	2	Ext. office	In-depth	standard	1			1				1
	Forwarder 5	german/english		27	4	Ext. office	In-depth	standard	1			1		written statement	1
	Forwarder 6	german		28	3	Restaurant	In-depth	standard				1			1
	Forwarder 7	turkish		36	-	-	e-mail	standard				1			1

3) Suppliers															
Response rate			Code	Duration	Location	Interview style	Analysis method	Quality			Recordings		Transcribing		Implemented
Requested	Confirmed	% achieved						good	average	poor	yes	no	yes	no	
5	4	80													
Confid.	Supplier 1		29	2,5		In-depth	standard	1			1			1	1
	Supplier 2		30	1,5		In-depth	standard		1		1			1	1
	Supplier 3		31	1,5		In-depth	standard		1		1			1	1
	Supplier 4		32	1,5		In-depth	standard	1			1			1	1

4) Customers															
Response rate			Code	Duration	Location	Interview style	Analysis method	Quality			Recordings		Transcribing		Implemented
Requested	Confirmed	% achieved						good	average	poor	yes	no	yes	no	
5	3	60,00													
Confid.	Customer 1		33	1,5	Ext. Site	In-depth	standard	1			1			1	1
	Customer 2		34	2	Restaurant	In-depth	standard		1		1			1	1
	Customer 3		35	1,5	Ext. office	In-depth	standard			1		1		1	1

5) Consultant															
Response rate			Code	Duration	Location	Interview style	Analysis method	Quality			Recordings		Transcribing		Implemented
Requested	Confirmed	% achieved						good	average	poor	yes	no	yes	no	
2	2	100													
Confid.	Consultant 1		37	1,5		In-depth	standard	1			1			1	1
	Consultant 2		38	1,5	Skype	In-depth	standard	1			1			1	1

6) NGOs															
Response rate			Code	Duration	Location	Interview style	Analysis method	Quality			Recordings		Transcribing		Implemented
Requested	Confirmed	% achieved						good	average	poor	yes	no	yes	no	
3	1	33,33													
Confid.	NGO		39	1	Skype	In-depth	standard	1			1			1	1

**Appendix 3: Summary of the results (EXCEL sheet available by request)**

**Discussion - Summary of results and core issues (Ranking)**

Turkey

Obstacles in TR	Suppliers	Service providers	Focal company	Customers	Consultants	NGO
Government	No belief in the gover	Unstable and unable	Incompetent governm	The government shou	Sustainability agenda	
Emerging	Short-term thinking d	Emerging market issu	Role as emerging coun	TR has other issues to	Focus on other risk iss	
Education	Lack of awareness (int	Lack of expertise and	Lack of education and	Lack of awareness, ex	Low awareness affect	
Price Focus	Focus on price, enviro	Small role of the enviro	Missing will to pay for	Focus on price, not on	Cheapest and best pri	

Laws	Few legislations, rules	Lack of mandatory reg	Lack of laws, rule obe		Rules and regulations	
Culture	Interest in luxury good	Traditional Anatolian	Oriental culture (Focu		Culture: Importance o	

Infrastructure		Lack of infrastructure	Lack of infrastructure			Focus on road transpo
Economics	Economic instability,	Economic and educati	Economic fears (Econ			
Quality		Focus on quality and c	Focus on quality		Price, quality, energy	
Modern Business		Modern business strat	Market pressure (dom	Cost efficiency & price		

No benefits	Matter of price & dem	Lack of sales or tax be				
No promotion		Missing promotion, m			Missing promotion	
Application		Sustainable marketing			Mainly CSR report rela	
Social life	Bad treatment of peop				Missing social life (lim	
Leadership	Respect of leaders & h				Missing governance of	

Lobbies			Lobbyism (strong road			
Global		Sustainability is a glob				
Customs		Turkey as customs cou				
Energy				Lacks in green energy		
Geography						Geography and centra
Waste				No waste separation		

Hinders of implement.	Suppliers	Service providers	Focal company	Customers	Consultants	NGO
Laws	Laws & Rules: The gov				As sustainability is no	

	Price focus of custome	Lack of related profit				
		Not right time for inve				
		Lacks in the infrastruc				
		Monopoly of national				
		Role of rail transporta				
		Lack of support from t				
	Affordability of sustai					
						Signing of agreements
	Preference of fancy, e					
	No or little problems (					
Additional costs for bi						
						Lack of knowledge - u

Will to pay more	Suppliers	Service providers	Focal company	Customers	Consultants	NGO
				No. Atm nobody requ	No will to pay, no und	No. Economic rather t

				Sharing of informatio		
				Never had the chance		
				Will to pay for safety		
				We are not in the pos		
				Believe in green servi		



## Appendix 4: Key word summary and guideline for the implementation of sustainable supply chains In Turkey

<b>Start from personal attitude (change of behavior)</b>
Employee education and continuous training, create a paradigm shift (Cooperate with consultants)
Involve the top management for governance and vision
Establish a sustainability company culture and a sustainability agenda: Changing the mindset will change everything
Provide good work conditions (work-life balance, funds)
Information sharing (Education, training), spreading of know-how to the public (schools, universities, media, industries)
Use manuals and other information material from Western companies and institutions as guideline
Follow and support of ideas that create a higher value for something
Follow a long-term plan and an agenda and face opportunities and hinders
Aim for higher standards than necessary - you will gain later on and will save expenses and time
Select eco products
Implementation of standards (waste water treatment, ...)
Reinvest and invest in sustainable equipment and facilities (e.g. rail track connection)
Cooperate with partners, the industry, exchange knowledge and get inspired by leaders & pioneers
Create long-term partnerships
Usage of economy of scales (Consolidation, bulk, utilization)
Measure emissions
Transportation: Concentrate on niche or rival-free markets
Product circles: Package-reuse & recycling creates saving potentials
Selection of certified partners and trust in small companies, implement codes of conduct and track the obeying
request standards (market power): push partners/suppliers/service providers
Create awareness through demand and be able to pay for environmental- friendly performances
Request governmental support and subsidies
<b>Problem: Missing will to pay more</b>

<b>Spread awareness</b>
Highlight sustainability internally with posters, easy language, explanations and applicable examples
Develop it to a daily business issue, take away the fancy and marketing aspect
Exchange and share ideas and experience with stakeholders, partners and the government
Request of EU standards through market force
Recommend easy understandable media like the TUISAD Report and involve public media
Show advantages and use actual examples for presentations of benefits

<b>Obstacles</b>
Price focus of customers. Customers and companies look for low prices, corporations look more on sustainability (more awareness, more budget, higher standards) First positive feedback, later decision for low price).
Lack of related profit benefits - tax benefits, sales due to sustainable performance due to missing will to pay (Lack of customer appreciation and sustainable thinking e.g. for eco trucks; priority of price)
Not right time for investment - other development first
Lacks in the infrastructure hinders intermodal transportation hinders private investment and supports truck fleets (also general lacks like cleaning facilities, equipment, rail terminals and custom clearance facilities, dangerous goods handling, many limitations between Europe and Asia - slow and little development, governmental focus on reputational passenger transport instead)
Monopoly of national rail organization hinders competition and development
Role of rail transportation not given, no will to use or to invest among Turkish companies
Lack of support from the industry, the government and European institutions (pushing needed, sometimes long implementation times, especially with EU)
Laws & Rules: The government has to track the obeying of laws (competitive disadvantage if you obey rules and others don't)
Preference of fancy, expensive products, rather than environmental friendly ones
No or little problems (waste water is not real target)
Additional costs for big companies (R&D, different business fields, quality, more tracking by government) > price, government

<b>Opportunities for firms</b>
Cost and sales benefits (international markets especially)
Competitive advantage
Economic approach: Decreases costs & increases sustainability. Efficient planning means cost saving, cost reduction
Improved and reliable processes (no delays, short distances, environmental friendly)
Local production as marketing issue, sustainability for marketing
Competitive and corporate advantage; international business, global markets
Meeting future demands
Inhouse packaging production reduced transport demands and made transportation more efficient
Reduction of energy consumption (less costs)
Unique earth: Less consumption saves the planet
Business-related: Business with multinational companies requires.
Produce locally and sell directly
Interest of multinational companies, not of locals
Cost savings for energy, waste, transport, CO2 and sourcing
Personal reason: Search for new products; human issues
Market trends (customer demands)
Emission decrease = cost decrease
Laws (punishment)
Harms to the environment
Resource efficiency: Less consumption of gas means less expenses
Entrepreneurial advantages (cost reduction, economy of scales, reliable processes due to railroad, improvement in service levels and efficiency)
Competitive advantages
Marketing issues
No advantages due to missing appreciation of customers (no will to pay, price, service and lead time focus)
Social benefits (better conditions for drivers due to un-manned mainrun with multimodal transportation)
Environmental friendly transport
Economic and cost benefits as well as customer requirements reasons 1st prio - environment prio
Safety and quality as source for sustainability
Decline between big and small companies
Lack of beneficial understanding leads to no implementation for small companies - no benefits due to missing (also big) customer's will to pay
Personal reasons and future thinking
Requirement as member of the Responsible Care Program
Customer demands and competition and market condition as trigger (start with intermodal concepts)
Laws

## Appendix 5: Interview statement summary

### 1. Overview Focal Manufacturer Statements

#### 1. What do you know about sustainability?

The awareness is widely spread, from no idea up to detailed knowledge and visions about sustainability.

You should create something and it would be very beneficial for human kind and also it won't be harmful for the environment and also could last for generations etc. This is sustainability for me. It's a very small word but when you look at the meaning its really big (Manufacturer Interview 2).
You do some business, no matter what it is, but you have to do it in a way, that you can still get from it. So thinking the opposite, if your business is not sustainable, that means that you are overriding something (Manufacturer Interview 3).
The main points of sustainability within BASF site operations can be named as ADR Regulation, BASF Approach, Cargo securing in BASF, BASF practices and Reverse Logistics activities. BASF is fulfilling a leading role in sustainability compared to the Turkish industries in general. That can be seen for example when taking the ADR regulations into account. While the history of ADR regularities generally started in the 1960s, the history in Turkey starts after 2003 and will be mandatory for national transports starting in 2014 (Manufacturer Interview 4).
No clue (Manufacturer Interview 5; Manufacturer Interview 10; Manufacturer Interview 14; Manufacturer Interview, transportation, 17)
"We create chemistry for a sustainable future", definition not known, no experience, never thought about it. Nobody thinks/asks about that (Manufacturer Interview 6). □
Proper investment, smooth and confident way, support business without harming different fields, business flows, training, defined terms & conditions, same basics & direction, reduce risks (Manufacturer Interview 7).
Using resources in an efficient way, deliver them to the next generation, instead of watching them run out (Manufacturer Interview 8).
Future security: Securing today's business to the future (economic perspective). If the resources of the world end, it means the end of the human being > question how to secure the future from a resource point of view (Manufacturer Interview 9).
3 e: environment, economic, ecologic, which create a cycle (Manufacturer Interview 12; Manufacturer Interview 16).
We need to change our lives and the corporate lives. Involvement of governments and companies – otherwise there is no future. New ideas, innovation and safety for operations, products – BASF has a vision. Change transport modes from truck to train, decrease carbon footprint and emissions (Manufacturer Interview 13).
Environment: Utilize the production sites well: challenging targets to decrease the environmental impact to the sites (Manufacturer Interview 15)
Quality and safety standards avoid harming substances to enter the environment or reach people – that's the sustainability approach (Manufacturer Interview 18).
Quality, safety, environmental friendliness, improvement of communication (Manufacturer Interview 43 – production site).

#### 2. How can you implement/match this approach to/in your daily work? Do you think the daily performance of your tasks can be improved, applying this definition to your daily work?

Various opportunities to implement sustainability into daily tasks were mentioned, from operational, strategic to social issues.

Use bulk transportation, turn as much products as possible from the drum or IBC to for example bulk shipments. You can combine as many shipments or trucks to the customer together, instead of buying a truck to Turkey every week or every second week, you can convince the customer to buy the amount of one month together, that means you can send instead of four or eight trucks, you can send one truck (Manufacturer Interview 2).
Implementing sets of rules that do not exist or which are not mandatory (Manufacturer Interview 3).
Service providers are pushed by requesting Security and Quality of Supply Standard (SQAS) through BASF's market power. We try to measure exhaust gases wherever its applicable and measureable. This will push these standards into practice and also educates the service providers. We always aim to bundle customer orders to trucks and secure all cargo. This saves money and emissions. Furthermore do we aim to have a 95% utilization of our warehouse all time. This reduces the resource consumption. Continuous training to our employees and pushing the partners towards a green supply chain. Provide a perfect example for our service providers. This is the goal of BASF – to provide knowledge to the market (Manufacturer Interview 4).
Not sure if operational position can be improved through sustainability, but improvement is necessary (Manufacturer Interview 7).
There is not enough time and thoughts spent to this topic. It has to be started with the personal perspective, not only taking the production into account, it's a daily aspect: Less consuming, which starts at home and the change of the consumer behavior. Trying to transfer these thoughts to the customers, through efficient communication, using the network and advertisement towards customers, using the company's reputation as support. BASF is innovative in their products and production operations, but there are lacks in the personal behavior of the employees (Manufacturer Interview 8).
Spreading the BASF knowledge to customers. The level of assimilation depends on the management level of the communication partner and his relationship towards sustainability. Representing BASF, also like other multinational companies. Mainly multi national companies know about it already (Manufacturer Interview 9)
Only little chance to intervene as single employee, but idea transferred to colleagues. No pressure too existing, but BASF implements standards. Using the selection power of BASF that chooses forwarders with certain standards and creates awareness indirectly, BASF leader in terms of dangerous good management > standards implemented far before the official law. Awareness of employees spread to colleagues/customers. Create training sessions, develop knowledge, repeat knowledge (Manufacturer Interview 10).
Job in packaging procurement: check the production conditions and waste treatment of the supplier. In general do global suppliers have good production conditions, but it's not my responsibility to check that. Education and qualification (Manufacturer Interview 11).
BASF is responsible for all necessary ways to customers or partners. Use only qualitative transportation partners, not random ones. Provide information about all processes and issues (Manufacturer Interview 12).
That's possible, through safety meetings, safety policies and through information spreading. Inform all employees about these issues at the start of their employment (Manufacturer Interview 13).
Through stakeholder contacts: Sales, human resources, Finance (Manufacturer Interview 14).
BASF can spread idea to employees (Manufacturer Interview 20 – production site)
Procurement: Demand bundle, SQAS as standard for all contracted service providers (service, safety and quality both for bulk and packed goods, insurance, ADR, standards and higher, checking). Sustainability depends on the department and the demanded volume, the price and so on (Manufacturer Interview 16)

#### Pay more for a sustainable supply chain performance?

In transportation requests exist, but not too many. Estimated to raise, also due to shrinkage of resources. Well established market (pharmaceutical market), but sustainability is not important so far and is not focused by customers – same for transportation (Manufacturer Interview, pharmacy perspective 22).
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#### 3. How can the stakeholders be reached and the awareness been spread?

Employees believe that a mix of education, training and cooperation with partners, customers, society and the government; sustainability requirements and the role as innovative leader can spread awareness about sustainability in Turkey.

Through global players (Procter & Gamble, Unilever, BASF), innovative standards create competitive advantage and this creates awareness. Raise education level to raise environmental awareness. Increase the education level you need to create an environmental awareness (Manufacturer Interview 2).
Highlight sustainability more within the company (not only posters and statements). Sustainability is not easy to understand: Explanation and concrete examples are necessary (less paper, less electricity consumption), concrete soft rules suggesting to people. More visibility and more communication. Sustainability is too much related to the company's image, its too fancy, sustainability is everywhere, but still not clearly explained. It is only mentioned at important days, with the public, rather than implemented in the daily work. Sustainability is more like a term – my role is missing (Manufacturer Interview 8).
Aiming to reach the level of EU countries – at least of the Eastern European ones. Better economy (Manufacturer Interview 11).
Using the TUSIAD report. Corporations have to cooperate with other, small companies (Manufacturer Interview 13).
Money talks. Set standards for our partners and they have to follow. Otherwise there is no understanding. If there is no demand, there is no action. When the increase comes, there will be competition about it. We have to spread the information to other industries and companies. Then the numbers of sustainable acting companies in Turkey will increase and compete (Manufacturer Interview 4).
Leading the Turkish industry. Providing ideas to the government – if new regulations come up they ask BASF for suggestions. Spread ideas to other companies (Manufacturer Interview 15).
Media involvement is very important (TV, news). Politicians have to spread. It's not a money problem – time to think about is necessary (Manufacturer Interview 20 – production site)
Almost no understanding. Information needed. Show advantages of using sustainable materials/processes, show long-term benefits (price-benefit balance). Use sustainability certificates as marketing instrument – some companies became popular due to their sustainable constructions. Awareness for sustainable construction materials created in relation to natural disasters (earth quakes and so on, earthquakes important for Turkey and created need for reliable, save and stable buildings and created idea to build the new ones in an eco-friendly, efficient and sustainable manner). Cooperation with NGOs – pressure as network. Talk, mailing, meeting, information providing, show advantages, networking (Manufacturer Interview 12).
Through training (internal & external). Awareness differs within the country (especially in Anatolia – Western areas) (Manufacturer interview 7)
In many cases come forwarders and custom agents to BASF to ask for tips. BASF obeys laws, regulations and policies strictly. It was a long process to make clear that BASF will always obey the rules. BASF standards implemented for all involved partners, plants, joint-ventures and service providers (necessary for general standardization). Trainings for custom clearance officers and forwarders. Education about background and idea. Standards through market power: Who wants to collaborate with BASF has to meet the requirements (including higher costs) – that's the only possibility that work in Turkey (Manufacturer Interview, transportation, 17).

**4. What are the main obstacles in TR towards a sustainable development?**

There are masses of obstacles that hinder the implementation of sustainability or even sustainable supply chains: missing laws and regulation, missing national governance and infrastructure, lacks of understanding, awareness, education and expertise and the will to pay just to mention some of them.

Sustainability through quality (SQAS) and service: Difficult in emerging market, while mandatory in Europe (Manufacturer Interview 1).
Missing infrastructure (Manufacturer Interview 1). 100% road transportation in Turkey (Manufacturer Interview 21 – production site safety and quality). Infrastructure: Railroad market struggles, development progress is very slow (Manufacturer Interview 4). Lack of laws (Manufacturer Interview 7). Political unawareness, priority towards sustainability not high among politicians, the government could do more, support the Kyoto targets. Only some, mainly big companies are controlled by the government, small ones not. Small companies should be controlled too. No punishment if not obeying the rules in the past – need of action of the Turkish Ministry for environment (Manufacturer Interview 13). Rejection of the population/lack of democracy. No specific forwarding laws. More alignment towards EU laws (transport, dangerous goods, ...) (Manufacturer Interview 14). Gaps in knowledge and expertise of government/ministries and their representatives when it comes to laws and regulations – government comes to BASF to ask questions with low level of expertise and to gain suggestions by the company. Sometimes experts are sent to EU. Government doesn't understand why money is spent for sustainable issues – they only see and know investments for monetary benefits/profit (Manufacturer Interview 15). Big companies like BASF obey the environmental rules – small ones not (Manufacturer Interview 15). Nobody requests ADR regulations at the moment – the government doesn't check (Manufacturer Interview 18). Conflict West-East for Turkey which is located between both approaches. Turkey decides according to potential benefits that can occur. Government has to decide and to define (EU rules and standards): Many times direct translation into Turkish. Low planning capability of government. E.g. ADR: Law came, nobody was prepared: no information, no support, no equipment, no rules who controls and how, bad education for controllers, police uninformed. Debts problems (e.g. mobile phone): losses, higher import/expense than export/income rates (Manufacturer Interview, transportation, 17).
No bonus for sustainable operations (Manufacturer Interview 1). Money and rules provided by the government (Manufacturer Interview 4).
Sustainable performance only basis for decision if business partner pays for it (Manufacturer Interview 1). The customer doesn't care. He is always cost-minded (Manufacturer Interview 2). The price talks: customers/buyers prefer cheap solutions. The price is the 1. Parameter to look at. If the customer finds the same price with added value, maybe decision towards sustainability. The price of the service is very important for the competition, not environmental aspects. Huge companies may have sustainable aspects included, small ones not (Manufacturer Interview 8). If customer (ex- or internal) is not willing to pay more – BASF doesn't adopt the costs (Manufacturer Interview 16).
Wide spread country (Manufacturer Interview 2).
Education (Manufacturer Interview 4). Low basic education, information not common (Manufacturer Interview 7). Information and related data should be reachable > lack of data > people are not interested. Public interest necessary, media and internet should spread. Current distribution channels are not enough, as they are not interested in spreading this kind of information. Limited awareness. Missing understanding of common areas or property (Manufacturer Interview 9). Missing awareness in terms of environmental or social responsibility. Lack of education from being a child – not existing, not priority (Manufacturer Interview 10). Lack of education and science (changes in some parts, but Turkey is still not a social country) (Manufacturer Interview 11). 5% of the construction materials clients have and understanding about sustainability in construction – transportation nobody. Education & mentality (Manufacturer Interview 12). Nobody thinks about the importance and the impact of the climate change and if the world gets warmer, the lack of water (water stocks just last for 120 days for Istanbul in case of a drought) (Manufacturer Interview 13). Education, no requests of sustainability. Missing understanding (daily and continuous learning necessary to meet the current issues) (Manufacturer Interview 14). The Turkish market does not understand this issue. Probably the management level does, but not the operational/working class level (Manufacturer Interview 20 – production site). Only big companies are interested in sustainable aspects (30% in pharmaceutical industry). Global acting companies like that BASF is certified, local companies doesn't care and are only interested in the price (Manufacturer Interview, pharmacy perspective 22). Only young people gained an education in these terms. Low level of education: youth is well educated due to new laws. Anyway, older generations (1-2 earlier) are badly educated and aimed big money, without working, effort and so on (Manufacturer Interview, transportation, 17).
Short term thinking (priority on speed, less quality, cheaper prices at the same time) (Manufacturer Interview 2). Aim for short-term profits. So sustainability or other issues to protect the environment or the employees or any other things to protect will create some kind of cost. Short-term-profit-making ideas of private owned companies push the market in this direction (Manufacturer Interview 3). People don't take care about tomorrow – short-term thinking prevails. Reasons are economic problems, hesitation, no trust to self-control, either high or no interest in terms of sustainability among population, people throw their rubbish on the street while others collect it to make money. Lack of future awareness/forecasts. Many people don't take care of themselves – so how should they be able to take care about others? (Manufacturer Interview 9). History of wars, short-term thinking to gain power within a short amount of time (Manufacturer Interview 11). Short-term thinking widely spread (economic situation, pessimism, skepticism) (Manufacturer Interview 15). Customer mentality: High price pressure due to competition from Asia within the pharmacy branch and doping of prices through governmental price limits for consumer protection. Unfortunately is the customer mainly interested in the price rather than the quality of the product. Prize has priority, even though that quality awareness exists (60% of the customer only aim the price) (Manufacturer Interview, pharmacy perspective 22). Believe to gain money in a very short period of time – no thought about nature, without consider others. Sustainability barely know – fast money counts. Build, build, build – similar to Spain. Creating debts. Due to credits, more expenses than income. It's easy to gain a credit card, which enables expenses without limits and living above the standard (debts and fear of collapse). (Manufacturer Interview, transportation, 17).
Different needs in emerging markets: Here the focus lays on the customer's demands, to make him satisfied and aspects like in-time deliveries are important. Turkey is a young country. Fighting for salary/own benefits, not competent/able to think about environment or other social issues. Improving the own standard has priority: Power/background and finances to think about others or the environment is not existing (Manufacturer Interview 8). Customers want to have everything at once: speed, less quantity, good quality, cheapest material. But this can't be, let's say, in one bag. This is not possible, the suppliers should be flexible. You could be flexible, but in order to be flexible, you have to pay more. I think in order to make the supply chain more sustainable in Turkey we need to increase the awareness first and then probably we need to create some hubs in some locations and either bring the SCM companies there or locate the industries around these hubs. This could be one option (Manufacturer Interview 2). Turkey is more consumed than produced – therefore the need for sustainability is not understood, no space for sustainability (Manufacturer Interview 15). Backlog in Turkey compared to Europe: 20-25 years. More sensitive approach in Europe (Manufacturer Interview, transportation, 17).
Social background, culture (Manufacturer Interview 7). The Turkish culture: Mediterranean characteristics are different: They want what they want and when they want. BASF places rules at 1st place. Other companies were "slaves" of their customers, just to make the customer happy, BASF says no (Manufacturer Interview 8). Difference in doing business, compared to other countries: profit orientation rather than safety for workers or good working conditions). Cultural issues: strong focus on thinking, respect and way of doing business (Manufacturer Interview 11). Short history of country (since 80s possible to buy things from other countries – before only domestic products were available). Buying behavior in Turkey: higher, bigger, more expensive (like in other emerging countries) (Manufacturer Interview). Sustainability in Turkey means safety, quality and efficiency – not protection or sustainable development (Manufacturer Interview 15). Turkish mentality service providers: standards are requested, answer is: "no problem", but implementation is other issue – no certainty (Manufacturer Interview 16). Since Osman Reign with strong leader. Then approach of industries and economy creates strong and massive economic growth at the expense of nature, youth and future (Manufacturer Interview, transportation, 17). Turkey can be divided in regions West (Istanbul, Ankara, Izmir, Mediterranean Sea), where sustainability is important and the East (Anatolia, Black Sea) where no awareness exist, where sustainability is not relevant and where bad education rules > as better educated a region is as more awareness can be recognized. Physical, tangible things are very important in Turkey: some people only aim this, while others share one pot to eat in Anatolia > country of objection! (Manufacturer Interview, pharmacy perspective 22).
Market pressure will create good service providers (Manufacturer Interview 4). Suppliers. Turkish suppliers can be leaded through BASF market power. Many are inspired by EU standards about quality and regulation issues (Manufacturer Interview 11).
The economic situation should be improved. But first the people should not think to fill their pockets, let's care how much they earn or how much more they could earn. The have to behave like this is my salary, this is my income and I'm living a descend life with it, let's see what I can do for the world. Most of the people in your country are doing the same thing I think... (Manufacturer Interview 2). Generation of needs - basic needs have to be fulfilled first (no place for sustainability). Low salaries create unstable life conditions. Economic crisis (Manufacturer Interview 7). Economic issue: low salary forces people to save their existence first. Nature and rest comes afterwards (Manufacturer Interview 10). The Turkish economy is not stable for many years (problems with the Turkish currency included) > lack of stability (Manufacturer Interview 11). Economic situation (emerging market, developing country) (Manufacturer Interview 12). Insufficient social and economic situation in Turkey (Manufacturer Interview 13). Economic, psychological, social (Manufacturer Interview 14).
Local competition among Turkish production sites of BASF: pressure, no logic, leaded by business units, that have other targets, while aspects like shipment bundling or location issues aren't the key issue anymore (Manufacturer Interview 15). Missing expertise: There a (too) many rich forwarders, but expertise and related education is missing. Missing standards. Many service providers but no reliability. No branch related apprenticeship system (education standards) – started 5 years ago > more expertise is needed > most people in Turkey learned sth. Different as they do as their final profession – missing expertise/background > learning by doing, not by educated standards (Manufacturer Interview 14).

**5. Hope and advantages**

Hope is based on the close orientation to Europe and multinational companies that act in Turkey and can deal as inspiration. Furthermore is the big, young and educated youth seen as future guarantee and infrastructure projects are seen as triggers towards more sustainability.

Development of new infrastructure (roads, rail, terminals, etc). Need for transportation growth according to economic growth > the government has to change the situation but is too busy (Manufacturer Interview 1).
For Turkey, we have to say, things are different than it was 10 years ago, or even 20, 30 years ago, because the quality was widely improved, like in many emerging countries. This aspect is good because people do not only improve their economic situation, they also start to improve on social issues and so on. They more see and ask for these standards, little by little. From the supplier side I have seen those things as well, because there is a group of companies, which supply these multi-national companies. Now they have all the ideas, and they maybe don't have intentionally gained a culture of sustainability. So that was maybe thanks to the effort of these companies, including BASF. Now they have an advantage on competing on a level that their competitors are not able to compete as one thing and another good thing is that now they have higher standards, so they won't easily go back, because it became a culture. Maybe that's the path how the things should go on. There is a rule set, you have some financial improvements, then you start moving them into these social parts, but again the rest of the market still has a lot to do and of course as long as it is not governmentally, not pushed, but supported, it will take longer. Multi-national companies have done for the market, also on the governmental basis, this is also related to the EU. The European Union has pushed within the last ten years, lots of improvements on the government, which is always good, because you won't go back with your standards (Manufacturer Interview 3).
Market power. Customers set limits and regulations that the manufacturers have to follow (textiles). Create international valid standards (like in textile branch) (Manufacturer Interview 18). First rule in Turkey: Earning money – forwarder adapt the laws to earn money. Possibility to implement standards in the transportation market – implementing sustainability through market power. Turkish people adopt themselves to everything (big advantage of Turkish people): learning by doing: "buying houses first, then think about roads" (Manufacturer Interview, transportation, 17).
Sustainability through careful production, training, rules (Manufacturer Interview 20 – production site).
Education level in Turkey is not as bad as people say. There are good professors and universities in the country (Manufacturer Interview, pharmacy perspective 22).
Sustainability can have advantages for manufacturers which aim to export their products to countries with high standards. Sustainability as marketing issue (especially in pharmacy branch: sustainable plantations, fair harvesting) (Manufacturer Interview, pharmacy perspective 22).
EU inspiration: Trying to join EU can have a positive impact for Turkey (Manufacturer Interview 13). Some companies implement approach of Europe (eg. Service Provider 1), as European standards are better than Turkish ones (Manufacturer Interview 18). Hope to adjustment of laws towards European legislations: Turkey needs force, also regarding custom clearance and ADR – higher standards abroad (Manufacturer Interview, transportation, 17).
Big and young population with opportunity of better and easier education > easier to change young people (Manufacturer Interview 12).
Big, global acting companies that invest in Turkey can act as mentor for Turkish companies and act as orientation inspiration (Manufacturer Interview, pharmacy perspective 22).
Quality awareness continuously rising, also wish for flexibility. Nowadays customer consider to pay up to 15% more for quality or value adding in the pharmaceutical indust (Manufacturer Interview, pharmacy perspective 22).
Migros distributes self-rotting plastic bags in their supermarkets and aims to reach an understanding for customers of consumer goods, as thought-provoking impulse. This is good as consumer goods and food is the basis for this country's economy (Manufacturer Interview, pharmacy perspective 22).
Economic growth for Turkey estimated with 6-8% - sustainability is necessary to achieve and to continue this (Manufacturer Interview, pharmacy perspective 22).
Compared with the other emerging countries I believe, what we already have is an advantage also on sustainability (Manufacturer Interview 3).

6. If you would have a wish regarding a sustainability development in TR, not taking any challenges or difficulties into account, what would it be?

The amount of wishes is big. They represent the obstacles Turkey has to face and request a changed country, with a good government, a stable economy, educated and aware people, supporting laws, multinational companies and Europe and cooperation among companies.

Infrastructure: Hubs in specific locations – bring the SCM service providers there or allocate the industry around the hubs. Rail transportation/rail car shipments (Manufacturer Interview 2).
Laws: Rules of the EU, Truck policies (Manufacturer Interview 4). Minimum standards and safe live conditions needed to give the spreading of sustainability a chance (Manufacturer Interview 7). Regulations for consumers, material usage, against inefficiency. Change the picture (Manufacturer Interview 8). Better working conditions (Manufacturer Interview 11). Change regulations (Manufacturer Interview 12). Support from companies and especially the government (Manufacturer Interview 12). More governmental control (Manufacturer Interview 13). Laws: without laws and force, nobody obeys sth. (Manufacturer Interview, transportation, 17).
Inter-modal transport with a good rail road network possible from Europe to Asia, dangerous goods transport via Bosporus (Manufacturer Interview 16).
All service providers have certain standards (SQAS) (Manufacturer Interview 1).
Convince customer to invest in tanks (bulk transportation instead of unit loads) (Manufacturer Interview 2).
Trained and aware experts: Truck drivers that understand and follow (Manufacturer Interview 4). Specialists that work on that issue are needed (Manufacturer Interview 7). Education for the youth: Since 5 years ago, no logistics-specific education: Nowadays logistics is an important field of profession, as it means future. Every university provides logistics programs nowadays and the youth aims to become part of logistics (Manufacturer Interview, transportation, 17).
That we don't go back of the advantages and at least improve a little bit in the region (Manufacturer Interview 3).
Cooperation: Team work (Manufacturer Interview 5). Transparency: What's happening within the business? No facts or figures, just rumors exists – how to create a sustainable future under these conditions? (Manufacturer Interview 15).
Aware society: Understanding that sustainability/green logistics affect everybody's life. People have to be aware of the environment. A society that has the knowledge about sustainability (Manufacturer Interview 4). Changed mindset (Manufacturer Interview 5).
Well acting politicians: Politics, fight inflation (Manufacturer Interview 5). More justice (micro approach problem), more laws (Manufacturer Interview 9).
Education: Create understanding/awareness through education: showing them non-monetary values and benefits (Manufacturer Interview 8). More governmental advertisement: broadcast to spread information, to reach people, also during peak hours, not only during the night. Push the people to think. Create self-awareness that can then switch over to others and can create a change from the inside. Understanding of resource limit: higher prices for national resources like water and oil (Manufacturer Interview 9). Better educational system. Economic upturn Creating awareness/Make people believe (Manufacturer Interview 10). Environmental friendly thinking employees. Main: educated people. Government invests to improve the education and level of science, also in the industry (science without bias and corruption) (Manufacturer Interview 11). Trust in people. Efficient usage of resources through developed ideas and technology (Manufacturer Interview 13).
Higher life standards for Turkey: Save basic needs to enable start to think about higher goals (Manufacturer Interview 8).
Government: Implement democracy in politics. Starting point: Istanbul. Politicians should make people happy and provide the basics of being. Then the people will increase their own standards and will find time and financials for higher life standards like culture, art, music and sustainability (Manufacturer Interview 8). Governmental control. Good and just government (Manufacturer Interview 10). Working class pay taxes, rich people not so much: defending corruption and securing trust (Manufacturer Interview 11).
Bicycle roads, saver roads (Manufacturer Interview 9).
Less competition through external countries and support for national companies (Manufacturer Interview 11).
Support from multi-national companies: International companies are important but can also ruin the market: hope for support rather than competition (Manufacturer Interview 11). Support from companies and especially the government (Manufacturer Interview 12).
EU membership not necessary, but getting close to EU standards and learning from the EU would be good for Turkey: start from 2. Step instead from the first one (Manufacturer Interview 12).

## 2. Overview Forwarder Statements

### 1. How do you define sustainability when it comes to supply chain management/forwarding/transportation/storage from a logistics service provider perspective?

Variation in answers from no idea and no investigation, support for the Gezi Park protest to detailed sustainable performances was mentioned. Strong dependence on international orientation and approach.

Dangerous good safety (Forwarder 1, big Turkish company)
The environment is sensitive, but there is no chance for profit with eco trucks in Turkey. Still, I buy trucks with EUR 5 and EUR 6 standard. This is no must, but I do it. But this does not affect my sales (Forwarder 2, little Turkish company)
This is a new company (2 years old). There is not enough done. This will change, when the company is growing, standards will rise. Some years needed towards sustainability, but interest in quality exists. Currently there is nothing done towards sustainability (Forwarder 3; middle-size Turkish company)
Green Logistics ("Logistics for a better world") (Forwarder 4, big, Europe-wide acting Turkish company)
EUR 5, green office, intermodal transportation, driver trainings (Forwarder 4, big, Europe-wide acting Turkish company)
Environmental issues, but some more involved (methodology) to continue with recent resources for future (also HR, not only CO2 and green logistics) (Forwarder 4, big, Europe-wide acting Turkish company)
Sustainability has a wider frame, not only environmental issues are involved (Forwarder 4, big, Europe-wide acting Turkish company)
"We believe, that the most efficient and well managed operations in supply chain forwarding and transportation and storage should be driven by "dedication to improvement and technical innovation". We also believe, such operations should also be the most resource efficient. Therefore we do engage ourselves in promoting "sustainable logistics" committing ourselves to operational excellence and technical innovation. This leads us to reduce our environmental impacts with: Less non-recyclable waste, Lower pollution, Lower carbon production, Lower empty mileage, Reduce cost. This is how we define sustainability in our flow of supply chain." (Forwarder 1, big Turkish company, written statement)
Sustainable supply chain is the "environmental, social and economic impact of management and promoting, good governance practices of products and services throughout the life cycle". Considering that a product's carbon footprint of 45 % appears in supply chain, companies will have to create long term value for their future of operations, as well as for the entire community. Stakeholders are included in the entire supply chain and have to expand their sustainability strategies (Forwarder 7, big Turkish company).

### 2. Triggers why implemented new things (ADR, SQAS, Co2 emission monitoring) in (cooperation with BASF)?

The opinions differ: Some interviewees name personal reasons, while others don't see a monetary or business benefit in sustainability and therefore don't apply it. The customer's missing will to pay is mentioned as a hinder to invest. Customer demands, market conditions and cost savings are other triggers. Gaining benefits of sustainable approach (performance, savings, market value are stated by those who understood the concept.

Became member of the Responsible Care program (Forwarder 1, big Turkish company)
Personal success and emotional aspect (Forwarder 1, big Turkish company; Forwarder 2, little Turkish company). Environment, children, followers. All of them should deserve the same standards that we have today (Forwarder 2, little Turkish company)
There are no reasons to implement sustainability, as there won't be any impact to our business development. I don't know if there are specific companies that achieve these norms. I guess rather big companies with own truck fleets might do that (Forwarder 3; middle-size Turkish company). If there is contract bidding and the last instance, the price counts, not eco-friendliness. Also for big companies (Forwarder 2, little Turkish company).
Our slogan is "Logistics for a better world". The environment triggers to customer needs and market conditions. We aim to gain benefits for the environment of today and of tomorrow. The market conditions gave us this idea (Forwarder 4, big, Europe-wide acting Turkish company)
We started with intermodal methods. Benefits of intermodal concepts are benefits in costs and gave us the opportunity to add the environmental aspect After starting with sth. That works well, you continue and can't stop, which creates new targets. Good position at the moment in Turkey for block trains from Europe, double stack loading road trailers (Forwarder 4, big, Europe-wide acting Turkish company).
Personal issue: It's good for the company and the environment and the world generally, for customers and the market value (Forwarder 4, big, Europe-wide acting Turkish company).
Creating more customer value, which goes in parallel with the above mentioned sustainability concepts can be regarded as the main trigger of implementing safety and quality standards. We do not regard these as new things but as our natural pathway for sustainability. Not only limited with BASF, it represents the whole portfolio of our customers in global chemical industry. Without being a part of existing standards sustainability in our service cannot be valid (Forwarder 1, big Turkish company, written statement)
We should not be the only one who pushes: main triggers to implement sustainability in Turkey are the industry or laws (Forwarder 1, big Turkish company)

### 3. Obstacles and difficulties that were observed during the implementation?

One of the main obstacles is the lack of infrastructure in Turkey. Especially in the area of energy efficient transport modes like rail and sea transport is infrastructure missing. The understanding about sustainability, the demand and the will of customers to pay is missing. Also the cooperation with European institutions takes a lot of time.

Lack of infrastructure: one tank cleaning facility in whole Turkey with European and Turkish certification (Forwarder 1, big Turkish company)
Costs, small freight volumes, high warehouse costs (Forwarder 3; middle-size Turkish company)
Intermodal more and more difficult in Turkey. Infrastructure problem: railway in Turkey is not developed and makes transportation difficult. Port-infrastructure needed (biggest difficulties in Turkey). We are surrounded by sea, but we don't have the required infrastructure. We need more effort for investment of train and port infrastructure, not just in truck fleets. Intermodal transport export Eastern Europe: Right now there is not enough volume for block trains. Only opportunity to reach the Anatolian side is by train ferry through the Marmara Sea at the moment. 3rd Bosphorus bridge was planned as railway connection, but at the moment there is only one connection, and that's the Marmaray subway – only usable during the night, but no dangerous goods are allowed and there are many construction limitations (Forwarder 4, big, Europe-wide acting Turkish company) One main problem for railroad transport is the monopoly of the operator in Turkey. (Forwarder 5, Austrian European rail-freight provider)
Companies would not pay for environmental friendly performances. The solution is perfect quality. In the end the price counts. At the moment are customers not willing to pay for environmental friendly performance (Forwarder 4, big, Europe-wide acting Turkish company)
Point of view of clients must be changed: High distance to railway connections (bad example for transit time, no reliable solutions possible, lot of convincing for provider necessary. Can be better if sustainable thinking would be developed (Forwarder 5, Austrian European rail-freight provider)
While we have not experienced any obstacles and/or difficulty during the implementation of new standards, major part of these needs very close co-operation with the related associations in Europe, which consequently needs a long process until conclusion. For example, SQAS assessment system is implemented to users by CEFIC and a full implementation and assessment process should be performed locally in Turkey by a certified assessor of the same institution. It also takes time to cover the missed items of this assessment in the next coming periods when assessment is repeated within every 3 years' time (Forwarder 1, big Turkish company, written statement).

### 4. Advantages that occurred after the implementation in general and compared to competitors?

Some companies see no monetary benefits in sustainable performances. Others see economic, social and environmental advantages, reliability, economies of scale, efficiency and cost reduction due to sustainable performances and inter modal transportation

There are no advantages, as the freight price stays the same. The customer is only interested in the freight price – otherwise he thinks he had to pay more. They should mind the EURO Norm too, but only the price counts – in Turkey only the price counts (Forwarder 2, little Turkish company)
The customer is not interested in this. They want the goods in time, they are interested in the delivering time and the price (Forwarder 3; middle-size Turkish company)
Contribution to sustainability, Competitive advantage against market players, High improvement in service levels, Efficiency in supply chain, Improvement of KPI (Key Performance Indicators) (Forwarder 1, big Turkish company, written statement)
Social aspects (less and less drivers on the market) > ferries and trains require less travelling for drivers. They can do local work in their home regions (instead of being away for several weeks) (Forwarder 4, big, Europe-wide acting Turkish company)
Bigger volumes: intermodal transportation is a reliable mode and is not affected by the weather, borders, capacities and works in time slots). This was the idea that came from European methods and created more reliable, efficient and environmental friendly transports (Forwarder 4, big, Europe-wide acting Turkish company). Example company X total railway volume increased from 10 to 30 % as they invested in the connection of their railroad network to the general network (3 km) as sustainability issue reason (Forwarder 5, Austrian European rail-freight provider).
Cost reduction (50-60%): train and ship means economy of scales (Forwarder 4, big, Europe-wide acting Turkish company)
Companies can furthermore use the CO2 emission data of us for own marketing issues (Forwarder 4, big, Europe-wide acting Turkish company)

### 5. Things that have been learned/can be learned? (int./European companies)

Inspiration of multinational, big companies can improve performances and standards, expertise helps, as well as European regulations as direction for Turkish companies.

In the year 2000 the first contact with BASF was made and that enabled us to change its idea SQAS meant investment, but also maintenance (Forwarder 1, big Turkish company)
Expertise helps (load safety e.g. is very important), as the procedures and the equipment changes (Forwarder 4, big, Europe-wide acting Turkish company)
European regulations can rather be regarded as "contribution to improvement" rather than learning. One should not forget very important fact that a regulation which is to be implemented to a company not belonging to Europe by definition should not be in conflict with the regulations of the country of that company. However, considering the long last thing experience period of these regulations, until final adoption in EU countries, mostly means an additional benefit, advantage and contribution specifically in our system in Turkey (Forwarder 1, big Turkish company, written statement).

### 6. Tips for implementation?

Change your mindset and everything changes, have no limitations, find gaps or regions with specific demands, get inspired by European standards and guidelines.

"Once you change your mindset, everything changes" (Forwarder 1, big Turkish company)
We were never limited on local demands, the aim was to create the best service for customers and always had the environment and regulations in its mind (Forwarder 1, big Turkish company)
Ex. UK-plan: no fear of competitors, as basic capabilities are necessary for that plan and others don't have them. Tip: focus on some regions or cover regions without competition > find the gap (Forwarder 4, big, Europe-wide acting Turkish company). See related EU Associations (CEFIC) manuals (Forwarder 1, big Turkish company, written statement)

## Turkish market

### 7. Awareness about Sustainability in SCM market/field/business?

Mostly big or international companies are aware about sustainability in Turkey. The customer and population is not aware about the beneficial advantage of sustainability and therefore they don't invest in it. The price and performance rule, environmental issues are not important within the customers' understanding. In general there is less awareness in Turkey than in Europe, regulations matter here.

There is awareness here, but it's useless on the market. Folk has no awareness. They see it more as a disadvantage, like custom duties. People think that if they invest, they don't gain something out of it. Nobody is willed to pay more than necessary. It's the same business than with ordinary trucks. The market and forwarders know the issue, but I don't know if they do something about it. I don't know if they do it in the right way or not (Forwarder 2, little Turkish company)
The situation is changing. Nowadays it's easier to open a new business. Many forwarding companies offer low quality performances for low prices. Marketing would be necessary, as sales are the most important issue in the transportation sector (Forwarder 2, little Turkish company).
Only big companies are interested in this issues (companies with own fleets), or Bosch or something like that. Otherwise environment protection is not relevant. Performance is more important, like punctuality and price. Customers require good service and a good price, that's self-evident. If we had the choice between environmental friendly and ordinary performances, we would chose, of course, but the environment is not a matter of concern (Forwarder 3, middle-size Turkish company)
Very few companies that invest in Green Logistics in Turkey. We are the leader of awareness in SCM in Turkey. Also Turkish companies don't want to invest. Customers in Europe ask for Green Logistics, this issue becomes important for some businesses (Forwarder 4, big, Europe-wide acting Turkish company)
Not much. Big companies ask/request, small ones are not aware. They deal with the daily task to survive in the business. They don't or they can't care about it. (Forwarder 5, Austrian European rail-freight provider).
Sustainability is the main derivative of environmental awareness. Therefore it's highly depend on environmental regulations and how updated they are with EU standards. The background of environmental awareness and consequently environmental regulations is rather short compared with EU history therefore in supply chain market sustainability issue covers at the moment only a partial meaning and needs longer time period of around 10 and + years until it can be fully understood and implemented by the local industry (Forwarder 1, big Turkish company, written statement)
Turkey adopted many declarations and resolution texts and over 30 protocols and has been part of 41 conventions related to environment. It is expected to increase this much of liability in future, with the recent developments in international platforms. Turkey's development policies show an evolution towards sustainable development within the frame of community-economic-environment from the beginning of the planned period until today. Despite significant progress in this area, sustainable development and monitoring for assessing progress has been limited (Forwarder 7, big Turkish company).

### 8. Hinders to implement sustainable performances?

There are many hinders in Turkey regarding the implementation of sustainable performances: Lack of regulations, lack of infrastructure, preference of cheap services, lack of expertise and education, political instability, lack of awareness and promotion, development deficits, lack of governmental planning ability, lack of applying rules and punishing misbehaviors,...

Regulations: copied by EU, but not mandatory like in EU (Forwarder 1, big Turkish company)
Biggest problem: infrastructure - 300 km in the South of Turkey are well maintained and good. Difficulties to arrange pre and post-runs and handling, insurance (Forwarder 1, big Turkish company). No investment in rail infrastructure between 1950 and 2000, as the railroad was seen as being communistic - therefore no big role in TR, advice to buy truck instead (Forwarder 6, big, global acting French company). Lack of reliable infrastructure (Forwarder 1, big Turkish company, written statement)
Railroad is not the preferred mode of transportation in Turkey. In domestic transport railway is not the best option. The market requires the lowest price and the truck fleet in Turkey is cheaper (Forwarder 1, big Turkish company). Turkey has biggest truck fleet in Europe: 100% road-based transportation (no sea, rail or air transportation) (Forwarder 6, big, global acting French company).
Lack of expertise and specialisation: In Turkey everybody tries to do everything, but most providers are not very educated or skilled in all aspects and they are not interested in specialize in something (Forwarder 1, big Turkish company). Lack of trained technical staff (Forwarder 1, big Turkish company, written statement).
Education: Green Logistics is now popular in academics, but at the moment only in theory. This will change and become better (Forwarder 4, big, Europe-wide acting Turkish company). Education in logistics is very young in Turkey (Forwarder 1, big Turkish company, written statement).
Political instability (Forwarder 1, big Turkish company, written statement): Lack of laws and punishment: Turkish companies can do what they want, even if it's against the law - international ones not. No obligation in Turkey and therefore no punishment if you don't obey the rules (Forwarder 1, big Turkish company; Forwarder 2, little Turkish company). "Many things go in chaotic ways and without planning. A new law or regulation appears and then people react" (Forwarder 5, Austrian European rail-freight provider).
Missing promotion: Sustainability is quite new in Turkey (approx. 2 years old). There is no marketing or no media distribution in Turkey that reaches the end customer. Therefore the awareness in Turkey is low. Many times the management implements these issues, but the employees don't know about it (Forwarder 1, big Turkish company)
EUR-Class trucks: There is no advantage of eco-trucks, just higher costs, but mandatory by law. Truck producers push the government to sell new trucks (Forwarder 2, little Turkish company)
Lack of awareness: Folk needs to have a certain level and has to understand the benefits, and then the point is given, to permute it. Take the Gezi Park as example: Only educated people knew about it, the average people did not. Poor and uneducated people haven't been there, rich people haven't been there. Only the educated middle class participated in Gezi (Forwarder 2, little Turkish company)
Lack of governmental support: tax benefits (Forwarder 4, big, Europe-wide acting Turkish company).
Later development than in Europe (10 years back). Therefore development is needed, that follows Europe. Turkey is a follower country (Forwarder 4, big, Europe-wide acting Turkish company). "Things that countries achieved in 150 years can't be developed in 15 years" (Forwarder 6, big, global acting French company)
Pressure of multinational company headquarters to third country departments to implement Western standards, but stays more or less just theory
Other priorities in Turkish business: There are other issues which are prioritized. We deal with other issues and are looking to find the right sub-contractor. I don't know why nobody is aware of sustainability (Forwarder 3; middle-size Turkish company). The environment is not the main case in Turkey. The big, leading companies try to use it for their marketing. They use environmental friendliness, but only on the markets. They don't really care and only aim for money (Forwarder 2, little Turkish company). Focus on quality (Forwarder 4, big, Europe-wide acting Turkish company). Usually other reasons than sustainability are the priority for "sustainable" performances, the results will be used then for marketing issues (Forwarder 6, big, global acting French company)
Eastern mentality in Turkey: Anatolian: awareness about nature, but they see it as own property, and don't want the usage for environmental friendly energy production, e.g. (Forwarder 6, big, global acting French company) No will to report misbehavior of others (Forwarder 6, big, global acting French company). Regulatory cultural and language constrains that narrows successful implementation (Forwarder 1, big Turkish company, written statement)
Business strategies: Problem JIT: Flexibility creates more traffic and transportation, which results in more emissions and more pollution (Forwarder 6, big, global acting French company).
Global perspective: E.g. Iraq is not Europe. Other standards exist, other laws, too. Therefore they use trucks that are not allowed in Europe anymore and the truck remain in use and on the roads (Forwarder 6, big, global acting French company)
Lack of equipment/planning ability of the government: ADR: No equipment available in Turkey, expect for sprinters. No ADR checks in Turkey (like in the UK or the EU) (Forwarder 6, big, global acting French company)
Strong Cooperatives in some region hinder development. Corruption and group thinking is common (Forwarder 6, big, global acting French company)
Lack of Justice: Dispensation of justice: rail network construction, complaint, adjudication and construction stop, finally continuing at the same status, but just 1/2 an year later. Company wins bidding and forwards the contract, further and further, from sub to sub to sub-sub-contractor. Finally the infrastructure is constructed by the last sub-contractor with a small budget and the original quality aspect is missing. Deficits and lacks remain (Forwarder 5, Austrian European rail-freight provider).
Turkey is a customs country: customs points in terminals necessary to do the handling or the transshipment to custom points. T1 and T2 documents are used now, which will be a big advantage in the future. The transshipment to customer terminals is very expensive, as bonded trains are needed. Rail cargo is the first company that uses the documents for rail transportation (formerly only used for road transportation) (Forwarder 5, Austrian European rail-freight provider).
Major obstacles: it visualize just costs of companies, they work just to show it, there a no full audits by the government and there is insensitivity by the community (Forwarder 7, big Turkish company).

### 9. How can the key problems be solved/what is needed (general and in relation to cooperation with BASF)?

Increase customer awareness to create demand for sustainable products, organize information channels for the industry and the population, implement rules, regulations, track them and punish misbehavior, raise education and expertise, convince multinational companies about their responsibility and involvement, learn from multinational companies and cooperate with them

Necessary to increase the customer awareness, the market will follow. Customers request special issues because others request them too. Seminars in Turkey us and 3 big players, which invited the whole industry (chemistry and transport) and talked about the environment, rules and standards, we should not be the only one who pushes: main triggers to implement sustainability in Turkey are the industry or laws (Forwarder 1, big Turkish company).
Education, schools, children have to create awareness. Not only in transport issues, it is required in all aspects and elements. It's hard to change old people (Forwarder 1, big Turkish company). Education means 50% of Turkey's success and opportunities. It doesn't make sense to change something for the current population. They are too old, they won't change. The children have to be educated now. By their parents, by schools and social environments (Forwarder 2, little Turkish company).
We need justice, nature and social protection (Forwarder 1, big Turkish company).
Standards are crucial: we need a high level of standards. Then there is no need for bidding, as all service providers will provide the same level of standards (Forwarder 2, little Turkish company).
Only costs are taken into account. Within one year people get used to the requirements. I expect big companies, big global customers to spend more for better and environmental friendly performances (Forwarder 2, little Turkish company).
Co-operation with customers like BASF, who originally comes from EU standard but also operates in Turkey market for a long history. Such customers can support implementations with their knowhow and human resources as well as supplying training. A very actual and new example of that have been experienced by us: during the construction phase of main ADR terminals which is today being used by BASF as main terminal, main technical knowhow on construction as well as operational handling have been supplied tous by fire brigade department of BASF Ludwigshafen (Forwarder 1, big Turkish company, written statement).
Besides of the legal developments, awareness and sensitivity should be increased firstly. The subject might be the competitive advantage for companies (Forwarder 7, big Turkish company).

### 10. Opportunities that occur out of that?

The convergence towards European standards through the government, the emphasis of multinational companies and the tracking of obeying regulations and rules can lead Turkey towards German levels

The Turkish market goes towards German standards: Many people once lived in Germany and they still have family there. Also social security issues can be adopted by Germany or France (Forwarder 6, big, global acting French company).
Pressure from the government: e.g. Austria or Italy have lacks of licenses, therefore companies have to switch to RORO or rail transportation in order to deliver their shipments (Forwarder 6, big, global acting French company).
Main opportunity coming out from direct support like global customers: As BASF is the access we are granted to the essential knowhow of the subject (Forwarder 1, big Turkish company, written statement). E.g. Turkey: The plans were made and the competitors followed. There is an increasing sustainability also in domestic processes (possibility to influence the government through information sharing and to spread the awareness) (Forwarder 4, big, Europe-wide acting Turkish company).
Nowadays the level of obeying rules in transportation is much better, as Turkey aims to adapt European standards. But: adaptation yes, but related training, equipment and education are missing and lacking (Forwarder 6, big, global acting French company).
Main opportunity coming out from direct support like global customer as BASF is the access we are granted to the essential knowhow of the subject (Forwarder 1, big Turkish company, written statement).
Creating the image on the community, the good balance of sustainability, economic, social and environmental aspects, customers preference evaluated as opportunity (Forwarder 7, big Turkish company).

11. Expectation towards customers/big global players?

Forwarders expect support and responsibility from their customers and partners. Commitment, share of knowhow, open and clear information spreading and trust in their performances - also in small companies with small fleets. Furthermore should the awareness been spread to academics, politicians and society and the power of the multinational companies being used to convince the government to establish sustainability-related laws.

To co-operate with us and support us in setting the standards for sustainability. To commit themselves more on forming more transparent, liable and high quality customer relationships. To share more often their knowhow by organizing more internal training sessions specifically designed for their service providers. To ensure consistency in their HSEQ requirements (Forwarder 1, big Turkish company, written statement)
We must invest in the industry and share the knowledge with customers and competitors through meetings with universities, customers, and companies to share the results. General will to invest for customer demands and needs is necessary. When the customer has sustainable ideas, we follow. (Forwarder 4, big, Europe-wide acting Turkish company)
Spread awareness: Being open and clear (website, meetings) (Forwarder 4, big, Europe-wide acting Turkish company)
The industry has to require something. It's the whole industry's responsibility (Forwarder 1, big Turkish company)
Big companies try to kill small ones to create monopolies. Therefore they put the prices down with their dominance (Forwarder 2, little Turkish company)
The government takes taxes and does not invest in the environment. If you buy a new truck, you pay 40% to the government. If you pay 50.000 Euro in Germany, you pay 90.000 Euro in Turkey. Big companies get better prices and better payment conditions. The government should avoid monopolies and oligopolies in Turkey, which put the prices and harm small forwarders. Small companies provide better service than big ones, but can't compete, as the same prices are paid. Five or six big players take the good, valuable shipments and leave the rest to small companies that have to take what remains, and get the bad, loss creating destinations. There are 5% of big players in Turkey that share 60% of the transport market. Big companies with a high turnover and big fleets don't leave chances and competition for us, as we are too small (Forwarder 2, little Turkish company).
We expect global companies to trust in us small forwarders, as even though they arrange agreements with big players, those buy our trucks from small companies anyway... (Forwarder 2, little Turkish company)
Spread awareness by laws (Forwarder 3; middle-size Turkish company)



### 3. Overview Suppliers' Statements

#### 1. How do you define sustainability in general and when it comes to supply chain management/supplier/transportation/storage from a supplier's perspective?

##### What do customers require?

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Turkish companies look for prices and for low prices especially. Customers look for low prices (long-term). Corporations focus more on sustainability than other firms. There is more awareness in Europe or in Western corporations. Awareness and understanding higher than in Turkey. Higher standards and higher budget (Supplier 1, textiles, work safety).
Sustainability means reliability, trust and communication (economic perspective, definition of sustainability not clearly stated) (Supplier 1, textiles, work safety)
In production, capability and capacity are the most important issues (Supplier 2, chemical manufacturer).
In transportation it's important to contract local producers, that are close to the customers, as this means advantages. We provide daily deliveries to customers in Istanbul. In other cities we use lorries for daily deliveries. It depends on the stocks and the amount of stock levels in the warehouses. Delivery times from Europe are 4 to 6 weeks (Sustainability is not understood)(Supplier 2, chemical manufacturer).
In Turkey mainly economic issues decide. You don't know what will happen at the next day, due to exchange rate and currency changes. Therefore economic issues are very important in the Turkish market. Also the weather, due to global warming, plays a role: In construction paints there were low sales usually in winter, but now there is production and sales all year long. Environmental issues are not important in Turkey yet. EU laws are sharp. So, companies that aim to have business in Europe or the USA have to produce within these frames. But there is no legislation in Turkey. Human lives are not very important in Turkey yet. The price counts. In the next 1-2 years new laws will be developed (Supplier 2, chemical manufacturer).
We only produce water-based products, we don't use BOC or APO3 and we get approved (Supplier 2, chemical manufacturer)
I don't know. (definition provided. Reports and documents provided by him, sustainability report and carbon emissions report since 2009)(Supplier 3, packaging supplier, Supplier 4, chemical manufacturer).
Long-term business, create win-win business and communication for long-terms (1st prio), track the market to understand the development's direction, decrease risks through developments in different sectors and markets, good warehousing, transport and raw material suppliers, have alternative suppliers (Supplier 4, chemical manufacturer).
Being a chemical company in a small city, is the responsibility to support the region. Making local business means responsibility. Support and communication management. Supporting drivers and their small families in these regions. (social responsibility). This is not so much necessary in industrialized areas (Supplier 4, chemical manufacturer).
We have to improve them, open their mind, make them learn from this". They are small people, but they are able to follow and the IT invoice system is a good example (Supplier 4, chemical manufacturer).
Safety: highly important for chemical products and especially for the warehouse design. It's really important and Alisan was open-minded and willed to work with us (Supplier 4, chemical manufacturer).
The quantity or stocks is important when it comes to demand fluctuation. Stock optimization is important too as we have 25 distributors in Turkey (Supplier 4, chemical manufacturer).
We have certificates for safety, the environment and quality. We recycle chloride rest products and are supported by the Turkish Ministry for Environmental protection. We did an agreement for ethical trade (Global Compact). Our company is here, will remain here, knows the business and focusses on products (Supplier 4, chemical manufacturer).

#### 2. How can you implement/match this approach to/in your daily work? Do you think the daily performance of your tasks can be improved, applying this definition to your daily work?

Funds, life-work balance, ... and so on. In general, ideas that create a higher value for something (Supplier 1, textiles, work safety).
Search for environmental friendly/eco products to offer to customers (sometimes same price but better footprint) – there is a wide range of products available at the moment (Supplier 1, textiles, work safety).
Implementation of standards. The customer requirements count. Suppliers are dependent on the demand, even though that the price counts (Supplier 1, textiles, work safety).
Packaging renews and cleaning of packaging, [...] use the materials again (product cycle). Therefore retake of used packaging, as raw materials are expensive (economic aspect) (Supplier 3, packaging supplier).

#### 3. Triggers why implemented sustainability related activities (quality issues) in cooperation with BASF?

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I personally have been travelling and went to different fairs. Some things are not available in Turkey, like some eco or non-harmful products. I'm always searching for new products and innovations, but customers don't prefer them. Still, it's my own will to offer these products to them (Supplier 1, textiles, work safety).
Multinational companies ask for sustainability – locals don't. Multinational companies as triggers (BASF and others): If you want a business relationship, you need to apply these standards. So they push towards this development. Owners of those companies are not Turkish (Supplier 2, chemical manufacturer).
Human issues (Supplier 2, chemical manufacturer).
Market trends (customer demands, also Turkish customers) (Supplier 2, chemical manufacturer).
1. Environmental aspects and 2. Economic aspects. If emissions decrease, you save money, if you use less gas, you pay less: cost saving (Supplier 3, packaging supplier).
Ministries as trigger (gases). There is no pushing from the corporate headquarter (Supplier 3, packaging supplier).
Usage of much energy or not recycled materials is bad for the environment and harms it. Reduction of packaging materials, reduction of industrialized usage of water, care of usage (Supplier 3, packaging supplier).
ISO Certification is enough for local companies. Global companies want to see themselves in these companies and expect the same standards, so ISO is not enough for multinational firms. They demand own surveys and standards or give the job to a service provider, which tracks the suppliers by the local companies standards. We are currently working on to get approved for 2 more certificates, which will enable better contact to big global companies (Supplier 4, chemical manufacturer).

#### 4. Obstacles and difficulties that were observed during the implementation?

a

There is always good feedback by the customers in the beginning, but in the end they choose the regular products. That's a price issue. So far I have not succeeded to convince my customers about the benefits of sustainable products (related to textiles) (Supplier 1, textiles, work safety).
Sustainability is a trend, but less people can afford it (Supplier 1, textiles, work safety).
Customers like colorful products that don't look natural. Leather for notebooks and new, un-recycled paper looks fancy. Customers want the most luxurious-looking products (handmade things are fancy), to create attention and prestige. In Turkey people love to show off. Even without an employment they have smart phones. If you come to a restaurant with your Mercedes, you gain a better treatment than if you come with the bus. This shows the mentality in Turkey (Supplier 1, textiles, work safety).
If the government does not establish rules or regulations, nobody follows. As human being you should not use harming things, but customers don't care. The profit counts, not humans or the environment (Supplier 1, textiles, work safety).
If the government cuts trees, its cutting lives – that's a political and economic issue (Supplier 1, textiles, work safety).
No problems. Waste water is not real target. Just little problems (Supplier 3, packaging supplier).
Big companies have additional costs due to R&D, quality expenses and the acting in different business fields. We have different competitors in different fields, while economy of scales are important. Small companies have more opportunities: they are less tracked by the government. They can do things, that big companies can't and gain price advantages. They employ less people, don't investigate in R&D and are focused on special products. So we have to make the customer

#### 5. Advantages that occurred after the implementation in general and compared to competitors?

a

Sustainability is a trend that started in Germany and started 10 years later in Turkey. Students learn about it in school. The new generations have new ideas. There is awareness in the society, but not yet in the business. It's kind of a follow ship from the West to the East (Supplier 1, textiles, work safety).
All companies produce the same goods (water based chemicals) (Supplier 2, chemical manufacturer).
Export figures can benefit from sales to sustainability-requesting countries. The Turkish market won't benefit from it (Supplier 2, chemical manufacturer).
Energy consumption went down. Continuous reduction (3,2 kW per hr/drum to 2,93). Less consumption means less costs - less costs is the biggest advantage. Environmental savings are necessary, as we can't earn the environment again.
Contamination, in waste water e.g. harms the natural water and can't be used anymore (Supplier 3, packaging supplier).
If you want to do global business (we have 20-25% global sales, 40% in Turkey and small and middle-sized customers that focus on the price), the rest is B2B and added value (total business mind). This enables to more and it is possible to create something new, like a cooperation. The price is only a primary cost, but cooperation can make big costs being shared and creates safety (Supplier 4, chemical manufacturer).

#### 6. Things that have been learned/can be learned? (int./European companies)

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Turkey is so different like Asia and Europe in one. There are many different problems. Like the recent riots. People love and care about social issues, the environment and other related things. If somebody is offended everybody sticks together (Supplier 1, textiles, work safety).
The government doesn't treat the people nicely. It's the same in corporations. If the leader is good, the company is successful. It's the same in a society. We have many religious people and they have a lot of respect to all kind of leaders, it doesn't matter of imam or politician. If the politics would be good, all would go well. At the moment it doesn't look like a good future (Supplier 1, textiles, work safety).
Savings, e.g. by using recycled water for drop tests (Supplier 3, packaging supplier).

7. Tips for implementation?

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Help people to protect their world. You will gain in mid to long-term periods. Partnerships in long-term businesses are important. My dad for example is a farmer and craftsman. He has to cut trees to build furniture. But he plants new ones not to feel guilty (Supplier 1, textiles, work safety).
Waste water treatment (Supplier 1, textiles, work safety).
Teach our children (from the childhood to the growth up. 60 % of the Turkish population is not properly educated. Istanbul is not Turkey. That's especially relevant in the East. People there have low education backgrounds. The government give the people cows and small things to gain there support, and therefore gains power (Supplier 1, textiles, work safety).
We only have one world. We do we still distinguish between countries? We are one unit (Supplier 1, textiles, work safety).
Disasters help to understand (Supplier 1, textiles, work safety).
No clue, no idea: The global side is active, but not in Turkey (Supplier 3, packaging supplier).

Turkish market

8. Is awareness about Sustainability in SCM market/field/business given? How can it be spread?

All suppliers together can spread awareness. Also all producers should investigate and support this and should agree, as many time not the production is harmful, rather than the materials (unity is needed) (Supplier 1, textiles, work safety).
Price shouldn't matter, but profits are necessary and important, to be liquid to invest in sustainability (Supplier 1, textiles, work safety).
Customers are much more aware today. But it depends how much they are involved in other markets. It depends on the export strategy. International companies can provide examples and visions (Supplier 2, chemical manufacturer).
New rules required by the government. Risk managers have to get stricter in Turkey. Punishments have to become stricter, too. ADR rules, custom clearance are examples of issues that people only follow if rules are applied (Supplier 2, chemical manufacturer).
It's a global issues, but there are no audits, not even in Germany. Our multinational customers don't ask for documents about the issue (Supplier 3, packaging supplier).
Germany started a study, but not Turkey, China or other third countries – only Germany. No knowledge about SCM/transportation and sustainability, no clue (Supplier 3, packaging supplier). The study was done by an automotive company (ZF, Vico), a big Turkish brand. E.g. Ford: suppliers have to meet all requirements in order to work together and also their subcontractors (Supplier 3, packaging supplier).
A study was done by an automotive company (ZF, Vico), a big Turkish brand. E.g. Ford: suppliers have to meet all requirements in order to work together and also their subcontractors (Supplier 3, packaging supplier).
Some customers are aware, some are not (P&G knows, small companies in Turkey don't, for them sustainability makes no sense. But I have no idea about the transportation mode (Supplier 4, chemical manufacturer).

9. Hinders to implement sustainable performances? What are the main obstacles in TR towards a sustainable development?

a

High taxes (Supplier 1, textiles, work safety).
The government. No belief in the government. No support by it. Turkey is divided into Ataturk and Erdogan. The government is too religious (Supplier 1, textiles, work safety).
Lack of laws and changing conditions and penalties (Supplier 1, textiles, work safety).
There are too many Muslim (religious) followers in Turkey: This stops development, as the history shows. Before Ataturk there were no statues, no art, and so on (Supplier 1, textiles, work safety).
The government supports too many minorities which hinders the country's development. There is no stability (Supplier 1, textiles, work safety).
Focus on the lowest prices - BASF does this too (Supplier 1, textiles, work safety).
Customers don't ask for it. If they would, then we would have to implement these issues. We have to act according to our customers' demands (Supplier 3, packaging supplier).
Short-term thinking cant implement investment as long-term plan (Supplier 4, chemical manufacturer).
The government has to track chemical material handling (like chloride wasted in water). They have to ask for handling proofs by the companies. It's necessary to track small companies, too. Big ones are tracked, but the small ones are not seen in many cases. It's necessary to develop rules, standards and to do checks if the companies obey the rules. Environmental rules pushes and creates pressure to customers and companies. It's the time for companies, but they don't realize the issue. Regulations must be stricter. Only prices are checked by customers, due to competition. But it is a disadvantage for big, trustful companies that obey the rules. Big companies that want to work globally have to invest and have therefore higher costs. It's the same for social securities – it's a matter of ethic (Supplier 4, chemical manufacturer).

10. How can the key problems be solved/what is needed (generally and in relation to cooperation with BASF)?

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International customers do. Domestic Turkish companies are not involved – they only act if regulations force them. Sustainability costs money – therefore it's not worth it to invest into it! (Supplier 3, packaging supplier).
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11. Opportunities that occur out of that?

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I believe in the young people. They will change the situation in a couple of years (Supplier 1, textiles, work safety).
Niche markets have to be developed in Turkey (Supplier 1, textiles, work safety).
Things have to get developed and get inspired by other countries and other best practice (Supplier 1, textiles, work safety).
Gezi was started from a green purpose (Supplier 1, textiles, work safety).

#### 4. Overview Customers' Statements

##### 1. How do you define sustainability when it comes to supply chain/transportation/storage operations from a customer perspective? Which issues are relevant for you? What do customers

a

Customer satisfaction (Customer 1, multinational consumer goods).
We don't want to produce waste and we have sustainability targets until 2020 (you can find them at our website, too). We want to achieve these targets for Turkey and for everywhere (Customer 1, multinational consumer goods).
Carbon footprint in correlation to the prize for a product. Can be quicker and more expensive, but also more sustainable – it's a matter of achieving a cost benefit (Customer 1, multinational consumer goods).
Responses to customers, pharmaceuticals responsibility means quality. There were problems with Chinese and Indian companies recently. But there are better policies and better quality here. E.g. fish oil: Some use sustainability as marketing method. Sustainability is not really requested. Price or quality are prioritized (Customer 2, Turkish chemistry product distributor).
We are the only factory in Turkey of L'Oreal. Sustainability here is just in its beginning. We were just acquired, as the plant was no L'Oreal plant before (6-8 years now). In the beginning we focused on other issues, sustainability is a future topic. Definition of sustainability is not known. Of course something is going on here, but no specific terminology is known, as the topic is not so frequently used at L'Oreal at the moment. We do social activities of course and have a group which is focusing on it (Customer 3, manufacturer of hygiene products).

##### 2. What is the current role of sustainability/sustainable supply chain management from your company's corporate point of view? Why?

Website (Customer 1, multinational consumer goods).

The global perspective can be read online, but there are other priorities for Turkey, there is no focus on sustainability here. These issues started 20/25 years ago in other regions, but not yet here. We aim to reduce them by 50% between 2005 and 2015. That's a global approach and is also valid for Istanbul. Same for electricity consumption (Customer 3, manufacturer of hygiene products).

##### 3. What is the current role of sustainability/sustainable supply chain management from your point of view as Turkish business unit? Why?

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This is a problem in emerging markets and can be slightly accepted for Turkey too. Turkey as a part of Europe wants to become a part of the EU. Therefore are loads of regulations and rules that have to be applied. It's the EU perspective that triggers. Standards are requested from the head office in London and by the Ministries in Turkey. London (headquarter) is interested in health, safety, and environmental issues (Customer 1, multinational consumer).
Factory: from landfill to waste, we aim to produce no waste at all. We are the first company in Turkey that has a green factory and lot of companies supports us. We don't have a normal factory. We gained prizes as well (Customer 1, multinational consumer goods).
The priority in Turkey is safety, that's the investment focus while L'Oreal concentrates on all aspects globally. It's the end of the process in Turkey. We receive regulations of global L'Oreal. Of course we are active but we need much more time than developed factories or not. If the general commitment. Other countries had much more time to react than we have now. We have more pressure than them (only 1 year). Compared to other sites we are a bit late, but have sustainable projects, an idea evaluation contest in the company and our whole approach is a general, average approach (Customer 3, manufacturer of hygiene products).

##### 4. Would you pay more for a sustainable supply chain performance? (How much % more compared to an ordinary one?) Why?

a

Suppliers: Should not always be driven by the price. Aim to produce products which need less water within the production (create an idea competition) (Customer 1, multinational consumer goods).
We never had the choice between sustainable products and ordinary ones. Probably in the near future, Turkish customers will request them (e.g. GM) will reduce packaged goods (not started yet) (Customer 1, multinational consumer goods).
The expectations of suppliers should change. It's good to share systems and findings with us (like BASF). In general it's helpful to share your experience in all of Turkey. We want to benefit. It could be possible to share waste material within the supply chain. No waste for BASF (tanks, IBCs) (Customer 1, multinational consumer goods).
There is not enough pushing from the customers. People don't have the money or are maybe not ready to pay for it. In alternative areas (Kadikoy or Besiktas) people pay for green products. It depends on the income of the people, rich people can do (Customer 1, multinational consumer goods).
No, but customers asked for audits for manufacturer. You are also responsible for transportation (time, conditions, humidity, temperature and so on). There are no regulations. If customer pays for it (mostly global companies pay, locals don't. E.g. Ethanol requires specific clothes for the staff and specific trucks for the shipping. This will be performed by customer requests and more and more request it (Customer 1, multinational consumer goods).
We would pay more for safety issues, yes. Environmental issues are in the scope for sustainable suppliers (ISO norms). Raw material is purchased globally, locally we agreements but, I can say that we are not in the position to choose expensive suppliers just for an environmental reason, but we can do it more than before. In forwarding the customers are responsible for the transport of end products. Big players in Turkey are aware. For raw materials and transportation we request licenses, but not in terms of environmental issues. We "believe" in big players that drive for us, like Schenker or Mars Logistics, but we don't know (Customer 3, manufacturer of hygiene products).

##### 5. Which obstacles would you mention when it comes to the implementation of Sustainable Supply Chain Management in Turkey?

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Lacks in environmental friendly energy production. If you change to wind mills you gain support by the government. We, Tuzla plans solar panels. It's possible to sell the energy to the government and to earn money (Customer 1, multinational consumer goods).
Everybody knows, but everybody has pressure (prices are decreasing, force by the government, pressure in purchasing, pressure to us, the distributors. This pressure affects the whole chain. In the end nobody cares about the environment, if pollution occurs or not. If the price is attractive, customers go for it. Governments should pay attention on this. E.g. China: The government puts pressure, more and more and shows how to manufacture in an environmental friendly way (Customer 2, Turkish chemistry product distributor).
China and India have competitive advantages due to low labor costs, which enables cheaper production (Customer 2, Turkish chemistry product distributor).
People see these aspects only in general, not in detail. Partners ask for documents, but don't know why they ask for, they don't know the reason of sustainability, health or safety issues, of recycling or material re-usage. People are not trained enough to meet the regulations. The rules are good, but nobody knows how to check and how to control them. The application is missing. One example is the implementation of wooden pallets. There is a lack of information from the government of how to apply the rules. Instead of providing information and guidelines, the new law comes and nobody knows about it. Domestic suppliers: They have a commitment to us, yes, but if you tell them to do it in terms of the environment, they don't understand the reason and only argument in terms of costs. International companies understand the issue and have a commitment. Local companies don't have high priorities for safety and environmental issues (Customer 3, manufacturer of hygiene products).
Is it possible to lead them? Yes. First there is a lack of understanding, but if many companies ask about a certain thing, they will start to take it serious. When a big player pushes through demand, of course they will take action to meet the requirements (Customer 3, manufacturer of hygiene products).

##### 6. Which opportunities can occur for Turkey when implementing SSCM?

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There is a continuous improvement in the mindset of people. E.g. in went to a primary school recently and there was a school club for sustainability and the protection of the environment. These things are now popping up. People become more sensitive (Customer 1, multinational consumer goods).
We have the highest gas prices of the world. This was made to reduce the traffic (Customer 1, multinational consumer goods).
In Istanbul the metro connection to Tuzla is planned, you will reach the airport Sabiha Gokcen by metro then, instead of by bus. The infrastructure gets improved and is currently under construction. This will reduce jams and pollution. A high speed train between Ankara and Istanbul is planned and public transportation will improve (Customer 1, multinational consumer goods).
Opportunities exist, like the natural hot water in Denizli (Turbines), wind or sun, day by day we get closer to this and statistics document it (Customer 1, multinational consumer goods).
Turkey has other problems at the moment. Sustainability is no issue at the moment (Customer 2, Turkish chemistry product distributor).
But partners get familiar with the requirements after a while and they apply the demands, which leads towards global standards (Customer 3, manufacturer of hygiene products).
We changed to in-house packaging, which makes transport more efficient, as we don't have to ship the air of empty bottles. Instead we produce our own bottles and there is no transportation needed. It's the same for ergonomics. It's a direct flow: bottle production – filling – shipping. We do local sourcing of raw material. In general we achieve cost savings for waste, energy, etc. and for transportation, which reduces CO2 emissions. Cos emissions are theoretically tracked, by travelled time and distance. But according to all the jams, for example in Istanbul, it's hard to predict how reliable the results are (Customer 3, manufacturer of hygiene products).
SCM influences design and development. E.g. the bottle design was changed to use less plastic. The main aim before was productivity, fast filling etc. Now we decreased the productivity aspect, the limits and so on, to have less packaging and packing material. All departments have their actions and there are 2 annual meetings for SCM. L'Oreal Turkey is much more active and inspired than other plants (Customer 3, manufacturer of hygiene products).

##### 7. How would you define the current general awareness about sustainability in SCM in the Turkish economy/market/business?

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Turkey is different, than South Africa for example. Turkey can be seen on one level with the Middle East. Turkey is more developed, has more standards and regulations and the government pushes more than in other countries (Customer 1, multinational consumer goods).
Emerging markets are firstly cost oriented. Costs have the priority, not the environment. But it's changing day by day and something is improving. TV, media and schools have environmental classes and programs. This changes the mindsets. In maybe 5 to 10 years this mindset will be improved (Customer 1, multinational consumer goods).
Other pushing methods are penalties by the government. This helps, as penalties were not high in the past. Companies start to employ environmental engineers and some got high fines (Customer 1, multinational consumer goods).
More and more organic products reach the market and people start to buy them. If the issue is spoken up loudly, more people will pay attention on the issue (Customer 2, Turkish chemistry product distributor).
There is no awareness. It must be educated in school. Young people have to learn the issue. Turkey is not a very developed country regarding sustainability at the moment. The government has to initiate it. Individual movements in the West of Turkey are not enough. People in the East have other problems (Customer 2, Turkish chemistry product distributor).
There is no waste separation (Customer 2, Turkish chemistry product distributor).
People need force, then they follow. They need leadership (Customer 2, Turkish chemistry product distributor).
We did customer surveys. The head quarter in Paris is the main trigger (Customer 3, manufacturer of hygiene products).

**8. Can you mention other issues, learnings, difficulties, thoughts, wishes related to SSCM from a customer perspective?**

Quality and procurement should have requests: But it's not possible to request them for suppliers, conditions of raw material, but not advance for Turkey. It's a raw material question, not sure if it's a sustainability issue (Customer 1, multinational consumer goods).

Turkey is on a good way and will become more efficient and greener as a country. We signed the Kyoto Protocol, but I still see pollution of rivers and of the air. There are still issues to fight against. Civil organizations appeared recently and become active. Like Greenpeace and so on. This can be seen as positive or as negative, but Turkey is in a good direction. I think the aspects are more positive (Customer 1, multinational consumer goods).

Istanbul is lucky, due to the wind etc. Maybe there is pollution, but people don't feel it – compared to China for example, where you feel the immense pollution due to car emissions. There are emission tests here, in Tuzla, too and it's very green. But Dilovasi is bad. E.g. the steel factory opens the filters during the night. This must be sentenced. Laws exist but not obeying them must be punished (Customer 1, multinational consumer goods).

## 5. Overview Consultants' Statements

Market

### 1. Estimation about the industry and the Turkish transportation market regarding the awareness of sustainability?

Such a new issue for Turkey, but SSCM will be the last one within Sustainability. Sustainability is currently only a topic for the company report and related to CSR (Consultant 1, CSR Consulting).
I'm a sustainability expert, but SCM is a very new issue for me and Sustainability is very new for Turkey. I'm reporting to achieve the spreading of this concern. In reality it must be written to achieve understanding. SSCM is quite far away. Companies have to be sustainable first. There are currently no strategies on sustainability. It's more like being environmental friendly for cost reasons (it's a start, but that's it) (Consultant 1, CSR Consulting)
SSCM: The main actors are international companies with business in Turkey, which implement rules, strategies and so own from their mother lands (from the HQ to Turkey) (Consultant 1, CSR Consulting).
Rules and regulations are not so tight here in Turkey, and some companies use these gaps for a while, but for competitive advantages and for corporate strategies it is important and companies come to make money. E.g. a manufacturer asks the supplier to sign the Global Compact Contract. Indeed it's signed, but not applied. There is currently no control, only good will. Some companies just copy statements of some world producers from the same branch, but nobody checks and the company does not apply the standards. Nobody controls if the issues are implemented (Consultant 1, CSR Consulting).
We have a selection of priorities that we want to implement in the report of big companies that we discuss in workshops. I always implement SSCM, but it's always declined after the first round. It is not the issue at the moment. Very small companies don't want to go into detail, as sustainability is not obligatory at the moment. Just big one start sincerely (Consultant 1, CSR Consulting).
Some customers are the biggest companies in the world, but SSCM is no issue for them. It's not an issue for banks, it's far away for construction and no issue for the food industry. Many companies are waste of time for me, my ideas and research about sustainability. I can't offer something to them. The cheapest and best price is the aim for supply chain management (Consultant 1, CSR Consulting).
Child labor is checked and important (humans and labor), but about environment I doubt that. SSCM is too far for Turkey. Energy efficiency and cost saving are the priority at the market (Consultant 1, CSR Consulting).
The sustainability agenda grows slower than we hope, due to the political instability (Gezi, Eivan). These impacts stop the investigation towards sustainability; it's like a political crisis. It continues later on, but all this creates obstacles to continue (Consultant 2, Social focus of sustainability).
In the company structure of the Turkish market governance is missing in many companies. Instead of becoming corporations (like SMLs or big companies) they stay like privately owned companies. This makes it difficult to develop. The market structure makes it hard and difficult to promote sustainability. Companies that try to implement sustainability are mainly activated by foreign investors, especially global companies that act in Turkey. They create global pressure. In biddings customers request sustainability, they request sustainability reports and so companies start to investigate in reporting (Consultant 2, Social focus of sustainability).

### 2. Possibilities to spread the awareness, to create understanding?

By laws! Obligations are necessary to make companies to do extra things (Consultant 1, CSR Consulting).
Popular companies have to promote sustainability and have to present gains that they achieved, have to proof the benefits with facts in quality, sales with numbers, in order to motivate others (Consultant 1, CSR Consulting).
TUSIAD Report: Aims to be very easy and simple, but deals more with audits and policies. It should change the way you think instead, otherwise you won't succeed. Even this kind of road map about sustainability gives reception about SSCM. It is helpful, but just a standard approach (Consultant 2, Social focus of sustainability).
A lot has to be done – a paradigm shift is necessary. Otherwise all will be new and always be a problem. The true nature of sustainable business is missing. The clear opportunity to do sustainable business should come. Still the real costs of losing the environment are missing and not understood. The government acts too slowly. 80 % of Turkey's energy is imported. This can become crucial for companies (Consultant 2, Social focus of sustainability).
The government does green procurement in some states (Consultant 2, Social focus of sustainability).
"REC" works on governmental policies and formulates them for environmental issues (Consultant 2, Social focus of sustainability).
Low awareness effects the customer behavior – price and quality orientation (Consultant 2, Social focus of sustainability).
Cultural obstacle: While the government improves public transportation, also the consumption aspect is tried to be controlled. Turkish people love to drive their car alone, which is a big reason for the high amount of traffic and a cultural obstacle (Consultant 2, Social focus of sustainability).
The social life is limited and focused on shopping malls to shop and eat (Consultant 2, Social focus of sustainability).
Awareness and education should start for children. But political policies are necessary as part of sustainable development in Turkey, it can't be achieved just by the will of companies (Consultant 2, Social focus of sustainability).
We provide training and education about sustainability. For example more efficiency for blue color workers, when the economic level is lower ("education and salary), people are more effected and motivated than white color workers who are more consumption oriented. Blue color workers react and implement it much more, easier and faster. There is hope as people reach quicker and faster when education comes, too (Consultant 2, Social focus of sustainability).

### 3. What are the opportunities for sustainability in Turkey/the Turkish supply chain branch?

Companies aim competitive advantages to enter global markets or to lead the market here. These companies are very few, it's rare in Turkey that companies have this vision. Therefore it is not possible to discuss the matter of SSCM with them and the market structure (Consultant 2, Social focus of sustainability).
Energy efficiency is big for SMLs and big suppliers that worked on SSCM. Energy efficiency and waste management. Environmental issues are not too widely spread yet (Consultant 2, Social focus of sustainability).
The country is in a corner point due to growing market and foreign investors. This is the opportunity to grow sustainably. If a paradigm shift and understanding is achieved while growing, understanding that sustainable growth means constant success and green country is better. If ignoring this, the growth will not last. It's a trend and companies will go somewhere else. Turkey will get stacked with its consumption habits and limited production opportunities (Consultant 2, Social focus of sustainability).

### 4. What are the obstacles for sustainability in Turkey/the Turkish supply chain branch?

The market reality: Quality is important, but only for the best possible price. If it is good enough, companies buy the cheapest. This is an obstacle for supply chain management development and for local development (Consultant 1, CSR Consulting).
The social side of sustainability is critical in Turkey. It's critical especially in textiles, where the laws are obeyed. Still textile companies face risks due to workers without registration that do black laboring. It's a big risk in textiles and also for suppliers. If you face this risk, it's a bigger issue than the environment. Same problem occurs in agriculture, in environmental protection, but it's not big. In SCM there are some high risks, that shocked, too, but a lot was done. Companies like Puma, Nike, Mark & spencer and others work hard on this issue, without solving these important points. There is no chance to look to other issues (Consultant 2, Social focus of sustainability).

Industry

### 5. Demands of companies towards suppliers/service providers/the consultant regarding sustainability?

Applying of requesting sustainability and using policy gap. Sustainable supplier agenda is only a matter for global companies. Sustainable companies see the opportunity without a sustainability agenda. In Turkey it depends on the culture of the company. If they are true, they implement. In Turkey many companies don't care about the environment. There are sophisticated, ecological/sustainable programs in Europe, but not in Turkey. They see Turkey as wasteland and also consumers don't care. In this way, Turkey stays a waste land (Consultant 2, Social focus of sustainability).
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### 6. What is the current role of sustainability/sustainable supply chain management from company's corporate point of view? Why?

### 7. What is the current role of sustainability/sustainable supply chain management from their point of view as Turkish business unit? Why?

### 8. Would they pay more for a sustainable supply chain performance?

No, as it is no priority. Only if everything works. No understanding to solve problems through sustainability. Way of issue has priority and the budget. The bad thing is that if there are savings for a company in operations, we tell them not to spend and rather invest the money in sustainability. So do that and gain benefits, some don't. It is important to continue to gain benefits through sustainable investments and to reserve money for the sustainability agenda (Consultant 2, Social focus of sustainability).
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### 9. Triggers to implement sustainability for companies?

### 10. Reasons against the implementation?

### 11. Tips for implementation?

Governmental support: regulations, tax discount (Consultant 2, Social focus of sustainability).
The absence of the government means an obstacle. The starting point for sustainability is governance (Consultant 2, Social focus of sustainability).
Transparency and accountability are 2 missing, important aspects for the issue, even if you want to start to do it (Consultant 2, Social focus of sustainability).
Vision and support of top management is missing. Not many companies have sustainability agendas and strategies. It stays at a certain level, but there is no real change – it is a bit like green washing (Consultant 2, Social focus of Stakeholder engagement is necessary (private owned companies. Markets change quickly in Turkey. Its therefore important to implement the stakeholders' requirements (Consultant 2, Social focus of sustainability).
Culturally Turkey is more stakeholder- rather than shareholder oriented (Consultant 2, Social focus of sustainability).

### 12. How can the key problems be solved/what is needed?

### 13. If you would have a wish regarding a sustainability development in TR, not taking any challenges or difficulties into account, what would it be?

Pressure by laws, the market and by demands (Consultant 1, CSR Consulting).
Educate the end customer. Basic education is a big issue in Turkey. Many people just gained basic education. To influence the customer choices will be a long journey for Turkey (Consultant 1, CSR Consulting).

## 6. NGO Statements

Market

### 1. Estimation about the industry and the Turkish transportation market regarding the awareness of sustainability?

Not much info about it. In Turkey sustainability means quality. It's used as a concept. Look at a book description, but without understanding the essence. If sth. is affordable, it is sustainable (NGO 1)

### 2. Possibilities to spread the awareness, to create understanding?

Most companies are profit oriented. Benefit through marketing projects, but is not converging the culture of the company. Sustainable understanding is bounded, but should be part of a company culture instead. Otherwise it is not applied and instead the elegant and easiest way is chosen (NGO 1).

The government focusses on road transportation, which is not sustainable: small shipments with a lot of labor and flexibility. Sea transport can be achieved through better planning, which is more efficient. There is no hope for sustainability in transportation, there is no diamond, it's just a conveyor belt (NGO 1).

### 3. What are the opportunities for sustainability in Turkey/the Turkish supply chain branch?

Small enterprises that produce sustainable products can sell them directly to the customers, who can go there and buy the product at its place of origin. This can be used for marketing, too (NGO 1).

It is not too expensive. If the existing infrastructure is available, the same prices would occur for sustainable transports. If the quality is the same, and there is the choice, companies would prefer the sustainable alternative (NGO 1).

### 4. What are the obstacles for sustainability in Turkey/the Turkish supply chain branch?

Bad situation in general. The electricity industry is a mess; the agriculture sector is the same. Most goods are consumed in Istanbul, where 25 % of the population lives. Even if you produce something, the local markets produce only for the big cities of Istanbul and Ankara and to do this, transport is necessary. Transport over massive distance, with high footprints of the products. It is cheap in price, but there are no benefits for the community and only damage for the environment remains (NGO 1).

Industry

### 5. Demands of companies towards suppliers/service providers/the consultant regarding sustainability?

I don't know. Not certificates. You need to be familiar with small places, but based on instincts (semi-professional) (NGO 1).

### 6. What is the current role of sustainability/sustainable supply chain management from company's corporate point of view? Why?

### 7. What is the current role of sustainability/sustainable supply chain management from their point of view as Turkish business unit? Why?

The good thing is: It reduces costs and increases sustainability. It is not an ecological approach, it's a cost approach. If you use resources efficiently, you decrease stock expenses and warehousing costs. This is the dream of every company, to decrease these costs (capital commitment costs) (NGO 1).

### 8. Would they pay more for a sustainable supply chain performance?

Economic rather than ecologic perspective: revenue and profit is everything. And marketing too (NGO 1).

### 9. Triggers to implement sustainability for companies?

Marketing issue: They can say a loss is ok, but only until a certain level (scarify for marketing)

Cost reduction

Improved processes (deliveries without delays, deliveries to closest locations are reliable and the best for the environment) (NGO 1).

### 10. Reasons against the implementation?

Lack of knowledge (capability, qualification, resources and will). People should understand that sustainability means benefits (NGO 1).

### 11. Tips for implementation?

The top management has to believe in sustainability and see the value in it (NGO 1).

It must become part of the working culture – sustainable thinking has to be developed (NGO 1).

Sustainable performances (time, quality, resource efficiency) (NGO 1).

### 12. How can the key problems be solved/what is needed?

Harbors and management would be necessary and the industry must be settled around the harbors. Before the Republic, all industry was around the harbors (NGO 1).

The government thinks that every little area must have its own industrial and agricultural zone. There is an increasing demand of employment in the industry, but the demand is not knowledge-intensive. Cheap and uneducated labor is required.

### 13. If you would have a wish regarding a sustainability development in TR, not taking any challenges or difficulties into account, what would it be?

The politics are a mess, the professional chambers have barely communication with each other, and nobody listens to professionals (NGO 1).

Less manipulation for benefits of the own sector of the politicians – this is not sustainable for Turkey (NGO 1).

Centralized decisions are necessary, as well as negotiations with each other (NGO 1).

Turkey wants to become an energy exporter, but you need to be sustainable for that. You have to work sustainable if you don't want to lose your resources (wetlands, water,...). All companies want to emerge and to grow. But that can become your own suicide. The decision makers should know what they have to do, as they are only smart people: safe food and water resources for the country! (NGO 1).

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