

Open Research Online

The Open University's repository of research publications and other research outputs

Employee Engagement in Corporate Greening: A Study of Front-Line Managers in Belarusian Companies

Thesis

How to cite:

Andrianova, Olga (2019). Employee Engagement in Corporate Greening: A Study of Front-Line Managers in Belarusian Companies. PhD thesis The Open University.

For guidance on citations see [FAQs](#).

© 2018 The Author

Version: Version of Record

Copyright and Moral Rights for the articles on this site are retained by the individual authors and/or other copyright owners. For more information on Open Research Online's data [policy](#) on reuse of materials please consult the policies page.

oro.open.ac.uk

The Open University

The Open University Business School

Department for Public Leadership and Social Enterprise (PuLSE)

**Employee Engagement in Corporate Greening: A
Study of Front-Line Managers in Belarusian
Companies**

A thesis submitted for the degree of Doctor of Philosophy

Olga Andrianova

MSc HRM, MRes, MBA, Dipl-Kff.

September 2018

ABSTRACT

The study investigates how front-line managers in a post-Soviet context facilitate learning for corporate greening in their organisations. The topic is addressed by applying situated learning theory, using two concepts – community of practice and boundary objects. Belarus was selected as the country of study because it is a representative example of a post-Soviet transition economy. Using a multiple case study approach, 52 semi-structured interviews among front-line managers, meeting observations and photographs were collected in three chemical plants in Belarus. Template analysis was used to analyse the data.

The findings of this study reveal ‘corporate greening’ as a boundary maker in the learning environment which produces three possible boundaries across values, agendas and priorities alignment. In their boundary work, Belarussian front-line managers employ three boundary objects – visionary, structural and market-related – constructed by post-Soviet socio-historical influences to facilitate learning by encouraging an affinity to the national identity and environment, developing shared infrastructure for discussion, but also facilitating a transition from a Soviet type of thinking to a post-Soviet mindset regarding recognising business opportunities for ‘green’ business practices. These include the practices for: working with other departments; constructing an image of themselves as educators; and ensuring that ‘green’ activities are sufficiently aligned with both the organisation’s and the governmental view.

This study contributes to situated learning by showing that front-line managers use opportunities in the boundaries for further community growth by ‘re-purposing’ existing practices inherited from the Soviet Union, or creating new facilitation practices, to maintain ‘conversations’ around corporate greening. These findings also contribute to a better understanding of the practical challenges of front-line managers as facilitators of learning for corporate greening in the complex and interrelated socio-historical learning environment. In addition, the results of the study are valuable for managers who are looking to increase employee engagement in corporate greening.

ACKNOWLEDGEMENTS

First of all, I would like to thank my mother, Galina Andrianova. Her love and encouragement made it possible to begin this PhD. This PhD is dedicated to her who is, I hope, proud of me, watching from the sky.

My deepest gratitude goes to my supervisors, Dr Anja Schaefer, Dr Owain Smolović Jones and Dr Diane Preston, for their academic guidance, support, and a caring attitude that kept me on track. I would like to acknowledge the time they have taken to read my work and show my gratitude for the thorough and professional feedback they have provided. Their supervision was exceptional and a particular source of inspiration and, at the same time, a source for reflexivity and developing my critical thinking.

I also wish to thank Drs Peter Bloom, Reg Butterfield, Bjorn Claes, Caroline Clark, Cristina Quinone, Davendra Kodwani, Michael Ngoasong, Michael Oliver, Ruslan Ramanav, and Lin Smith, MBA DipHRM, for fruitful discussions throughout my PhD journey that have enriched the quality of this work. I also would like to thank my other colleagues at the Open University and fellow MRes/PhD students for feedback on my presentations, and sharing their ideas with me during Student2Student seminars, PhD and Departmental workshops, Ethics Reading Group, Writing Group, CKOP Group meetings, and other events and communities. Special thanks to the Research Degree Office and Enterprise Team of the Faculty Business and Law for offering advice and support throughout the MRes and PhD programmes.

I would also like to extend my gratitude to the staff at the chemical plants in Belarus who showed their hospitality and helped to collect the data. Their contributions and insights have been invaluable to the development of this research and to my personal learning.

Finally, a big thank you to all the reviewers, discussants and participants for the various conferences at which parts of this work have been presented - most especially, the OLKC Annual conference 2018, the BAM Annual Conference 2017, and CSR Conferences 2015 and 2016. The comments received at these conferences were useful in helping to improve the quality of this work.

TABLE OF CONTENTS

ABSTRACT	2
ACKNOWLEDGEMENTS.....	3
TABLE OF CONTENTS.....	4
LIST OF FIGURES	7
LIST OF TABLES	8
LIST OF DEFINITIONS	9
CHAPTER 1: INTRODUCTION.....	11
1.1. Background to the research.....	12
1.2. Rationale for the research	14
1.3. Importance of this study	18
1.4. Aim and objectives of the study	20
1.5. Outline of the thesis.....	22
CHAPTER 2: LITERATURE REVIEW	25
2.1. Corporate Greening.....	26
2.1.1. What is ‘corporate greening’?	26
2.1.2. Motivations for ‘corporate greening’	34
2.1.3. ‘Corporate greening’ in countries in transition	38
2.1.4. Summary	41
2.2. Facilitating learning for corporate greening.....	43
2.2.1. What does ‘facilitating learning’ mean?.....	43
2.2.2. Facilitation of learning for corporate greening	47
2.2.3. Practices facilitating learning for corporate greening.....	49
2.2.3.1. Environmental training	49
2.2.3.2. Rewards and recognition	51
2.2.3.3. Employee empowerment	52
2.2.3.4. Organisational culture	54
2.2.4. Summary of research gaps and developing research agenda	56
2.3. Theoretical underpinnings	59
2.3.1. Rationale for selection theoretical lenses.....	59
2.3.2. Theoretical framework	70
2.3.2.1. Communities of practice.....	72
2.3.2.2. Boundary objects	82
2.3.2.3. Facilitating practices as boundary spanning activities	89
2.4. Conclusion	97

CHAPTER 3: BACKGROUND	101
3.1. Post-soviet transformation in Belarus and corporate greening	102
3.1.1. Environmental performance of Belarus	103
3.1.2. Socio-historical influences	105
3.1.2.1. Societal changes.....	105
3.1.2.2. Legislation and institutional framework.....	108
3.1.2.3. Economic changes.....	110
3.1.3. Summary of the section	113
3.2. Chemical industry in Belarus	114
3.2.1. Corporate greening in chemical industry in Belarus	117
3.2.2. Three chemical plants for this study.....	120
3.3. Conclusion of the chapter	122
CHAPTER 4: METHODOLOGY	124
4.1. Research Philosophy.....	124
4.2. Methodology.....	128
4.2.1. Research methodologies in situated learning.....	128
4.2.2. Qualitative research methodological approaches.....	131
4.2.3. Selecting qualitative case study methodology.....	132
4.3. Multiple case study design	136
4.3.1. Unit of analysis	137
4.3.2. Selection of cases	137
4.3.3. Sampling strategy	140
4.4. Methods	144
4.4.1. Selecting appropriate qualitative methods	145
4.4.2. Data collection	146
4.4.2.1. Semi-structured interviews	147
4.4.2.2. Direct observation	151
4.4.2.3. Internal documents and external sources.....	151
4.4.3. Data analysis.....	152
4.4.3.1. Between data collection and data analysis.....	152
4.4.3.2. Between literature review and data analysis	154
4.5. Ethical considerations and role of the researcher	157
4.6. Chapter Summary	160
CHAPTER 5: 'GREEN' COMMUNITIES OF PRACTICE.....	162
5.1. Use of hazardous substances	163
5.2. Energy efficiency	175
5.3. Environmental Innovation	181
5.4. 'Greening' and cleaning.....	185
5.5. Summary of the chapter	190

CHAPTER 6: BOUNDARY OBJECTS.....	193
6.1. Structural boundary object: Law	194
6.2. Visionary boundary object: Rodina (homeland)	201
6.3. Market-related boundary object: Market	207
6.4. Summary of the chapter	213
CHAPTER 7: Practices facilitating learning for corporate greening	215
7.1. Engaging through awareness raising and incentives	216
7.1.1. Sensitisation practices	216
7.1.2. 'Moral' encouragement practices	223
7.2. Maintaining the patriotic image of the environmentally responsible citizen.....	227
7.2.1. Participating in historical and commemorative events.....	228
7.2.2. Mentoring and apprenticeship.....	232
7.3. Aligning through fostering diverse networks	237
7.3.1. Coordinating practice with inspectors and city council	238
7.3.2. Collaborating environmental innovations	244
7.3.3. Negotiating practices with international clients.....	248
7.4. Summary of the chapter	253
CHAPTER 8: CONCLUDING DISCUSSION AND IMPLICATIONS	255
8.1. Main findings and discussion.....	256
8.1.1. Green communities of practice	256
8.1.2. Boundary objects.....	260
8.1.3. Practices for facilitating learning for corporate greening.....	262
8.2. Contributions of the study.....	265
8.2.1. Theoretical contribution	266
8.2.2. Empirical contribution	268
8.2.3. Practical contribution	270
8.3. Limitations of the study.....	272
8.4. Future research.....	273
8.5. Conclusion	274
LIST OF REFERENCES.....	276
APPENDICES	314
Appendix-I: Human Research Ethics Committee (HREC) Approval Letter.....	314
Appendix-II: Interview Guide.....	315
Appendix-III: Consent Form.....	318
Appendix-IV: List of Participants.....	320
Appendix-V: The process for template analysis	322

LIST OF FIGURES

Figure 2.1: Components of learning in community of practice	75
Figure 2.2: Theoretical framework for the study	99
Figure 3.1. Number of deaths for every 100,000 people in 2012	104
Figure 3.2: Extracts from Constitution of Belarus	107
Figure 3.3: Industry structure in Belarus	111
Figure 3.4. The main enterprises of the chemical industry of the Republic of Belarus	115
Figure 3.5: Location of three chemical plants for this study (pictures: author).....	120
Figure 4.1: Hierarchical structure of Belarusian chemical industry	141
Figure 4.2: Research design for an instrumental multiple case study.....	144
Figure 4.3: Final themes of the study	156
Figure 4.4: Philosophical, social, political and practical dilemmas and their implications for research.....	159
Figure 6.1: Composition of community of practice ‘use of hazardous products’	164
Figure 6.2: Composition of community of practice ‘energy efficiency’	176
Figure 6.3. A garden designed by enthusiastic workers in Case C.....	186
Figure 7.1: A first-line manager (left) provides sensitisation with the technical operator (right) during a shift.....	219
Figure 7.2: Desk of awarded employees with Labour Glory Employees.....	225

LIST OF TABLES

Table 2.1: Summary of all theoretical perspectives which study individual level in sustainability, climate change, CSR in different contexts.	66
Table 3.1: Details on each chemical plant.....	116
Table 4.1: Philosophy of this thesis	126
Table 4.2: Overview of the methodologies of empirical studies using situated learning, (Author).....	130
Table 4.5: Research perspectives in case study methodology	133
Table 4.6: Profiles of Organisations.....	139
Table 4.7: Overview of qualitative methods	145
Table Appendix-V.1: Initial template	323
Table Appendix V.2: Final Template for this study	325
Table Appendix-V.3: Template analysis, categories and codes.	328

LIST OF DEFINITIONS

Community of practice is a 'set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice' (Lave & Wenger, 1991, p. 98).

Corporate greening: It refers to a process by which 'companies become more environmentally responsible in their activities' (Schaefer & Harvey, 1998, p. 109) or 'firms integrate environmental concerns into their decisions' (Banerjee, 2002, p. 117)

Boundaries are the tensions between competence and experience that causes the emerging collaboration, which impacts learning between different communities (Wenger, 2000, p. 233).

Boundary objects refer to 'the experience of a common language that allows people to communicate and negotiate meanings across boundaries' (Wenger, 2000, p. 236).

Employee engagement in corporate greening is the outcome of learning about corporate greening at work which results in a set of greening practices.

Facilitating learning for corporate greening is a set of practices for motivating and developing employees' environmental knowledge, skills, values and competencies necessary to perform their everyday 'green' practices in workplace settings.

First-line manager: This refers to a person who possesses a delegated authority to take decisions at the operational level, and some formal authority via higher-level managers (Hales, 2005).

Green business practices relate to the introduction or reform of existing policies, practices, products and/or processes to address key environmental issues, such as pollution, recycling, and resource minimisation (Shrivastava & Hart, 1992).

Green business practices (modern interpretation) are 'an organization's repertoire of established social practices and the sensitivities and dispositions they instil, and not so many pre-specified plans, goals or articulated "rules" and "routines", that give coherence and consistency to its actions when faced with environmental challenges' (Chia, 2017, p. 108).

Learning for corporate greening in this study is understood as a process in which employees use and extend their environmental knowledge, values, abilities and skills through their everyday practices and social interaction in workplace settings.

CHAPTER 1: INTRODUCTION

The aim of this chapter is to introduce this study. The chapter sets out the context for the problem of limited understanding of engaging employees and their learning in corporate greening, and the facilitation of such learning by low-tier managers. It explains that particular front-line managers play a greater role in the facilitation of engaging employees in corporate greening through collaboration and learning of 'green' practices than in the past. Therefore, there is a need to examine the practices of front-line managers used to facilitate the re-engagement and education of employees in corporate greening, which is the aim of this research. Further to this, it explains the gaps in the greening literature on front-line managers in general, and limited knowledge of practices used by these managers to facilitate learning for corporate greening in particular. It has also been suggested that context infuses all facets of workplace learning for corporate greening (Ellinger & Cseh, 2007); however, research in greening literature on socio-historical contextual influences in non-Western countries, i.e. transition economies, has been rather limited. Thus, how front-line managers in a post-Soviet context facilitate learning for corporate greening is part of the research question under inquiry in the thesis. The following will highlight the importance of the study in the post-Soviet context, seeking to increase our understanding of practical challenges of front-line managers as facilitators of learning for corporate greening in their organisations by taking a critical and contextualised approach to workplace learning. It further outlines the objectives which guide the research and explains the organisation of the study.

Accordingly, Section 1.1 below discusses the context of this research and its focus on corporate greening. Section 1.2 explicates the rationale for this research and the derived research question. Section 1.3 highlights the importance of the study, followed by Section 1.4, which outlines the objectives and theoretical framework guiding the execution of this study. Finally, Section 1.5 explains the organisation of the remaining chapters of this study.

1.1. Background to the research

This part provides a context for the problem for this study. It argues that there is a broader acceptance of corporate greening by large businesses in practice. However, there is still an issue with the engagement of employees in 'green' activities, and insecurity about how it can be facilitated. It gives details on the increased role of front-line managers in facilitating employee engagement in corporate greening through learning and collaboration, and explains why it is important to study this process.

'Corporate greening' mainly refers to a process whereby '*companies become more environmentally responsible in their activities*' (Schaefer & Harvey, 1998, p. 109) and '*integrate environmental concerns into their decisions*' (Banerjee, 2002, p. 117). A call for action for environmental protection for all actors, including large businesses, was made for the first time by the UN Conference on Environment and Development in Rio De Janeiro in 1992 (Karp & Gaulding, 1995). Since then, corporate greening has become popular among companies across the globe, as demonstrated in the increasing number of companies that formulate environmental strategy and have introduced Environmental Management Systems (EMS) (Marimon, Llach, & Bernardo, 2011). Although acceptance by the large businesses to go 'green' has increased, still, little progress in addressing global environmental challenges by businesses has been made (Allen et al, 2017; Banerjee, 2012; The Guardian, 2017; Wittneben et al., 2012).

As will be demonstrated in the literature review in Chapter 2, the progress of large businesses' efforts to implement corporate greening has been slow. This problem of transition is not only confounded to businesses; the slow state of the progress is also reflected in mainstream media. For example, in an article in The Guardian newspaper, d'Arjuzon (2012) argues that one of the reasons for the lack of progress on corporate greening by large businesses is that they have not yet acquired a deep understanding of how to do it and how it can be facilitated. In particular, the article in The Guardian emphasises the difficulty of businesses to transform an elaborate environmental strategy or EMS into a learning environment in which employees at all levels incorporate the strategic 'green' goals and behaviours into their every-day practices. Therefore, employee engagement in learning 'greening' practices is of increasing importance because employees are on the frontline of any business operation. The employees decide whether to recycle paper or not; they suggest a means of reducing carbon emissions, waste, water consumption or energy use or withdraw from the

activity. A large percentage (97%) of executives of companies surveyed by the UN Global Compact in 2011 believe that there are times when companies suffer from lack of employee engagement in corporate greening (Lacy et al., 2012). The report identified some reasons for the limited motivation behind 'green' employees' engagement: many employees are simply do not care, as they show a lack of emotional engagement and identification with the group (Farnsworth, Kleanthous, & Wenger-Trayner , 2016), yet are able to do certain 'green' activities when instructed or motivated by extrinsic reasons; other employees care, but do not find the time to change their routine or find it challenging to engage with the complex environmental issues. Therefore, the challenge for large companies in practice is to find ways to continuously re-engage employees in corporate greening, thus learning, by offering a range of different facilitation practices.

Reports from different consultancies suggest that large businesses use different practices to engage and motivate staff in corporate greening. For example, Intel engages their employees in environmental projects by participating in employee-led initiatives such as funding pencil boxes for local schools. Funds are collected for the recycling of plastic reels from Intel's production line (d'Arjuzon, 2012). Other companies such as the U.S. company SuMo Software Corporation and the Canadian WSP Global Inc. motivate their employees to engage in corporate greening by letting them share ideas and track personal performance on sustainability goals. Although formal facilitating practices, such as employee-led initiatives and employees' performance management, are usually organised by the Human Resources (HR) function, these face challenges of no proper communication with the employees or alignment across functional areas, which results in limited involvement in these initiatives across all levels (EY, 2013, p. 13).

Recent trends in organisations show that facilitating employee engagement in corporate greening by using informal practices, such as collaboration, communication and learning by low-tier managers, are becoming more important. According to the annual Sustainability in Facilities Management Report 2017 of the BIFM - the professional body for facilities management in the UK -, the importance of front-line managers in facilitating employee's participation in sustainability rose to 75% in 2017 (66% in 2016). Another report by the BIFM provides the reason for this increase, which lies in the differences between organisational levels in approaching environmental

knowledge. Whereas senior managers see a greater need for specialists and external help to meet the environmental challenges of their organisation, front-line managers rely on their expertise and their team to address the organisation's environmental challenges, which leads to greater opportunities for collaboration and learning (BIFM, 2015). Therefore, without effective facilitation learning for corporate greening by front-line managers, the corporate greening process is likely to continue to be slow and resistant to achieving progress in addressing global environmental challenges. Thus, there is a practical need to examine the facilitation practices of front-line managers used to re-engage employees in corporate greening and facilitate learning of corporate greening, which is the aim of this research.

1.2. Rationale for the research

Following a problem in the research on the importance of studying facilitation practices of front-line managers which contribute to increased employee engagement in corporate greening, this section explains the gaps in the greening literature on front-line managers' practices used for such facilitation. Learning for corporate greening in this study is understood as a process in which employees extend their environmental knowledge, values, abilities and skills in their everyday green business practices in workplace settings. Therefore, 'employee engagement in corporate greening' in this study is seen as the outcome of the learning process which results in a set of 'green' business practices. It has also been suggested that there is a limited knowledge on contextual influences of learning for corporate greening. While the majority of the literature studies diverse organisational motivation influences which lead to different sets of greening practices in the Western context, the research on socio-historical contextual influences, such as changes from the Soviet to post-Soviet stage of a country, has been rather limited. Therefore, the research addresses the gap in studying how front-line managers in a post-Soviet context facilitate learning for corporate greening in their organisation, which is a research question of this study.

Research on corporate greening highlights the importance of organisational environmental responsibility as a significant element of corporate activity aiming at developing green business practices. The literature provides evidence that organisations have introduced or reformed policies, practices, products and/or processes to address key environmental issues, such as pollution, recycling, and resource minimisation (Shrivastava & Hart, 1992). Corporate greening happens by

introducing various corporate activities, including strategic actions, for: waste reduction as sources of inefficiency; improving resource productivity and innovation (Porter & Kramer, 2006; Porter & Van der Linder, 1995); changes in environmental management (EM) and the introduction of EMS (Prakash, 2000; Räsänen et al., 1994); the process of organisational change through technology and innovation (Freeman & Soete, 1997; Ramus & Steger, 2000); and changes in ethical practices towards the environment (Crane, 2000). The emerging stream of literature explains that corporate greening occurs through engaging employees in learning processes toward corporate greening (Dalal et al., 2009; Perez et al., 2009; Strauss et al., 2017; Onkila, 2015). In this context, green business practices are *'an organization's repertoire of established social practices and the sensitivities and dispositions they instil, and not so much pre-specified plans, goals or articulated 'rules' and 'routines', that gives coherence and consistency to its actions when faced with environmental challenges'* (Chia, 2017, p. 108). This thesis thus follows Chai's (2017) definition of green business practices. This definition allows the researcher to select relevant greening literature which looks at different approaches that enable an organisation to engage employees in corporate greening. Furthermore, it helps to narrow down the focus of the study by selecting the literature to study processes in which managers facilitate learning in their organisations in regarding the adoption of new green business practices. Below, two gaps in the literature are briefly explained, and will be elaborated upon in greater detail in Chapter 2.

The first gap in the literature relates to the limited knowledge about the role of front-line managers in facilitating learning for corporate greening. While the majority of the greening literature focuses on leaders at the senior level, and specialised departments such as HR and EM, to engage or re-engage employees in 'green' practices through learning and the development process, there is limited knowledge of front-line managers in this process. The literature highlights how employees feel engaged in environmental matters if: they feel less pressure and are empowered (Cantor et al., 2012); they can take their own responsibility and ownership for their environmental projects (Daily & Huang, 2001); and they are valued through rewards (Govindarajulu & Daily, 2004). There are two main streams of literature which explain how employees can be motivated to participate in green business practices. One stream focuses on the crucial role of leaders/senior managers' commitment and support to motivating staff to undertake changes and promote initiatives (Andersson et al., 2013; Boiral et al.,

2009; Branzei et al., 2004; Henriques & Sadosky, 1999; Marimon et al., 2011; Robertson & Barling, 2013). The second stream focuses on the crucial role of specialised departments, such as HR and EM. The literature on Green Human Resource Management (GHRM) argues that the HR function is one of the internal facilitators in an organisation helping employees to take up green initiatives through learning and development (L&D) measures (Jabbour & Jabbour, 2016; Jackson & Seo, 2010; Mandip, 2012). These measures include environmental training, 'green' employment, and creating pro-environmental culture and values. Also, environmental managers, as experts for environmental knowledge, facilitate the generation of intra-organisational environmental learning (Rothenberg, 2003). Despite the growing literature on formal practices promoting environmental learning and engagement at work, recent studies confirm a key role for low-tier managers in encouraging employees to engage in pro-environmental action at work (Paillé et al., 2016; Paillé et al., 2017). The low-tier managers include middle and front-line managers. Whereas middle managers are one level below senior-management, the term front-line manager refers to any manager two levels or more below senior-management (Hales, 2005; Kilroy & Dundon, 2015). Middle-managers have been identified in greening literature as ones who play an essential role in environmental strategy-making within organisations, particularly when it comes to the implementation phase (Sharma & Vredenburg, 1998). However, they have limited contact with the staff. Only a small body of greening literature has pointed out the crucial role of first-line managers for corporate greening who have supervisory responsibilities, and who act as facilitators for empowering employees and creating an organisational culture for more engagement in the process (Jamali, 2006; Muralidharan, 2016). Unfortunately, front-line managers have been largely ignored in the 'greening' literature (Purcell & Hutchinson, 2007). This study addresses the limited knowledge of how front-line managers facilitate learning for corporate greening and help learners in transforming environmental strategy into organisational green business practices.

The second gap focuses on limited contextualising of workplace learning in the greening literature. While the majority of the literature studies diverse organisational motivation, which leads to different sets of greening practices in the Western context,

the research on socio-historical¹ contextual influences, such as changes from the Soviet to post-Soviet stage of a country, has been rather limited.

Greening research has identified different external and internal pressures on companies' learning environments which lead to different sets of greening practices (Bansal & Roth, 2000). Furthermore, the literature acknowledges that green business practices are not universal, and rather depend on '*business penetration by the 'green' ideas in various countries*' (Čekanavičius et al., 2014, p. 75). The literature has found three main motivations for why organisations go 'green' and which affect their set of green business practices. One stream explains the companies' motivation through gaining competitive advantage in the market (Albertini, 2013; Ambec et al., 2013; Eichholtz et al., 2016; Porter & Van der Linder, 1995). These studies highlight the relationship between the environmental performance and financial performance which then determines the introduction of new green business practices with a focus on commercial benefits. Another motivational factor is demonstrating compliance with environmental legislation, which is significantly influenced by regional differences and industry sector (Banarjee, 2002; Fineman & Clarke, 1996; González-Benito & González-Benito, 2006; Gadenne et al., 2009). The research has found that firms in high-environmental impact industries, like chemicals and industrial manufacturing, have a greater environmental strategy focus due to highly regulated legislation (Fineman & Clarke, 1996; González-Benito & González-Benito, 2006). Finally, companies' internal motivations of staff play a vital role in determining the quality and scope of green business activities. The internal pressure for greening can be initiated by any manager inside an organisation because they decide what 'green' practices can be implemented, despite the different external pressures (Brown et al., 2005; Treviño & Weaver, 2003). Thus, decisions may depend on the personal values and attitudes of the managers (Prakash, 2000); individual differences in knowledge and information about environmental issues (Post et al., 2011); and employees' task and role requirements (Ones & Dilchert, 2012). Whereas literature has advanced our understanding of major motivations for corporate greening relevant to learning processes inside companies, the research has been conducted mainly in the Western context.

¹ Webster Dictionary defines, 'socio-historical' as 'relating to, or involving social history or a combination of social and historical factors' (Source: <https://www.merriam-webster.com/dictionary/sociohistorical>)

In contrast, greening literature in countries in transition illustrates that learning environment may be different. Following the collapse of the Soviet Union in 1991, a number of countries became independent, which opened up the development of new market-based approaches which, in turn, enhanced the development of corporate greening. These included, as will be specifically discussed in Chapter 2, market-based instruments such as taxes, fees and charges, as well as the decentralisation of institutions concerned with environmental protection (Kluvánková-Oravská et al., 2012). At the same time, most post-Soviet countries faced common problems in finding the balance between a wish for commercialisation of environmental projects and their difficult economic situation. The problems are particularly visible in the seventeen low-speed transition countries: Armenia, Azerbaijan, Georgia, Belarus, Moldova, Ukraine, the Russian Federation, Kazakhstan, the Kyrgyz Republic, Mongolia, Tajikistan, Turkmenistan, Uzbekistan, Egypt, Jordan, Morocco and Tunisia (EBRD, 2017)². In this context, the role of socio-historical influences such as practices inherited from the Soviet Union play an important role (Crotty, 2016). Thus, current greening literature does not sufficiently explain what managers in the post-Soviet context are doing differently from their colleagues in the Anglo-Saxon context to better engage their employees in environmental practices. Therefore, this study addresses the gap in the limited contextualising learning for corporate greening at workplace.

Therefore, the following research question is derived from these two gaps in the literature: '*How do front-line managers in a post-Soviet context facilitate environmental learning in their organisations?*': this will be the focus of the research inquiry.

1.3. Importance of this study

The importance of this study lies in the fact that it contributes to the growing literature on the intersection between corporate greening and HRM by offering a critical and contextualised account of different management practices used by low-level managers, i.e. front-line managers, to facilitate learning for corporate greening regarding greater engagement of employees in green business practices.

² The European Bank for Reconstruction and Development (EBRD) distinguishes transition economies between fast speed and low speed economies. The *fast moving transition economies* are Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic and Slovenia, Albania, Bosnia and Herzegovina, Bulgaria, Cyprus, FYR Macedonia, Greece, Kosovo, Montenegro, Romania and Serbia and Turkey. The *low speed transition economies* are Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine and Russia, Kazakhstan, Kyrgyz Republic, Mongolia, Tajikistan, Turkmenistan, Uzbekistan, Egypt, Jordan, Morocco and Tunisia.

First, the study illustrates how front-line managers in Belarus use facilitation (motivational) practices to address challenges from societal, legal and market-related changes which provide them with opportunities for facilitating learning for corporate greening in their organisations. In this way, the research is problematising the growing literature in GHRM practices as the only one effective approach to facilitate learning for corporate greening. The research on GHRM practices illustrates that businesses use environmental training, rewards and recognition, employee empowerment and organisational culture in order to facilitate learning for corporate greening. However, academic debates are dominated by an occupational psychology perspective which views learning as an individual process. Despite the fact that the literature has developed significant insights into the antecedents for individual learning at work by emphasising the importance of organisational measures and environmental strategy (e.g. Fernández, et. al., 2003; Norton, et.al. 2017), recent literature on HRM practices suggest that context is important in making sense of what is happening at workplaces in order to provide relevant solutions (Cooke, 2018). Cooke (2018) and Budhwar et al. (2018) call for more qualitative studies to address the imbalance in HRM research. Therefore, this research is problematising the traditional type of cognitive learning used in GHRM practices research by utilising situated learning theory (Lave & Wenger, 1991). This research assumes that learning for corporate greening is socially constructed and contextually embedded (Lave & Wenger, 1991; Wenger, 1998). By taking a constructivist's view on learning, this study focuses on understanding the facilitation of learning for corporate greening, in particular interactions between facilitator and learners, which is influenced by a number of socio-historical considerations.

Second, the insights of this study extend the knowledge of the front-line employees' perception of the interactions surrounding learning about greening, and the learning environment in their organisation. This is possible by following a critically-oriented approach to studying HRM practices for employees' motivation in corporate greening (Jenkins & Delbridge, 2013; Keegan & Boselie, 2006). This suggests that the majority of HRM literature take the unitarist perspective to the design of HRM interventions that assumes that staff at all levels share the same objectives and work together harmoniously. However, it ignores the view of low-level staff who may face conflicting objectives or agendas across the organisation. Ignoring these challenges faced by low-tier managers in the practice does not necessarily provide deep understanding of their

challenges inherent in the existing employment relationship (Delbridge & Keenoy, 2010; Jenkins & Delbridge, 2013). By studying the front-line managers in a post-Soviet context, the study seeks to understand the perceptions of the front-line managers about boundaries that prevent engagement of the actors in green business practices. Therefore, the importance of the study is to increase understanding of the practical challenges of front-line managers as facilitators of learning for corporate greening in their organisations who bridge the HRM system, bringing them together to encourage more engagement of employees in green business practices. Knowing more about these challenges may allow HR practitioners (and researchers) to better assess an organisation's settings for environmental workplace learning, as well as design appropriate developmental HR interventions to help front-line managers build their capabilities as facilitators (Ellinger & Cseh, 2007). Without information on these issues, the organisational GHRM policy fails to design a holistic approach to employees' engagement in corporate greening.

1.4. Aim and objectives of the study

This section gives details on the aim and objectives of the study, and presents the expected outcomes.

The aim of this study is to explore how front-line managers in a post-Soviet context facilitate learning for corporate greening in their organisations. The research question of the study is:

How do front-line managers in a post-Soviet context facilitate learning for corporate greening in their organisations?

Whilst a research question indicates the topic or issue of the study, research objectives operationalise the question (Rojon & Saunders, 2012). Building on the overarching research question, a qualitative case study will focus intensively on the experiences of the front-line managers of three government-controlled chemical plants in Belarus. Belarus is one of the seventeen low-speed transition economies selected for this study because it is the most representative example of a Soviet-type economy (Rees & Miazhevich, 2009). After the collapse of the Soviet Union in 1991, Belarus transitioned from a planned economy to a market economy despite retaining the main characteristics of the Soviet Union: (1) a Soviet-type socially-oriented constitution; (2) a state-led planning system centred in Minsk, instead of Moscow; and (3) Soviet types of social

networks (Lowenhardt, 2005). These aspects of Sovietisation contradicted the new societal, market and legal changes towards environmental issues in Belarus. This study helps to understand the facilitation practices used by front-line managers in the learning environment shaped by the unique socio-historical context of Belarus.

The study looks at the 'green' communities of practice relevant to studying a learning environment, whilst capturing the places and impulses for learning about corporate greening between participants and non-participants. Thus, this thesis uses two appropriate theories under situated learning: '*communities of practice*' – selected as a means of describing the learning environment by identifying 'green' communities of practice and boundaries in understanding regarding 'greening' across boundaries (i.e. ambiguity and tensions across differences in values, agendas and perceptions); and '*boundary objects*' – ways in which actors interpret ambiguous and complex concepts such as 'greening' and 'environmental responsibility' which was not available during Soviet times, and how they interact with the participants and non-participants of the 'green' communities. The use of these theoretical concepts helped to provide valuable insights into facilitation practices used by front-line managers to develop and maintain learning for corporate greening in their post-Soviet organisations that are not so easily seen in a Western context.

In this regard, the following objectives are set:

- 1) identify 'green' communities of practice in the three case study companies in Belarus and how learning occurs in them;
- 2) explore how learning for corporate greening takes place around the boundary objects in the three companies in Belarus;
- 3) examine the practices through which Belarussian front-line managers seek to facilitate learning for corporate greening in their 'green' communities.

In this thesis, it has been argued that whereas originally the communities of practice were applicable mainly in the horizontal organisation of work (Wenger, 2010), this study demonstrates that the front-line managers facilitate mutual long-term relationships among participants in their traditionally hierarchical and government-controlled organisations. The front-line managers repurpose former Soviet practices, which were previously not meant to have an environmental protection focus, or adapt

new practices to break down the hierarchical way of managing environmental responsibility, and to create a participative climate for non-participants.

1.5. Outline of the thesis

The structure of the thesis is as follows. The present chapter, Chapter 1, introduces the study, including the rationale informing the conduct of the research, along with the aim and objectives guiding the investigation.

Chapter 2 provides a comprehensive review of the relevant literature, from which the gaps and weaknesses addressed in this study are identified. It identifies a gap in the literature concerning front-line management and their role in facilitating learning for corporate greening in their organisations. This chapter also presents the theoretical underpinning for this thesis on communities of practice and boundary objects, and their relationship to corporate greening research.

Chapter 3 explains the socio-historical background of Belarus and the studied chemical industry. The chapter presents evidence on how these could be used to explain the learning environment for corporate greening in Belarussian chemical plants, which are the focus of the investigation. From this discussion, the research question is fine-tuned.

Chapter 4 is a discussion of the epistemology, ontology, methodology, and methods of this research project. It begins by discussing the basic epistemological and ontological assumptions in business research as outlined by Bryman and Bell (2015). It critically reviews the methodologies used to research practices of Belarussian front-line managers for facilitating learning for corporate greening. It outlines that the methodology used in this thesis is a combination of semi-structured interviews, meeting observations and photographs in three chemical plants in Belarus. The method of analysing this data is template analysis (King, 2004). The chapter ends with an explanation of how template analysis is used to analyse available data for first-line managers.

Chapter 5 presents the findings relating to the green communities of practice in the three case study organisations as described by the research participants. This chapter shows that although communities of practice normally would not fit easily within traditional hierarchical organisation (Wenger, 2010), the findings of this study provide evidence about four 'green' communities which are maintained through practices

inherited from the Soviet Union ('use of hazardous substances', 'energy efficiency', 'environmental innovation' and 'greening and cleaning'). The findings of this chapter reveal 'corporate greening' as a boundary maker in the learning environment, and produces three possible boundaries across values, agendas and priorities alignment.

Chapter 6 presents the findings for the second research question of the thesis, and seeks to highlight how front-line managers in Belarus perceive interactions between members of 'green' communities across boundaries. The results of the study show that Belarusian front-line managers employ three boundary objects - 'homeland', 'law' and 'market' – constructed by post-Soviet context socio-historical influences that enable them to set the different interpretations of actors about 'greening' which unpack the causes for non-participation of some actors in 'green' activities. These interpretations span from engagement with green activities to employees' disengagement with the environmental issues as such there is significant interest in preserving traditional identity of a citizen. This relates to the connected and committed nature of citizenship to serve the state; where culture and identity are seen as pivotal to the process of 'nation-building'. However, the traditional view does not represent an intrinsic environmental commitment, in the sense of priority, but includes interpretations of the boundary 'law' as a commitment to the State. Judgments about the competence of less experienced people; and the extent to which chemical plants are perceived as, in fact, less committed to environmental strategy in the long term as they are to short-term economic goals. It explains that these boundary objects create both a potential for engagement in 'green' communities of practice, as well as new impulses for facilitating learning and practices to 'correct' de-motivation behind peripheral participation.

Chapter 7 presents the findings for the third objective of the study, which aimed to identify practices used by the front-line managers in Belarus to manage the boundaries and facilitate environment learning in their organisations. The chapter found that the Belarussian front-line managers adopt different identities and practices to facilitate the flow of environmental information and knowledge between participants and non-participants in the landscape of four 'green' communities of practice. In this way, the front-line managers act as facilitators based on the assumption that the differences (boundaries) can be facilitated by making different perspectives explicit, and adjusting values and agendas to the new circumstances. The study identified three sets of practices that facilitate learning for corporate greening by generating three modes of

belonging (engagement, imagination and alignment), including: (1) boundary practices to reward participation in greening by engaging with other departments, such as HR and EM departments (sensitisation and 'moral encouragement' practices); (2) boundary practices for constructing an image of themselves as educators and making environmental responsibility one of the organisation's mission (participating in patriotic events and mentoring); and (3) boundary practices to reduce conflicts between actors inside and outside the organisation by aligning different perspectives through creating collaboration between the country's intersection of needs. Through applying facilitation practices for engagement, imagining and aligning (Wenger, 2000), front-line managers help new members to identify with the 'green' communities, and transform their communities towards more 'green' ways of working.

Chapter 8 summarises the main findings of the thesis and outlines the academic, empirical and practical contributions of this thesis. It also discusses the limitations of the research, areas of future research, and practical implications of the findings.

CHAPTER 2: LITERATURE REVIEW

This chapter critically reviews existing literature on corporate greening in relation to the research question of this study: how do front-line managers in a post-Soviet context facilitate learning for corporate greening in their organisations? In the process, the chapter has two purposes: first, to identify gaps in the literature which inform the research agenda and, second, select an appropriate theoretical lens for this study. Thus, this literature review is approached in three stages. First, the wider body of greening literature on large companies is analysed, and the literature on environmental motivations in different contexts is critically reviewed. The literature review highlights a shift in studying green business practices from a strategic and intra-organisational change perspective to a learning perspective. The emerging stream of literature explains that learning for corporate greening occurs through engaging employees in creating more 'green' ways of working. However, there is limited knowledge on facilitation practices for learning for corporate greening in a non-Western context, i.e. post-Soviet contexts, which shows that businesses are confronted with different socio-historical influences. The second step investigated research on facilitating learning for corporate greening. This review shows that the majority of the greening literature focuses on organisational practices used by leaders at the senior level, and specialised departments such as Human Resources (HR) and Environmental Management (EM), to engage or re-engage employees in 'green' practices through learning and development practices. There is limited information about low-level managers, i.e. front-line managers, in this process. A review of the research in this 'unresearched' context is given and, from this, the research questions of this thesis are derived. Considering the identified gaps in the literature, the final stage of the literature review focused on identifying theoretical lenses. Based on the review of the 'greening' learning literature, this research uses the facilitator's learning perspective, which has received very little attention by the 'greening' scholars so far. The section reviews different approaches under learning perspectives, and selects situated learning as an important theoretical angle to receive valuable insights about the practices of front-line managers to facilitate learning for corporate greening in their organisations in a post-Soviet context.

The remainder of this chapter is structured in three sections. Section 2.1. presents a synthesis of literature on corporate greening of large companies, together with the literature on environmental motivations in different contexts. These are critically reviewed. Section 2.2. reviews literature on facilitation practices which enable the large organisations to engage employees in being environmentally responsible, including a summary of the main gaps. Section 2.3. presents the theoretical underpinnings employed to study the research question. Finally, section 2.4. summarises the main ideas of the chapter.

2.1. Corporate Greening

This first section presents a synthesis of literature on different green business practices of large companies, and helps to situate the research question of the present thesis within the wider literature on corporate greening. Most of this literature explores green business practices that are used at an organisational level in a Western context, with less attention being paid to the way in which greening is shaped by employees engaging in making greening happen in organisations. There is limited knowledge on learning for corporate greening in a non-Western context, or the role of learning facilitators, such as front-line managers. This is why this research addresses this question. The section has four parts. First, a short introduction to corporate greening as an umbrella concept is given. Second, the motivations and challenges of large companies to go 'green' are discussed. Finally, the limited existent literature on corporate greening in a post-Soviet context is reviewed, with particular attention given to the role of front-line managers in the facilitation of corporate greening. Finally, the section four provides a short summary of this section.

2.1.1. What is '*corporate greening*'?

This sub-section presents corporate greening as an umbrella concept, and helps to situate it in current research. It shows that most of the literature is situated at the organisational level, demonstrating five major streams of 'greening' literature that underlie associated implementation of green business practices. Green business practices result from: (a) strategic actions, (b) the introduction of environmental management systems (EMS), (c) improving ethical conduct in the organisation, (d) solving tensions and conflicts around environmental responsibility, and (e) facilitating learning processes for corporate greening. The latter stream offers a critique of existing corporate greening literature for providing limited insights about the way in which

greening is shaped by employees. The literature does not explain how learning for corporate greening is facilitated by other key organisational actors such as front-line managers. This research seeks to address this gap by investigating learning about greening in organisations, and the facilitation of such learning by front-line managers.

The Oxford English Dictionary (2000) defines the word 'greening' as '*the process of making or becoming more aware of environmental considerations*' (Oxford Dictionary, 2000). The academic literature views '*corporate greening*' as an umbrella concept which encompasses a number of other similar concepts, and has been expressed in a variety of terms over recent years. These include: '*organisational greening*' (Fineman, 1997; Shrivastava, 1994); '*environmental protection*' (Haas, Keohane, & Levy, 1993); '*corporate environmentalism*' (Banerjee, 2001); '*ecological modernisation*' (Spaargaren & Mol, 1992); '*environmental responsibility*' (Bansal & Roth, 2000); '*environmental management*' (Klassen & McLaughlin, 1996); '*environmental operational management*' (Gupta & Sharma, 1996); '*corporate environmental management*' (Albertini, 2013); '*ecological sustainability*' (Barbier, 1987); '*environmental sustainability*' (Goodland, 1995); and '*business ethics towards the environment*' (Crane & Matten, 2016). There is also a wide assumption that environmental responsibility is an integral element of Corporate Social Responsibility (CSR) (Carroll, 2000) and '*corporate sustainability*' (Bansal, 2005), which is represented in three main dimensions – social, environmental and economic (Baughn & McIntosh, 2007). All these terms put business corporations as the central actors in the reduction of environmental harm and have more or less the same meaning, i.e. introducing responsible, green business practices.

To help to situate the research questions of the current thesis within the wider literature on corporate greening, several streams of this literature which present different approaches to greening are introduced briefly in the following paragraphs: (1) research that considers greening as part of corporate strategy; (2) research that looks at the operationalisation of greening, particularly through EMS; (3) research that sees greening as a morally responsible practice and promotes the introduction of ethical conduct in the organisation; (4) research that looks at the tensions for corporate greening as a source for the development of corporate greening practices; and (5) research that considers learning processes for successful implementation of green

business practices, which have implications for management practices to motivate and engage employees in corporate greening.

The first stream of research considers the strategic dimension of greening. Here, greening is seen as a path of strategic action towards reducing sources of inefficiency, improving resource productivity and increasing innovation (Bansal, 2005; Fraj, et.al., 2015; Sharma & Vredenburg, 1998). This kind of research sees environmental performance as critical for organisational competitiveness at strategic and operational levels (Porter & Van der Linder, 1995; Porter & Kramer, 2006). The scholars of the stream of research advocate a strict cost-benefit (win-win) rationale behind green business practices. For example, Hart (1995) empirically examined firms' strategic actions and found that green business practices have paybacks in the reduction of their environmental footprints through two primary means; '(a) control: emissions and effluents are trapped, stored, treated, and disposed of using pollution-control equipment or (b) prevention: emissions and effluents are reduced, changed, or prevented through better housekeeping, material substitution, recycling, or process innovation' (p.992). Similar actions, such as pollution prevention, product stewardship, and sustainable development, are seen as key strategic capabilities by other empirical studies in the UK (Hart & Dowell, 2010). From these studies it is possible to see that corporate greening is viewed as a deliberate process which is formulated through an environmental strategy with the aim of reducing the costs of regulatory compliance, and achieving waste disposal, energy and material savings, etc.

Similar links between the social and environmental performance of firms and a strategic concern with reduced costs or increased competitive advantage can be found in related literatures and have been criticised for their instrumental approach. For example, Carroll & Shabana (2010) point out that the view on responsible business as a route to business success has been dominant in the CSR literature since at least the 1970s and can be traced back to Friedman's (1970) pronouncement that the social responsibility of business is to make a profit. In his article Friedman emphasises that every enterprise comprises from individuals and the social responsibilities of individuals such as corporate executives for their employees to pay their wages as well as act in interest of their stakeholders because they spend their money (Friedman, 1970). Later the literature points out that 'making profit' may then include 'green' product innovation to generate additional profit and gains new customers or resource

efficiency to reduce operational costs (Porter & Kramer, 2006; Porter & Van der Linder, 1995). However, a strategic approach that aims to link environmental performance to business success has also been problematised, partly because it is argued to ignore the trade-offs and tensions that a pursuit of environmental sustainability is bound to raise in organisations (Banerjee, 2001; Hahn et al., 2015). The findings of Hahn et al. (2015) distinguish between several types of such tensions: between personal and organisational agendas; between corporate short-term versus long-term orientation (financial objective versus long-term investment); isomorphism versus structural and technological change (demands for fundamentally-changed products and business models); and between the efficiency of organisations and resilience of socioeconomic systems. This suggests that several aspects of the power relations between stakeholders in taking 'green' ideas forward can produce delays in implementation of strategic plans. Finally, even business ethics itself has faced critique for being co-opted in the service of business (Jones, Parker, & Ten Bos, 2005).

Furthermore, the research suggests that businesses do not always have a 'commercial' rationale for introducing green business practices strategically. Many companies adopt the environmental strategy and 'green' activities voluntarily which go beyond legal requirements (Aragon-Correa & Sharma, 2003; Vidal-Salazar et al., 2012). Other companies consider corporate greening as a desirable or even pro-active development path of an organisation, moving from business practices which harm the environment to a more environmentally friendly type of approach (Berry & Rondinelli, 1998; Hart & Ahuja, 1996). There are, however, two main critique points of this stream of literature. First, the strategic actions of organisations are perceived as the normative or instrumental nature of environmental responsibility, which ignores the views of the employees (Halme, Roome, & Dobers, 2009; Wong & Sharp, 2009). Secondly, the studies do not consider different economic and institutional arrangements found in non-Western contexts, considering mainly the market-based mechanisms for developing green business practices which are hardly applicable for non-Western countries. Regarding this, a wider literature review is conducted on the motivations of organisations which shape the degree to which companies adopt green business practices. This is vital in order to understand the differences in reactions of large organisations, and will be carried out later in this chapter (section 2.1.2.).

A second stream of research, which considers corporate greening from an operational perspective, tends to focus on the implementation of EMS (Prakash, 2000; Räsänen, Meriläinen, & Lovio, 1994), and on organisational change through technology and innovation (Freeman & Soete, 1997; Ramus & Steger, 2000). Combining these two areas (EMS and organisational change) literature defines EMS as a framework for integrating 'green' corporate policies, programs, and practices (Morrow & Rondinelli, 2002). Thus, corporate greening is viewed by the scholars of this stream as a set of systematic activities that regulate input-output with the minimisation of pollution and waste (Goodland, 1995, p. 10). Historically, EMS has been driven by command and control regulations stemming from broad principles introduced at international conventions, which have become ratified by countries (Stevens et al., 2012). There are several 'green' instruments used for EMS, for example ISO standards, such as ISO 9000 and ISO 14000, and audit schemes. The literature discusses the most commonly used EMS instruments by businesses in the practices, which are the BS EN ISO 14001:2004 (ISO 14001) and the Environmental Management and Audit Scheme (EMAS) (Delmas & Montiel, 2008; Hillary, 2004; Iraldo et al., 2009). Many corporations have designed, certified, and implemented EMS under ISO 14001 because it provides a standard approach for managing a corporation's environmental footprint of the operations, which are often internationally applied (Morrow & Rondinelli, 2002). According to Morrow & Rondinelli (2002) the benefits of implementing EMS instruments includes strengthen a firm's environmental policy, identify environmental aspects of its operations, define environmental objectives and targets, implement a program to attain environmental performance goals, monitor and measure effectiveness, correct deficiencies and problems, and review its management systems to promote continuous improvement. Similar findings are demonstrated in other countries, such as India (Sangle, 2010), South Africa (Kehbila, Ertel, & Brent, 2010). Therefore, EMS is a helpful means of promoting corporate greening through reducing greenhouse gas emissions and wastes, along with energy reuse and energy saving (Christmann, 2004; Delmas & Blass, 2010; King & Lenox, 2001). Other studies suggest that EMS can be criticised for being inflexible and not cost-effective (Hui et al., 2001), as well as being lacking when dealing with the complexities of the emissions of multiple pollutants, which cannot be managed through small continuous improvement and require the wider engagement of different actors (Ziegler & Nogareda, 2009). Again, the main criticism of the problematic assumption of the prescriptive and normative

'managerialist' approach of EMS (Johns, 2006; Rousseau & Fried, 2001) is that it neglects the challenges of employees to balance creativity to solve complex environmental issues and standardisation (Shalley & Gilson, 2017). These challenges may affect an employee's job satisfaction and their engagement in corporate greening (Spanjol et al., 2015).

A third stream of literature focuses on the moral responsibility practices which help an organisation to reduce their environmental impact through the implementation of a set of ethical conducts and principles. This stream of literature draws attention to the expansion of green business practices, in particular by large corporations, and the ethical aspects related to these practices, in response to a rapid increase in accountability pressure from different stakeholders (Joyner & Payne, 2002; Kolk, 2008). These green business practices include the integration of ethical principles in managerial decision-making and involve environmental aspects in codes of business conduct (Valentine & Fleischman, 2008). The original idea on ethical principles goes back to earlier work on the moral responsibility of businesses. For example, Shrivastava (1994) argues that organisations which interact with nature have certain moral responsibilities towards the natural environment, and need to develop certain moral practices which will help employees to respect the environment. Fineman (1997) also considers environmental concerns in the light of the moral responsibility of managers and their every-day practices. He views 'greening' as a process of *'green corporate change'* (p.37), in which 'greening' is socially constructed by the experiential realities of the actors. Based on interviews with a cross-functional group of 37 top and middle managers in six major automotive-manufacturing companies in the UK, Fineman (1997) provides evidence that managers view the natural environment as a moral concern which requires everybody's attention. The study concludes that 'greening' is not a normative process of change, but is rather constructed by the personal and social meanings situated in managers' everyday working realities. Further, there is evidence that ethical business practices increase the loyalty of employees through engagement in corporate greening (Crespo & del Bosque, 2005) and job satisfaction because the 'ethical' organisation is more valued (Valentine & Fleischman, 2008). However, recent research suggests that concerning ethics, green organisational practices are often based on different ethical motivations to environmental responsibility, such as concern for the short-term financial interests of the business reputational, responsible and collaborative motivations (Schaltegger &

Burritt, 2018). Schaltegger and Burritt (2018) argue that although corporate managers are concerned about the environment, as well as with the economic success of the company in the long term, different ethical motivations are behind the design and implementation of green business practices by managers.

A fourth stream of research critically considers the challenges to corporate greening and the role of employees, in particular leaders and senior managers, in addressing the reduction of the environmental impact of their businesses. The scholars of this stream view corporate greening as a process of understanding and improving green business practices by considering the multiple tensions which are faced by organisations and business leaders (Gao & Bansal, 2013; Hahn et al., 2015; Van der Byl & Slawinski, 2015). Hahn et al. (2015) distinguish between tensions which occur between: personal and organisational agendas; corporate short-term versus long-term orientation (financial objective versus long-term investment); isomorphism versus structural and technological change (demands for fundamentally changed products and business model); and the efficiency of organisations and resilience of socioeconomic systems. The scholars of this stream argue that managing the tensions between different departments and agendas requires managers to, at the same time, address diverging but interconnected environmental issues (Bansal, 2003; Gladwin et al., 1995; Maon et al., 2008). As a consequence, firms that integrate environmental sustainability in their business face intertemporal choice problems which become complex and uncertain in solving and planning, but also in the wider context within which corporate greening occurs (Crane, 2000; Banerjee, 2001; Bansal, 2003; Bansal & Clelland, 2004; Preuss, 2005). Although the literature of this stream improves our understanding of the nature of tensions in environmental responsibility by acknowledging that managers manage such tensions rather than dismiss them, providing a perspective to open up promising avenues for future research, the stream has just recently emerged, and the majority of papers are on a conceptual level. This stream of 'greening' literature fits into a more general discussion regarding organisational ambidexterity, which specifically investigates capabilities in their alignment and adaptation for sustainability through paradoxical or conflicting corporate activities (Maletič et al., 2014; Schad, et al., 2016). The literature of this stream suggest that the existence of organisational paradoxes, contradictions, and conflicts are crucial for corporate responsibility because these enable businesses to simultaneously pursue both instrumental and moral social initiatives (Hahn, Pinkse, Preuss, & Figge, 2016),

which then enable ambidexterity learning (Kang & Snell, 2009). A recent special issue of the Journal of Business Ethics (JBE) in 2018 on corporate sustainability and managing paradox explored such phenomena. However, most of this work remains conceptual (Hahn, Figge, Pinkse, & Preuss, 2018). This dissertation has the potential to contribute empirical findings to the emerging conversation on the management of tensions and ambidexterity concerning corporate sustainability.

Finally, research considers learning for corporate greening as a key for successful implementation of corporate greening, which has implications for formal and informal management practices to motivate and engage employees in more 'green' ways of working. Learning for corporate greening was introduced by Banerjee (1998) for the first time in response to observed differences among companies in implementing corporate greening³. Banerjee (1998) explains the difference not only by size and type of industry, but by differences in learning processes, for 'greening' within organisations. Thus, Banerjee defines environmental learning as '*a process by which the organisations learn to integrate the environmental issues in their business activities*' (Banerjee, 1998, p. 150). This study made an important contribution to understanding 'learning for corporate greening'. First, it shows the importance of knowledge exchange in the learning process, which supports inter-organisational learning (in contrast to traditional one-way learner-instructor learning in environmental training). Secondly, the study suggests that changes in the external environment have an effect on the degree to which environmental learning is designed by the employees. These main findings had an impact on the further research into learning for corporate greening. Building on Banerjee's research, later developments in the literature suggest that learning for corporate greening is defined not only as knowledge of environmental issues and the ability of the employees to incorporate it into their organisation's operation, but also the development of employees' values through the development of their skills and abilities necessary for learning new 'green' practices or even 'green' jobs (e.g. environmental manager). Several streams in learning for corporate greening are identified: (1) the development of personal values which influence individual learning, and their actions regarding environmental responsibility (Boiral, et. al., 2014; Dalal et al., 2009; Perez et

³ In his study, Banerjee used organisational learning theory to study two case studies. Whereas one organisation with more 'green' practices used a double-loop learning process, the other organisation, with less developed 'green' practices, used mainly a single-loop learning process. The results of the study suggest that the process of double-loop learning is particularly important for environmentally-friendly companies because they have a long-term focus which helps the organisation to anticipate changes in legislation, encourage experimentation and risk-taking, as well as integrate different perspectives. The study also identified that a double-loop learning organisation uses more extensive environmental training than the organisation with single-loop learning.

al., 2017; Onkila, 2015); (2) awareness-raising and knowledge development necessary for better understanding of the importance of environmental issues, and also how to solve them (Berkes, 2009; Sharma & Tewari, 2017; Valentin, 2015; Schaefer, 2007; Worthington, 2012); and (3) in this stream scholars look at the development of 'green' practices through learning skills and competencies which enable employees to perform their tasks and responsibilities in the workplace (Allen et.al., 2017; Sobel, 1996). All these streams highlight a different aspect of learning for corporate greening, which is the foundation for organisational environmental-responsibility activity, whether it be setting strategy and creating policy at the leadership level (Banerjee, 2002), or following implementation activities at the employee level (Ramus & Steger, 2000). However, the majority of the literature studies what employees learn at work to become more environmentally responsible, including enquiring into necessary environmental knowledge, skills, changing values and capabilities. There is a limited discussion on how learning for corporate greening occurs and how it facilitates the engagement of employees in corporate greening. In this regard, research on facilitation of environmental workplace learning processes that underlie the associated implementation of green practices is still emerging (Allen et al, 2017). This area of research is closely linked to the research question of the present thesis, and is reviewed in more detail in Section 2.2. of this chapter.

In summary, this section has provided an overview of the five major streams of 'greening' literature. The research question is located in the fifth stream of research, which considers the employees' learning for corporate greening through different management practices, and offers a critique of existing approaches to corporate greening. The section shows that there is limited research on how learning for corporate greening is facilitated and used to develop greening practices. Therefore, this research seeks to address the gap by investigating learning about greening in organisations, and the facilitation of such learning.

2.1.2. Motivations for 'corporate greening'

In this section, the motivations for corporate greening in different contexts are discussed. According to Bansal and Roth (2000), the different motivations of a large organisation for going 'green' lead to different sets of greening practices. Likewise, Starik and Rands (1995) found a relationship between the employees and the types of green business practices used in an organisation, which have been shaped by the

organisational, political-economic, social-cultural, and ecological environment. As the focus of this research is learning about greening in organisations and the facilitation of such learning for corporate greening, it is important to critically review motivations of large organisation to go for corporate greening. Without considering different institutional, legal, and cultural contexts, the type, nature, and scope of learning for corporate greening in an organisation cannot be understood, or is likely to be misinterpreted or lost (Halme et al., 2009). It is therefore plausible that different motivations for corporate greening may be linked to different ways in which learning for corporate greening is facilitated in organisations (which will be discussed more in depth in section 2.2. of this chapter). In this section, the literature review has found three main motivations why organisations go 'green': (1) to gain a competitive advantage in the market; (2) to demonstrate compliance with environmental legislation and regulations; and (3) internal company motivations to do something good for society. Each of these three types of motivation is discussed in further detail below. It is important to note that the majority of studies in this review were conducted in Western or Anglo-Saxon countries. Therefore, in order to illustrate this critical characteristic, the researcher deliberately includes the country in which the relevant studies were conducted.

The seminal work of Bansal and Roth (2000) with U.S. and Japanese firms found that businesses are motivated for different reasons, such as competitiveness, legitimation, and environmental responsibility. The dominant motivations of the studied firms were positively or negatively influenced by three contextual dimensions: regulation and legislation, market-based mechanisms, and individual concern caused by internal pressure for corporate greening. Furthermore, the study draws attention to an important role of a single individual who had championed their ecological responses. The decision process was often based on the values of powerful individuals, or on the organisation's values, rather than a widely-applied decision. However, organisational cohesive measures may play a disadvantageous role on the motivation of the employees to perform tasks in an environmentally responsible way. Based on the findings of Bansal & Roth (2000), other studies, mainly in a Western context, have confirmed the three types of motivations, and extended them by including details on how they affect the nature and scope of green business practices.

Firstly, one of the most common motivations for corporate greening is achieving a competitive advantage through environmental activities. Firms adopt environmental initiatives, engage in 'green' innovation, and try to portray a green image 'because it pays' (Ambec et al., 2013). Albertini (2013) conducted a meta-analysis of 52 studies (mainly in the Anglo-Saxon countries) over a 35-year period, and found that organisations use environmental initiatives to gain competitive advantage, legitimacy, and reputation, both in the short- and long-term, which suggests that they see a positive relationship between their environmental performance and financial performance. Moreover, Albertini (2013) found that the relationship between environmental and financial performance is significantly influenced by regional differences and industry sector. Economic advantage and institutional pressure were also found to be important determinants of ecological responsiveness in another study of estate industries (Eichholtz et al., 2016).

Further significant motivation is regulation and legislation, which lead businesses to introduce practices in order to comply (Porter & Van der Linder, 1995), and to manage regulatory stakeholders (Banerjee, 2002; Fineman & Clarke, 1996; González-Benito & González-Benito, 2006). Banerjee (2002) found that highly-regulated industries, such as chemicals and utilities, have more of an environmental orientation and strategy focus than firms in other industries. In particular, managers from firms in the chemicals industry had the highest levels of involvement in and knowledge about environmental activities. The researcher concludes that firms in high-environmental impact industries, like chemicals and industrial manufacturing, have a greater environmental strategy focus.

The literature suggests that the degree to which legislation and regulation motivate greening usually depends on industry context. For example, Ramus and Montiel (2005) analysed the commitment of the organisations in relation to the implementation of specific environmental policies across four industry sectors (services, manufacturing, chemical, and the oil and gas industry). The study used a data base which included companies from 20 countries (predominantly from the Anglo-Saxon regions): 41.5% with headquarters in the United States; 33.9% with European headquarters; 12.7% from Canada; 9.7% from Asia (most of them with headquarters in Japan); and the remaining 1.2% from South America, Africa, or Australia. The findings of the study showed that, despite the fact that firms from different industries follow similar patterns

in their commitment to a set of environmental policies, there are significant industry differences in the implementation of those policies (Ramus & Montiel, 2005). Rasmus and Montiel (2005) found that some policies are clearly more popular than others, for example environmental reporting, environmental training, and sustainable development activities. The difference was in the selection of the 'green' practices. For example, services companies were just as likely to commit to policies as other sectors, but were less likely to implement most of the specific environmental policies. Manufacturing, chemical, and oil and gas sector companies were the most likely to implement a broader range of 'green' practice and policies. However, chemical manufacturing companies were just as likely to commit to a reduction of toxic substances as companies in the other sectors. The study highlighted the importance of the industry and the role of legislation in influencing the selection of green business practices and, as a result, motivating companies towards or against higher or lower levels of corporate greening.

Thirdly, internal pressure for greening can be initiated by managers inside the organisation and create opportunities to decide what 'green' practices can be implemented. Treviño and Weaver (2003), using data from major American corporations, found that external pressures motivate the internal decision to create environmentally responsible practices, while managers determine which practices get created and implemented. In a qualitative study in two U.S. pharmaceutical companies (Baxter and Lilly) Prakash (2000) found that managerial and personal values and attitudes are the key for the majority of corporate greening processes and practices. Similarly, a study in a Norwegian context found that employees with high moral motivation select a broader range of green policies, and demonstrate a willingness to implement these (Laudal, 2011). The study, however, suggested that the adoption of green practices depends on the growth and internationalisation of the firm, both of which can affect the motivation of the companies.

In summary, whereas the literature highlights three major motivations for corporate greening, the research also points out that the learning environment for corporate greening inside a large organisation may be different. The process of learning may depend on the size of the company, its internalisation, the type of industry, and how it is regulated by legislation. However, research on corporate greening has mostly been conducted in Western countries. Corporate greening in a non-Western context may be

motivated by different factors and be carried out in different forms. In other words, the current 'greening' literature does not sufficiently explain what managers in the non-Western context is doing differently than colleagues in an Anglo-Saxon context when trying to engage their company more in environmental practices. Having said this, there is limited research on other non-Western countries, such as countries in transition (Crotty, 2016). Therefore, it is important to investigate the literature from countries with economies in transition in the next section.

2.1.3. 'Corporate greening' in countries in transition

This section critically reviews the 'greening' literature on countries in transition which represent a contrast to the free-market neoclassical Western models of the Anglo-Saxon countries (Amable, 2003). The main difference between the two types of countries is that transition countries are still changing the primary form of ownership from being public to private, and are shifting from a planned economy to a free enterprise system, based on competition (EBRD, 2017). As mentioned in Chapter 1, this study focuses on low-speed transition countries because they represent a greater contrast to Anglo-Saxon countries, which have not experienced a transition from the Soviet to post-Soviet stage. Furthermore, seventeen low speed transition countries: Armenia, Azerbaijan, Georgia, Belarus, Moldova, Ukraine, the Russian Federation, Kazakhstan, the Kyrgyz Republic, Mongolia, Tajikistan, Turkmenistan, Uzbekistan, Egypt, Jordan, Morocco and Tunisia (EBRD, 2017) represent 5.6 % of the global population, which is slightly below the 6% of the global population of Anglo-Saxon countries.⁴ This highlights the importance of studying this context. In order to highlight the differences between two contexts, this section covers research on motivations for corporate greening in post-Soviet transition economies, looking at environmental legislation and regulation, customer expectations and societal values.

In the following paragraphs, the following motivations and challenges are reviewed: (1) legislation; (2) customer expectations; (3) changing societal norms, all of which are summarised below.

First, legislation is an important influence on transition economies in that it generates pressure on businesses in these countries which lead to even more developed EMS

⁴ The 'Anglo-Saxon model' of capitalism is practiced in English-speaking countries such as the United Kingdom, the United States, Canada, New Zealand, Australia and Ireland. Characteristics of this model include relatively low levels of regulation and taxes and the public sector providing fewer services. It can also mean strong private property rights, contract enforcement, and overall ease of doing business, as well as low barriers to free trade.

than in developed countries (Baskin, 2006). Some empirical studies explain the situation. For example, in a study conducted in Russia, Crotty and Rodgers (2012a) found that environmental legislation and other actions from legal actors promoted corporate greening in Russian firms. The results from their study suggest that companies in Russia do not seek win-win scenarios, or so-called 'voluntary' greening, such as the introduction of ISO 14001. Instead, they reject such win-win scenarios because such 'greening' activities are simply not profitable. Crotty and Rodgers (2012a) also found that companies in Russia mainly sought to comply with environmental regulations because they felt they had no other choice than to implement legally mandated green practices. Unlike Western companies (see, e.g. Bansal and Roth, 2000) they did not feel that compliance with environmental regulation was a way of 'legitimising' their activity, but merely complied to avoid punishment following a coercive approach to environmental regulation in Russia. The literature that has investigated the role of environmental policies in transition economies also reported that legal actors treat the firms as a small unit of the administrative machine, which is concerned only with punishment (Dixon et al., 2014; Dixon et al., 2010). Although the studies in the Russian context suggest pressure from legislative actors, it is interesting to note that the study presents findings from industrial, privatised firms in the Russian Federation. There is just one study in the Chinese context that investigates government-owned firms in transition economies, which continue to be a major part of the economic system in post-Soviet transition countries (Soulsby & Clark, 2007). Thus, Soulsby and Clark (2007) investigated the condition of the social, economic, and political organisations in countries of Central and Eastern Europe and China, and found local organisations adapted themselves to the highly uncertain economic and institutional conditions of the unstable market-economy systems in post-socialist countries (Soulsby & Clark, 2007). The study highlighted that government-owned firms may experience regulatory pressure differently than private companies because the pressure that stems from external governmental actors, such as the Ministry of Environmental Protection, which regulates the environmental legislative basis in the government-owned firms, generate a different effect on managers to engage with environmental protection matters. Thus, the study illustrated that the context is important which affects the type of learning processes within the organisation.

The second motivation for greening in transition economies relates to customer expectations. The literature draws attention to changing customer requirements and market structures, as well as access to export markets, which influence corporate environmental decision-making and employees' engagement in 'green' activities. Crotty (2016) found that companies in Russia adopt 'green' activities, such as the introduction of ISO 14000, to gain access to export markets. Similarly, ISO 14001 has been a catalyst for greening in other countries such as Ukraine, Belarus, and Kazakhstan (Prakash & Potoski, 2014). However, the findings from Crotty (2016) in Russia suggested that, while companies in transition countries had obtained the international quality standard ISO 9000, ISO 14001, certification was considered unnecessary because their customers, predominantly from the former Soviet Union, did not require it (Crotty, 2016). Despite this weak interest in implementing ISO 14000, the influence of overseas customers on firms in Russia promote 'beyond compliance' activity. Crotty and Roger (2012a) concluded that managers in countries in transition introduce certified environmental standards because of expectations of international customers, and opportunities for cost reduction; this motivates the companies to introduce corporate greening.

The third type of externally-driven motivation of greening in transition economies relates to changing societal influences (Cherp, 2001). Two main changes are visible in the 'greening' literature with focus on countries in transition: public awareness and ideology. Firstly, the existing literature on transition contexts suggested that public environmental awareness in these countries is generally low, and environmental NGOs appear unable to take action in the fields of environmental protection and pollution control (Crotty & Hall, 2013). The findings from other studies in Russian society have described the country as fractured and citizens as apathetic (Crotty, 2016; Crotty & Hall, 2013). Lack of interest in environmental issues in society may be linked to the dramatic changes in from planned to market-related thinking that the transition economies have undergone since 1991 (Verbitskaya et al., 2002) which establishes a link to the second change. The second change in the society of transition economies relates to societal transformations in knowledge and thinking as a result from ideological developments, from communist to market-based thinking (Apostol & Näsi, 2014). The qualities developed by the companies in their employees during Soviet time included a love for society, a revolutionary spirit, a desire to participate in change, discipline, erudition, technical ability, and disciplined collectivism (Pogoradze, 1990).

Nowadays, due to high levels of modernisation and the development of science and technology in countries in transition, this 'ideological work' concentrates on the development of a worker additional qualities such as creativity, professionalism and environmental awareness at work (Butko, 1999). In addition, the area of legal education as part of 'ideological work' has become important in the post-Soviet era (Sahlas & Chastenay, 1998). However, there is little existing research on how formal and informal environmental education at work is set and facilitated in transition economies.

Another aspect of changes associated with ideology relate to change of personal values of employees. In this respect, the existing literature suggests patriotism as a value is a source for environmental virtue (Cafaro, 2010), which invigorates the effect of faster adaptation to changes in the environment (Wang & Jia, 2015). A study in Russia and China found that patriotic feelings, such as love of the country's environment, promoted moral virtue associated with altruism, and helped the research participants emotionally engage with the environment (Griskevicius et al., 2010). The employees perceived that the love of their country and its natural environment was a driver for their engagement in environmental protection because they could 'do something right'. Also, caring about particular places and people is a relevant component of employee engagement in green practices in the context of countries in transition. While some of this research underscores the conditions that promote learning for corporate greening, less is known about those that inhabit it, for example learners and learning partners, which is the focus of the following section.

2.1.4. Summary

This section has introduced corporate greening as an umbrella concept for all activities in a large organisation that are designed to reduce environmental impacts. The critical review of the 'greening' literature helped to situate the research within the broader 'greening' literature. The focus of the research is on learning for greening in organisations in post-Soviet context, and the facilitation of such learning which enables a better understanding how to engage employees in corporate greening. Two emerging themes in the current greening literature help to build a research inquiry around the research question.

First, the literature on corporate greening in this section makes a vital contribution to understanding a variety of 'green' business practices. It provided clear evidence that organisations around the world are indeed changing their existing practices from less to more environmentally friendly ones. However, it shows that most of the greening literature is situated at the organisational level. Corporate greening has been studied extensively from strategic, operational, ethical and integrative perspectives. However, the importance of the human aspect of the corporate greening process in making greening happen is becoming more apparent. There is currently limited research about the way in which greening is shaped by learning processes inside organisations, and how the learning for corporate greening is facilitated by other key organisational actors such as low-tier, front-line managers (Purcell & Hutchinson, 2007). This gap builds a core for the research question.

Second, the section highlighted that context matters, that it determines the motivations for corporate greening. 'Green' business practices can vary in nature and scope because of different external motivations, firm size, and the industry. Whereas literature has advanced our understanding of major motivations for corporate greening relevant for learning processes inside the companies, the research has been conducted mainly in a Western context. Therefore, an understanding of external motivations and other organisational influences can only provide a limited understanding of corporate greening processes inside large companies. The literature review has shown that there are relatively few studies focused on transition economies. Transition economies are interesting because the limited existing research shows that the motivations for and institutional, societal and historical context of greening are different in transition economies. This means that further research on corporate greening in a transition economy, such as Belarus – the context of this research - is likely to give interesting new insights into the facilitating learning for corporate greening.

As this research seeks to investigate learning for corporate greening in organisations in a post-Soviet context, and the facilitation of such learning, the next step is to review the literature that investigates existing research on facilitating learning for corporate greening.

2.2. Facilitating learning for corporate greening

The aim of the section is to critically review the current literature on facilitating learning for corporate greening in different contexts in relation to the research question. The chapter demonstrates that there is limited clarification on meaning for the facilitation of such learning that occurs in today's workplaces in comparison to the 'non-greening' literature. The section has three parts. First, the section begins with a short introduction on what 'facilitation' means as is found in the general 'non-greening' literature. Second, facilitation of learning in relation to corporate greening is discussed. Third, practices for the facilitation of learning are explored, covering a variety of contexts and types of facilitators. Finally, a summary of the research gaps derived from this section is presented, with particular attention paid to the research question of this study.

2.2.1. What does 'facilitating learning' mean?

Before reviewing the literature on facilitating learning for corporate greening, it is important to introduce the term 'facilitating learning' as it is seen in the 'non-greening' literature. This section argues that the literature views the term is not a new phenomenon, and demonstrates a shift from facilitation of learning by HR and EM departments only to low-tier line managers. However, more research is needed on how facilitating knowledge and learning occurs in practice (Antonacopoulou, 2009; Iszatt-White et al., 2017).

'Non-greening' literature suggests that the concept of 'facilitation of learning' is not a new phenomenon but, as described to date, is a complex and multi-faceted concept representing different interpretations and notions. The origin of facilitation of learning lies in John Dewey's book (Dewey, 1938) who noted that 'teacher-directed' schooling does not allow students to express themselves, ask questions, and direct their own learning. He began to question how the contacts between teachers and children can be established 'without violating the principle of learning' (Dewey, 1938, p. 21). For Dewey, informal approaches through play, used by teachers to facilitate children's development and learning, were the solution to the problem. In his later work, Dewey (1956) believed that through play a teacher who is a facilitator should provide as many different personal experiences as possible to enable children's learning (Dewey, 1956). Dewey presents a set of facilitation practices and interventions that help teachers to connect with the natural interests and activities of learners, such as 'taking hold of his [her] activities, of giving them direction' (Dewey 1956, p. 36). In this way,

such interventions foster personal development of learners in two ways - by consolidation of their current knowledge through play and by being challenged by complex situations that a play represents.

The importance of Dewey's work built the foundation for the introduction of other practices of facilitating learning, such as questioning (Resnick, Siegel, & Kresh, 1971) and the 'clinical interview' as a diagnostic as well as educational approach (Piaget, 1972). Piaget (1972) argues that learning occurs in a hierarchical pattern of development. Each sequential stage requires the use of more sophisticated types of facilitation practices. Kohlberg and Mayer (1972) further elaborate on Piaget and argues that facilitation of learning not only means any behaviour change, but also a change toward greater differentiation, integration, and adaptation in the society by learners, i.e. students.

Considering the experiential notion of facilitation learning started by Dewey and Piaget, in which the teacher as facilitator plays an active role, the humanist approach to facilitation theory focuses on learners and self-directed learning. Developed by Rogers (1985), this approach is based on the assumption that people have a natural human eagerness to learn and that learning involves changing our own concept of our self. For Rogers 'the facilitation of significant learning rests upon certain attitudinal qualities which exist in the personal relationship between the facilitator and the learner' (1969, p. 106). In his view, learning will only take place if the person who acts as a facilitator demonstrates qualities such as genuineness, accepting, and trusting (Rogers, 1969, pp. 106-112). Thus, the role of a learning facilitator is to establish an atmosphere in which their learners feel comfortable to discuss and explore their new ideas. Consequently, through exploring ideas and discussion, learners are able to learn from their mistakes. Therefore, Roger (1969) emphasises that learning happens by experience in an environment in which one does not feel threatened by external factors.

Also, in the humanist tradition, Heron (1989) explores the human aspect of facilitation. He emphasises the role of a learner and the role of context in which the learner generates self-directed learning. Heron suggests that facilitators have a key role in helping individuals and teams understand what they need to change and how to change it to successfully implement evidence into practice. However, he emphasises that the precise role of facilitation and its contribution to the success of implementation,

particularly within multi-site projects, has yet to be thoroughly described, operationally defined, or well-evaluated. Particularly, this literature gap is addressed by this thesis.

In a management context, 'facilitation of learning' reflects a shift from a command-and-control to a facilitate-and-empower orientation in which managers focus on developing their team members (Ellinger, Watkins, & Bostrom, 1999) and has been studied mainly from psychological, educational and medical perspectives. For example, facilitating learning in psychology is understood as an individual learning process for the understanding of the self (Perriton, 2007; Wittrock, 1974). Furthermore, there is a large body of literature on facilitating learning in schools or hospitals. For example, the literature on facilitating learning in schools sees the term 'facilitation' as grounded in student-centred inquiry, i.e. teaching by helping students become aware of their own thinking (Hmelo-Silver & Barrows, 2006). The definition underlines the active role of the teacher, whereas the students take a rather passive role. Finally, research on the roles of hospital personnel defines 'facilitating learning' as '*a social process that focuses on evidence-informed practice change and incorporates aspects of project management, leadership, relationship building, and communication*' (Berta et al., 2015, p. 12). Berta et al. (2015) stress hands-on as well as the social aspects of facilitation, which cannot be isolated from the learning environment. All these perspectives highlight the efforts of the facilitator who supports either personal or professional development of a learner or group of learners in a classroom or a workplace.

The management literature defines 'facilitating learning' as the process of influencing of self-directed learning (Heron, 1989), as enabling the processes of learning in group contexts (Gregory & Romm, 2001), or the process by which employees help other employees to learn (Ellinger & Cseh, 2007). In this respect, Heron (1989) defines a facilitator as a person who is 'formally assigned to the 'job' by a sponsoring organisation (Heron, 1989, p. 1) and has the role of empowering participants to learn in an experiential group'. Other management literature devotes special attention to the designated role of managers as facilitators who encourage others to reflect upon their current practices in order to identify gaps in performance, introduce change, enable knowledge-sharing, and thus improve outcomes (Gray, 2007). Although the literature highlights how facilitators may be employees at any level within the organisation who help others to learn (Ellinger & Cseh, 2007), the majority of management literature

focuses its study on the facilitation processes of senior or line managers. The literature points out that line managers, who had operational responsibility for managing people in the past, have now developed into being vital members of the HR function, a role which has continued to increase over time and become important in the field of learning facilitation (Papalexandris & Panayotopoulou, 2003; Storey, 1992). Line managers are middle managers who are located on the hierarchy ladder below the top managers, and are responsible for supervising other managers (Fenton-O'Creevy, 2001), including first-line managers, who are lower-level line managers (Budhwar, 2000; Kulik & Bainbridge, 2006). A growing stream regarding the involvement of front-line managers in the HR function demonstrates a shift of facilitation of learning from HR departments to low-tier managers, such as workforce expansion and reduction, performance appraisal, pay and benefits, recruitment and selection, training and development and industrial relations (Budhwar, 2000; Collings et al, 2018; Hope-Hailey, et al., 1997; Mahoney & Brewster 2002; Larsen & Brewster 2003).

Finally, the management literature investigates practices that facilitators use in the process of enabling learning mainly in a Western context. There is limited literature that provides insights into processes of facilitation and socio-historical influences on learning in different settings. In a rare example of a publication that does this, a recent study in three South-Eastern European countries has shown that managers use feedback as an open and continuous process to make sense, facilitate, endorse and monitor the ways routines shape business practices (Psychogios et al., 2018). The literature underlines how managers-facilitators act as change agents in the working place and bring their knowledge and expertise to interact with learning during the learning process (Harvey, et al., 2002). They decide what facilitation practices are more tailored for the specific type of learners to achieve a desirable learning outcome. For example, a study in the public sector in the UK found that a facilitator of a leadership programme brings his expertise in leadership and demonstrates the dynamics of interaction which allows the facilitator to make different facilitation choices during the learning process (Smolović Jones et al., 2015). These choices may include whether to engage participants further by pushing them into discomfort or to bring the learning activity into closure. Similarly, the recent qualitative longitudinal case study of a UK-based healthcare knowledge mobilisation programme found that managers-facilitators are involved in overlapping parallel practice-level processes which underpin the evolution of facilitation over time (Kislov et al., 2017). These processes include: (1)

prioritisation of (measurable) outcomes over the (interactive) process with learners; (2) a reduction of (multi-professional) team engagement; and (3) erosion of the facilitator role to 'hand over' the activity to the learner. All these studies indicate the importance of facilitating workplace learning which is a complex process, as well as the role of facilitators in the learning process in the workplace, guiding learners towards desired learning outcomes. However, more research is needed on how the facilitation of learning occurs in practice (Antonacopoulou, 2009; Iszatt-White et al., 2017). Therefore, exploring contextual influences in a non-Western setting, as done in this study, contributes to the discussion on the role of front-line managers as facilitators of learning and change in an uncertain environment.

In summary, this sub-section has shown a broad spectrum of definitions of learning facilitation, and the role of managers at all levels in this process. It has also shown that managers-facilitators use different practices to achieve better involvement of the employees, such practices continuing to be the focus of recent management research. The next sub-section critically analyses the literature regarding the facilitation of learning in the workplace when considering corporate greening.

2.2.2. Facilitation of learning for corporate greening

This sub-section demonstrates that there is a limited clarification of meaning on the facilitation of learning for corporate greening. The meaning is explained implicitly rather than explicitly, through several studies, and this lack of precision shows some similarities with the general workplace learning literature.

Interest and research on the facilitation of learning for corporate greening have emerged in the past decade as the need to address challenges in the implementation of corporate greening has grown (Allen et al., 2017). These challenges can be resolved through the facilitation of learning for corporate greening. For example, Reed et al. (2014) looked at the implementation of sustainability practices among academia-practitioners in regions in Canada over their 30 months of partnership. The challenges in cultural differences were the key to facilitating learning between learners to establish common goals, set mutual expectations and build relationships of trust and respect. The study showed that the role of the multi-lingual facilitator was particularly useful in the beginning to establish appropriate communication between the regions. The study concluded that without the help of an outside facilitator, the learning process on the

selection of changes in 'green' practices would have been difficult (Reed et al., 2014). Another example which demonstrates explicitly the process of facilitating learning for corporate greening relates to a difficulty in aligning the goals between different departments. A study by Weller (2017) investigated a large U.S.-based global high-tech manufacturing company that had spent more than two years integrating 'green' practices, such as ethics, compliance and CSR under the Corporate Responsibility Department. Weller (2017) found that the roles of the facilitator were taken by different actors, such as team leaders, project managers or the top manager. The learning was achieved by bridging meaning about sustainability between the relevant managers. Using alignment facilitation practices, such as regular meetings and discussions, alignment between the different groups of learners was achieved over time. Although these studies do not explain the meaning of facilitating learning for corporate greening implicitly, they draw attention to the role of a dedicated person, inside or outside the organisation, who helps other learners to learn new skills to communicate, as captured in the study of Reed et al. (2014), and acquire new abilities and competencies to align different goals across the company, as the study of Weller (2017) demonstrated. As a result, this process ensures engagement of the employees with environmental issues and activities around corporate greening/sustainability. Other studies provided evidence that other managers are also often involved in facilitating the process of learning for corporate greening (Benn & Martin, 2010; Fenwick, 2007; Hawkins et al., 2017; Schaefer & Harvey, 2002).

Even though the definition of the facilitation of learning for corporate greening is not clear, the newly emerged body of literature on Green Human Resources Management (GHRM) sees GHRM practices as an important means of facilitating learning for corporate greening. In this context, GHRM practices aimed at building employees' environmental knowledge and skills (Werbil & DeMarie, 2005) can lead to high levels of employee involvement in green business practices (Kapil, 2015). The literature highlights that the facilitation of learning for corporate greening can achieve employee engagement in environmental matters: if they feel less pressure and are empowered (Cantor et al., 2012); if they can take responsibility for and ownership of their environmental projects (Daily & Huang, 2001); or if they are valued through rewards (Govindarajulu & Daily, 2004). The literature also emphasises how contextual factors can influence employees' motivation for corporate greening at work (e.g. Florea et al., 2013; Norton et al., 2017). Thus, it is important to study the literature on GHRM

practices and how the literature sees the place of managers-facilitators in the process of learning for corporate greening, and how contextual influences are embedded in the formation of practices, which is discussed next.

2.2.3. Practices facilitating learning for corporate greening

This section highlights the importance of organised GHRM practices for learning for corporate greening, and associated 'informal' practices in which managers-facilitators are involved. It presents four sets of practices for facilitating learning for corporate greening which are aimed at motivating employees: environmental training, rewards, employee's empowerment and organisational culture. It argues that most of the literature locates the practices for facilitating learning for corporate greening from the perspective of learners or training-facilitators (experts). There is only a limited body on 'informal' facilitation practices on employees' employment and organisational culture, which highlights the importance of low-tier managers as facilitator. However, this body of research shows how limited research has been carried out on how front-line managers facilitate learning for corporate greening in their organisation, and how their facilitation is shaped by their socio-historical context, which is the focus of this inquiry.

2.2.3.1. Environmental training

First, the literature identifies environmental training as one of the most frequently used by organisations when developing environmental knowledge and skills (Ángel del Brío et al., 2008; Jabbour, 2011; Jabbour, 2013). The facilitation of learning for corporate greening occurs through a learner-trainer approach in organised interventions, such as environmental training programs, workshops, and sessions (Liebowitz, 2010; Prasad, 2013). These activities are organised to help employees to make sense of complex environmental projects and acquire the environmental knowledge that is necessary for collective learning. For example, Jabbour (2015), in his study in Brazil, found that individual environmental knowledge gained through learner-instructor training sessions fosters the creation of collective knowledge about the implementation of ISO certification that facilitates organisational flexibility and adaptation to environmental changes through EMS practices (Jabbour, 2015). Pless et. al.'s (2012) study showed that external expert-facilitators of environmental training helped participants to make sense of environmental information during their training session. In their qualitative study, the authors found that employees found it particularly valuable

to use their gained environmental knowledge not only in their daily work inside the organisation, but also in the cross-sector partnership with social entrepreneurs and NGOs and, in this way, increase the effectiveness of the learning process for greening (Pless et al., 2012). Furthermore, Zoogah (2011) illuminated the benefits of using expert-facilitators who provided independent advice on problem-solving solutions. However, external expert-facilitators offer limited opportunities to engage employees in environmental problem-solving projects after the employees have attended the sessions.

Further to the evidence about the facilitation of learning for corporate greening by expert-facilitators, the literature provides evidence for the important role of HR and EM specialists as the main facilitators for environmental training, while providing opportunities for the involvement of other staff in post-training activities. According to Cherian and Jacob (2012), HR and EM specialists design environmental training based on training needs for environmental knowledge and skills of the organisation in the pre- and post-phases of the training. For example, post-training activities include the use of existing training materials used during the sessions by expert-facilitators (Jackson et al., 2011; Renwick et al., 2013). Other literature points out that the support of top management and teamwork are critical for the development of technical green management practices (Arulrajah et al., 2015; Teixeira et al., 2012; Opatha and Arulrajah, 2014; Sarkis et al., 2010). However, this stream of GHRM literature does not specify which type of employees below top managers are involved in developing these facilitation practices.

In contrast, two studies found in 'greening' literature suggest the importance of front-line managers in the learning process for corporate greening. Wright & Nyberg's (2017) findings suggested that the role of front-line managers and their team members translate the environmental issues into their operations. The influence particular occurs when the tensions between the production demands and sustainable operations were evident (Wright & Nyberg, 2017). Chenven and Copeland (2013) identified that front-line managers possess important contextual knowledge about environmental issues which is important for implementation of changes for the environmentally-friendly process. However, the literature does not specify to what extent low-tier management is involved in facilitating learning for corporate greening, and how these practices are shaped by socio-historical influences, which will be addressed in this study.

2.2.3.2. Rewards and recognition

Another important GHRM practice for the facilitation of learning for corporate greening is green rewards and recognition. Facilitation through rewards and recognition occurs through linking employees' participation in green initiatives with financial incentives, promotion gains or public recognition, which encourages employees to use eco-friendlier practices or change their existing daily practices (Jabbar & Abid, 2014; Masri & Jaaron, 2017; Prasad, 2013). The literature illustrates how the practice is facilitated mainly by specialised departments, as well as highlighting a critical role for low-level managers, as presented below.

In terms of specialised departments, the literature points out that the HR and EM departments facilitate learning for corporate greening mainly through monetary-based 'green' rewards, such as bonuses, and recognition-based 'green' rewards, such as awards or publicity (Renwick et al., 2013). A study in the Palestinian context showed the positive impact of GHRM practice on environmental performance (Masri & Jaaron, 2017). In this context, the HR specialists act as facilitators through designing rewards, and the management system through monitoring the process and communicating the results to the organisation. However, other studies suggest that developing effective monetary incentives can be challenging. A study by Fernández et. al. (2003) pointed out difficulties in organising the accurate and fair evaluation of environmental behaviours and performance due to the complexity of environmental projects. In order to leverage the weaknesses of the facilitation process, a recent study by Tang et al. (2018) in the Chinese context found that reward management is more effective if non-financial rewards go in combination with financial incentives in the form of green travel benefits. The study emphasises that non-financial rewards demonstrate management commitment, which increases commitment from the workers themselves into becoming more environmentally responsible. Consequently, the employees are more involved in eco-initiatives. Therefore, the recognition rewards through announcements about good work or innovation are more effective.

Furthermore, the literature investigates different levels of management and their involvement in facilitating learning for corporate greening through rewards. Ramus's (2001) quantitative study of middle and low-level employees in different countries is of particular importance. The study focuses on the impact of offering rewards on environmental practices implementation. Ramus (2001) found that recognition-based

rewards, in the form of letters of praise and plaques, had a better impact on employees' commitment to environmental practices than other types of rewards. This echoes the findings of Jabbour's (2011) study of Brazilian firms which have implemented ISO 14000, which found that employees perceive a reward system with public recognition for environmental management more effective than a traditional financial reward. These studies indicate that managers at the lower hierarchy level are more involved in non-monetary based 'green' rewards than their colleagues from HR departments. The outcome of the learning process is a positive attitude, which encourages their subordinates to adopt green practices (Kapil, 2015) or commit to the acquisition of other skills necessary for corporate greening (Jamali, 2006). However, the literature lacks an answer to the question of how front-line managers form these practices, and how learning through rewards in other socio-historical contexts occurs.

2.2.3.3. Employee empowerment

Another important facilitation practice is green employee empowerment and participation which fosters the motivation of the staff and their enthusiasm for participating in 'greening' activities. The review in this section finds an important role for senior managers and HR managers who encourage employees to participate in and initiate eco-friendly ideas by sharing power with them.

The literature defines environmental empowerment practice as a process through which authority shares its power with employees to address environmental issues (Daily et al., 2012). The literature acknowledges that empowered employees are more likely to be involved in the improvement of the environment (Govindarajulu & Daily, 2004). Daily et al. (2012) explains that facilitation of learning through empowered employees occurs by translating their experience and tacit knowledge into a shared resource for pollution sources, managing emergency circumstances, or expanding preventive solutions for emerged environmental problems within organisations (Daily et al., 2007). In this process, the role of the HR function is to develop top managers who are able to create a participative working environment (Liebowitz, 2010). Liebowitz (2010), in a quantitative study of U.S. companies, identified that trained leaders ensure that employees are able to participate in negotiations. The study found that empowered employees have the autonomy to generate creative solutions for solving environmental problems, and to feel comfortable investing time in creating new environmental practices (Liebowitz, 2010). Some other studies suggest the commitment of senior

managers plays an important role in the process of the facilitation of the learning process for corporate greening (Branzei et al., 2004; Robertson & Barling, 2013). By showing commitment to addressing environmental issues, senior managers motivate staff to undertake changes and promote 'green' initiatives (Andersson et al., 2013). Weller (2017) argues that facilitating learning for sustainability in U.S. companies was possible by arranging practices initiated by the chief ethics officer – a senior manager. In this study 'arranging practices' meant that a new structure among teams was set that helped to arrange the interests of the four sub-functions around a single mission. The study noted that while there was little engagement between the employees themselves in the four groups, after introducing arranging practices, the risk management and knowledge sharing improved. Most literature, however, investigates the role of leaders in isolation from their employees, and highlights how subordinates affect environmental leadership (Boiral et al., 2009).

In contrast to the role of HR practitioners and senior management as facilitators, the literature emphasises the importance of low-tier manager (line managers) and their teams as facilitators in the environmental learning process. The facilitation of learning in this case occurs through a down-up approach, in contrast to top-down (Espinosa & Porter, 2011; Winn & Angell, 2000). For example, Winn and Angell (2000), in their quantitative study of 135 German consumer good firms, found that the 'greening' process does not always occur from the top down, but that sometimes line management and employees implement change without top management involvement (Winn & Angell, 2000). Similarly, Rothenberg (2003) studied workers' participation in 'green' projects in a U.S. automobile plant. The study revealed that employees themselves took the role of a change agent, and facilitated the participation and involvement of others in environmental projects, which generated a significant impact on the successful implementation of corporate greening. Rothenberg (2003) explained they took the role of facilitator because the experienced employees had both technical and contextual knowledge that their supervisors lacked. In contrast, further literature suggests that despite the usefulness of knowledge facilitators, not all employees who take facilitator's role naturally possess the skills to be good facilitators (MacNeil, 2003; Reed & Abernethy, 2018). MacNeil (2003) argues that the facilitator's role makes different demands on managers in terms of management style and skills in comparison to a traditional command and control managerial role. Consequently, in order to facilitate environmental learning despite tensions between actors involved in

environmental issues, managers require special skills to encourage knowledge sharing in teams (Kirk & Broussine, 2000). The new role of facilitators requires to compromise or negotiate certain boundaries to achieve a result (Reed & Abernethy, 2018), which is the main focus of this study.

Other studies confirm the value of the role of low-tier management who are knowledgeable or experienced as employee-facilitators because they are people with whom employees can discuss and implement solutions. For example, Hawkins et al. (2017), in their study of how middle-managers develop low-carbon practices in their organisations, highlight the importance of practices whereby the managers develop a more detailed awareness of sustainability initiatives. In their study, the environmental practices appear to be meaningful because the managers selected material items such as 'sustainability checklists' to solve the environmental problem of 'carbon reduction', and worked together with their project team (Hawkins et al., 2017). Thus, these studies suggest that there are different ways of facilitating learning for corporate greening through empowerment. However, the majority of studies show rather an instrumental approach towards facilitating a participative work environment by middle managers or top managers. More research on front-line managers would enhance understanding of how employees learn to make appropriate decisions concerning environmental problems that may emerge when implementing environmental practices.

2.2.3.4. Organisational culture

Finally, the GHRM literature highlights the importance of organisational culture as a valid consideration for facilitating learning for corporate greening. Harris and Crane (2002) define the organisation environmental culture as the set of assumptions, values, symbols, and organisational artefacts that reflect the desire or necessity of being an environmentally oriented organisation. Thus, facilitated learning occurs through developing relevant values and commitment to corporate greening that promotes employee motivation and willingness to adopt responsible environmental actions (Govindarajulu & Daily, 2004). Gupta and Kumar (2013) have emphasised two ways of facilitation through (a) employees who can express freely their thoughts on proposed environmental actions, and (b) institutionalisation of open channels of communication, such as discussion and collaboration, as part of the organisation's green initiatives. Using these processes allows managers to be informed about the development of

green business practices, and encourages employees to contribute to the greening goals which the company have set out (Gupta & Kumar, 2013).

The literature shows that the HR function, in the form of top managers and HR managers, is the main facilitator for building a green culture by developing employees' intentions to engage in 'green' business practices (Norton et al., 2017; Linnenluecke & Griffiths, 2010; Paillé et al., 2014). Despite studies which highlight the importance of top management roles, including the definition of penalties for violating environmental regulations and rules (Renwick et al., 2008; Mandip, 2012), literature shows that the commitment of top management is not always satisfactory. For example, Fernandez et al. (2003) explained that antecedents for an organisational green culture include employees' involvement in 'greening', employees' training, motivation and incentives, managers' commitment to environmental issues, and the eco-centric values of employees. Thus, the study found that managers at the lower level and employees are the core facilitators for the creation of a green culture. Recent empirical studies suggest that line managers take a facilitator role as part of the HR function. For example, Rayner and Morgan (2018) studied the engagement of employees in corporate greening in four power stations in Australia. The mixed method study found that that learning for corporate greening is likely to be shaped by how managers and supervisors apply existing HR policies and practices to influence the work environment. In contrast, the study found that, in reality, managers do not moderate the relationship between environmental knowledge and green behaviours. The authors explain the result by the individual values held by line managers or the complexities, competing demands and paradoxes associated with the role (Rayner & Morgan, 2018). Also, Daily et al. (2012) and Jabbour and Jabbour (2016) highlight how employee empowerment constitutes an important element in creating a green culture as it allows employees to make decisions about environmental problems whenever needed. Despite the fact that the studies conducted so far are focused just on highlighting the important role of different levels of employees, there are no studies which provide evidence that front-line managers are part of the developing process, where the HR function is less developed.

In terms of contextual influences and how 'green' organisational culture is shaped, the literature is limited. There is just one study, in an Australian context, which identified corporate environmental strategy as an organisational contextual factor that shapes

green psychological culture which, in turn, influences green behavioural intentions of employees (Norton et al., 2017). The authors claim that the relationship between the environmental strategy and culture is strong, still the method may not capture some tensions. Therefore, Norton et al. (2017) calls for more research into the boundary conditions of this relationship, which may result from irresponsible leadership behaviour. Although some effort has been made in the area of contextualising organisational culture, it does not provide sufficient response on how a wider context shapes the organisational culture as a GHRM practice. Therefore, there is a need to study practices that low-tier managers use to facilitate an organisational culture.

2.2.4. Summary of research gaps and developing research agenda

This section presents key summaries of research gaps which have been identified through reviewing the relevant literature, and developing a research agenda. This research attempts to address a need to understand how front-line managers facilitate learning for corporate greening shaped by a changing socio-historical context, which includes the distinctive features of the transition economy environment. Therefore, this review was helpful in identifying more specific research gaps relevant to selection for the theoretical lenses of this study.

First, the review of practices and what the businesses do in order to facilitate learning for corporate greening shows generally a rather instrumental approach to facilitating practices. Management literature shows that 'facilitating learning' is a new phenomenon, and is broadly defined as a way to *'help other employees learn, and facilitators may be employees at any level within the organization who help others learn'* (Ellinger & Cseh, 2007, p. 438). In contrast, greening literature is missing a clear definition, and focuses mainly on facilitation approaches associated with green HRM and EM, which are largely executed by HR and EM specialists or external trainers. The facilitating practices for learning for corporate greening include environmental training, rewards, employee empowerment and organisational culture. Only a small body of greening literature has pointed out the crucial role of first-line managers as facilitators to empower employees and create an organisational culture encouraging more engagement in corporate greening (Jamali, 2006; Muralidharan, 2016). Front-line managers possess important contextual knowledge which is critical for the implementation of changes for the environmentally-friendly process (Chenven & Copeland, 2013). However, the literature does not explain how front-line managers

facilitate learning of corporate greening in their organisations. More research on front-line managers would enhance our understanding of how employees learn to make appropriate decisions concerning environmental problems that may emerge when implementing environmental practices.

Second, much of the literature on the practice in the Western countries does not discuss the influences of societal, historical and legal changes on the choices of managers when selecting relevant facilitating practices to encourage employees to engage in 'green' practice. The free-market-based conditions have been taken for granted by most authors of learning for corporate greening research. This is unfortunate because facilitation choices are selected within and shaped by contextual influences, as discussed in 'non-greening' literature. Research on socio-historical contextual influences that impact facilitation of such learning at work has been limited, and has been mainly conducted in a Western context. The literature suggest that the context is important in making sense of what is happening at workplaces in order to design the HR practices adequately (Cooke, 2018). However, the GHRM literature is rather silent about how socio-historical context shapes facilitators' practices for environmental workplace learning. Thus, Cooke (2018) and Budhwar et al. (2018) call for more qualitative studies to address the imbalance in HRM research. Therefore, more research into practices used by front-line managers to facilitate learning for corporate greening in a non-Western context, e.g. a post-Soviet context, is needed, and which guides the inquiry of this study.

Furthermore, the literature does not provide insights into the interactions between facilitators and their learners during their learning process, which is necessary in order to understand the main impact of the socio-political context, for example the differences between Soviet and post-Soviet ways of addressing environmental issues. It is necessary to unpack the practical issues of the front-line managers. In addition, external drivers are changers of the societal norms associated with the transition from a Soviet-type ideology in countries in transition. Moreover, in a transition economy, the historical legacy in the form of practices inherited from the Soviet Union still shape the employees' engagement in organisational change. Facilitation of learning in the context of workplace implementation of 'corporate greening' may thus be thought of as a part of the political dynamics at play in systems in which power relations between organisations, groups and facilitators are also impacted by the socio-political context,

such as the transition from Soviet to post-Soviet ways of addressing environmental issues.

While the socio-political context in which the facilitation of learning occurs is not particularly well covered in the existing literature on facilitating learning at work, organisational contexts and dynamics are frequently considered. This literature stresses that learning is not a one-way process, but is an interaction between the workplace, learners and facilitators. There is a body of research into the interactions between facilitators and their learners during their learning process in which facilitators are a key in helping individuals and teams understand what they need to change and how to change it to successfully implement evidence into practice (Heron, *The complete facilitator's handbook*, 1989; MacNeil, 2001; 2003; Renwick, 2016; Ellinger, Watkins, & Bostrom, 1999). The majority of studies highlight the importance of the organisational context to building such interactions. Another stream of research suggests that interactions between learners and other learning partners occur in a complex social process (Antonacopoulou, 2006; Ellinger & Cseh, 2007; Heron, 1999). General management research argues that learning is a product not only of the organisational level, but of the wider social context at the national level in which the historical approach and the traditions have determined acceptable behaviour and the level of freedom of the managers as facilitators (Antonacopoulou, 2006). Antonacopoulou (2006) found that facilitators, when establishing learning norms, values and attitudes considered historical events in which team members were 'blamed' when they make mistakes. Research also highlights the importance of contextual influences beyond organisational settings for workplace learning (Erkelens, van den Hooff, Huysman, & Vlaar, 2015). In this context, the aim of facilitation is to establish and maintain an environment in which learning is can take place within the socio-political context.

Within such social interactions, the facilitator and learners take on specific roles. For example, some studies provide evidence that facilitators may adopt a new identity by taking an active role of influencing other employees or coach (Ellinger et.al., 1999). Other studies suggest that employees maybe active and responsible for their learning, acting as both facilitator and learner by organising themselves in self-administered learning groups. The learning process and rules of working as teams are established through negotiating, compromising, and explaining concepts to another, while the

facilitator monitors the building of team skills and group cohesion. Thus, the literature considers that identification with a role of a facilitator of learning is a necessary phase of transition in companies that are aspiring to become learning organisations.

As the socio-political context has received less attention in the literature on the facilitation of learning, this study unpacks the practical issues faced by front-line managers associated with facilitating learning for new ways of 'green' thinking in a country transiting from a Soviet-type to a Post-soviet ideology. Consequently, examining the social processes associated with learning in the socio-historical context will contribute to a better understanding of corporate greening process in which new 'green' practices take place. Therefore, this study attempts to address a need in the literature to understand more about the practices of environmental learning facilitators who are front-line managers in the context of strongly embedded Soviet legacy practices that may positively or negatively influence the front-line managers' facilitation of learning for corporate greening. In the next section, the theoretical framework that informs this research is presented.

2.3. Theoretical underpinnings

This section shows how the concepts in situated learning theory (Lave & Wenger, 1991) - community of practice and boundary object – might be operationalised in order to understand how front-line managers in a post-Soviet context facilitate learning for corporate greening in their organisations. The chapter is structured around two sections. First, the rationale for the situated learning theory and the selection of two concepts for this study are given. Second, the section presents a theoretical framework for understanding how front-line managers in Belarus facilitate learning for corporate greening in a changed socio-historical context.

2.3.1. Rationale for selection theoretical lenses

The purpose of this study is to provide a context-rich account of front-line managers' experiences in their role as facilitators for learning for corporate greening in a post-Soviet context. This sub-section looks at 'non-greening' research to understand the importance of the socio-historical context in the work of front-line managers as learning facilitators at work. It shows first that the understanding of the social-historical context is important for facilitating workplace learning because it explains the learning environment and multiple interactions of front-line managers with learners. Second, it

reviews existing 'non-greening' learning literature in a post-Soviet context to understand the potential features of the natural environment of businesses in transition economies relevant for studying the learning for corporate greening. It states two main components in transition economies: opportunities for learning new market-based approaches, and the legacy of the Soviet Union, which defuses the formation of contemporary practices used in organisations. Finally, it explains that situated learning, along with the concepts of community of practice and boundary objects, is useful to study front-line managers' contextualised experience in the post-Soviet context, and in this way, address the main purpose of the study.

First, the literature on workplace learning highlights how context infuses all aspects of learning, which shapes the learning environment for organisations in which the manager-facilitator interacts with other learners. Research argues that context plays an important role in moderating the outcomes of a manager's efforts (Jarzabkowski & Wilson, 2006). The majority of studies on individual learning at work use a multidimensional approach, which specifies national, regional, and industrial contexts (Guthey et al., 2014; Shrivastava & Kennelly, 2013). However, it is insufficient to answer how facilitation occurs in the learning environment between learners and other learning partners in 'greening' research. As has been mentioned in section 2.2.4. 'Summary of research gaps and developing research agenda', an emerging stream of research has begun to explore the richness of interactions between learners and other learning partners in a complex social process (Antonacopoulou, 2006; Ellinger & Cseh, 2007). Ellinger and Cseh's (2007) study of a consumer-focused manufacturer located in the US found that two large overarching contextual factors positively influenced employees' facilitation of others' learning. These included a learning-committed leadership, and an internal culture committed to learning. The study also found that the learning cycle could begin with the manager-facilitator, who may then play a greater role in the process of learning to help the learner learn. The author explains that the role of the facilitator is to create and provide learning opportunities, as well as engage employees, using specific facilitation strategies. According to Antonacopoulou (2006) learning is a product not only of the organisational level, but of the wider social context at the national level. In the study of managerial learning practices in the financial services sector in the UK, the researcher identified that the managers in the banking sector learn beyond the boundaries of the education, training and development

provided within organisations. The study highlights how the historical approach and the traditions in the banking sector have determined acceptable behaviour and the level of freedom of the managers. Similarly, the research on practices highlights the importance of contextual influences beyond organisational settings for workplace learning. In the study of Multi-National Companies (MNC), Erkelens et al. (2015) found that a network of local experts facilitates the organisational learning of the whole company resulting from the company's participation in various local practices. The facilitation occurs by un-embedding and re-embedding knowledge between existing and new practices. All these studies suggest the importance of the organisational context, but also the wider societal context in different forms that influence facilitating workplace learning, and the way learning facilitators interact with their learners.

In contrast, general 'non-greening' research on front-line managers focuses mainly on the contextualised learning of low-tier managers through the organisational environment, which does not consider wider socio-historical influences. The research demonstrates that the job roles of front-line managers are contextualised in terms of meeting the local expectations of peers, supervisors and other staff (Fineman, 1997). There is empirical evidence that front-line managers' roles in organisations have been broadened, while they have maintained their traditional supervisory duties, such as motivational and educational roles (Hales, 2005). Consequently, the role has increasingly changed. Front-line managers have begun to be responsible, in addition to their operational responsibilities, for the implementation of many HR practices (Purcell & Hutchinson, 2007). The shift has brought front-line managers to interact with their teams and other actors to satisfy the needs of production and, at the same time, resolving issues of their team members and other actors. Further research suggests that the front-line managers in their roles are often perceived as a reflective agent in the implementation of change (Down & Reveley, 2009; MacNeil, 2003; Perry & Kulik, 2008), or take boundary-spanning functions in large organisations because they are well connected within social structures, internally and externally (Tushman & Scanlan, 1981). Boundary-spanning functions are defined as roles that establish the link between the individuals and groups outside the organisation and the organisation with the aim to obtain valuable information to help the internal processes (Aldrich & Herker, 1977; Schotter, Mudambi, Doz, & Gaur, 2017). The role is important because such individuals build bridges between the external and internal organisational environment

(Kaplan, Milde, & Cowan, 2017) and act as informal leaders mediating performance of individuals in the teams and the organisation (Liu, Jiang, Chen, Pan, & Lin, 2018). Finally, a steady stream of studies on front-line managers' roles highlights issue of 'enacted practices', which are dependent upon a manager's interactions with other learners. The front-line managers' are confronted with a lack of training, lack of interest, heavy work overload, conflicting priorities and self-serving behaviour (Fenton-O'Creevy, 2001; Heyden et al., 2017). This indicates that the research on front-line managers so far has shown that the organisational influences on their role as facilitators of in workplace learning may support or hinder the low-tier managers to act as an agent for change. However, there is a limited understanding on how socio-historical context shapes the practices of front-line managers as facilitators of workplace learning because it does not capture the richness and inter-connectedness of the wider contextual dimensions (Sergeeva & Andreeva, 2016).

In the next step, considering changes in the role of front-line managers in facilitating learning, a review of 'non-greening' literature of the post-Soviet context helps us to understand the potential features of complex relationships generated through post-Soviet transition relevant to the study of learning for corporate greening. The literature has identified two main components relevant for studying learning for corporate greening in transition economies: opportunities for learning new market-based approaches, and the legacy of the Soviet Union. These two aspects are briefly reviewed below.

First, following the collapse of the Soviet Union in 1991, the countries became independent, which opened up the development of new market-based approaches, which then enhanced learning for corporate greening. The changes included, as partially discussed in section 2.1.3. of this chapter, the emergence of market-based instruments, including taxes, fees and charges (Kluvánková-Oravská et al., 2009; Kronenberg & Bergier, 2012). At the same time, most post-Soviet countries faced common problems in finding a balance between the commercialisation of environmental issues and their economic situation (Crotty, 2016). The problems are particular visible in the seventeen low speed transition countries, as discussed in section 2.1.4.⁵ These countries have experienced a worsening of terms of trade with

⁵ The *low speed transition economies* are Armenia, Azerbaijan, Belarus, Georgia, Moldova, Ukraine and Russia, Kazakhstan, Kyrgyz Republic, Mongolia, Tajikistan, Turkmenistan, Uzbekistan, Egypt, Jordan, Morocco and Tunisia (EBRD, 2017)

Russia, and the necessity of having to rely on their own limited natural resources (Sorokivska et al., 2017). In addition, the countries have rethought their place in the world economy, and the necessity of reconstructing their post-Soviet national identities, which affects the values of their citizens (Titarenko, 2007). All these new processes of liberalisation have forced these countries to learn how to manage their organisations differently (Havrylyshyn & Van Rooden, 2003).

On the other hand, the historical legacy in the form of practices inherited from the Soviet Union still shape the employees' engagement in organisational change (Crotty, 2016; Robinson & Kerr, 2009). The organisations in these countries have not always been able to change their existing practices, values and systems inherited from the Soviet Union era easily (Klůvnkov-Oravsk et al., 2009). Some studies acknowledge the problem of transforming former Soviet management institutions, because of slow adaptability, to the contemporary needs of businesses (Banaszak & Beckmann, 2008; Falaleeva & Rauschmayer, 2012; Gatzweiler & Hagedorn, 2002). At the employee level, a non-greening study in the Russian oil industry discovered that in order to learn new skills, managers in post-Soviet countries needed to break with the administrative heritage and provide the necessary conditions to initiate learning in their organisations (Dixon et al., 2007). Therefore, these challenges and boundaries between practices inherited from the Soviet Union and the modern needs of the employees may affect environmental knowledge transfer and learning. Therefore, a theory which explores the effect of a historical legacy in the context of changing practices regarding the front-line managers' role as facilitators of learning for corporate greening in a modern post-Soviet context is required.

Finally, the review of the potential theories helped the researcher to arrive to the decision to select Wenger's situated learning theory along with the concepts situated under the selected theory – 'community of practice' and 'boundary object'. In order to identify suitable theory for the study, Bryman & Bell (2015) suggest analysing academic studies which illuminate similar phenomena. **Table 2.1.** presents the overview of social learning theories which seem to be appropriate to explore complex social processes and interactions between different actors and then discusses the rationale to select situated learning and two suitable concepts to study the phenomenon.

Theoretical lenses	Main idea concerning learning	Examples of associated theorists	Studies in sustainability using the theory	Questions this theory might raise in an environmental context and post-Soviet context?
Activity theory	Cultural–historical theory that explains how people learn to perform activities. Originated as a concept with a focus on artefact-mediated and object-oriented action, moved on to explain collective human activity systems and then interacting human activity systems	Vygotsky, Leont'ev, Engeström	(Krasny & Roth, 2010)	How might we learn to modify our activities (e.g. transport, food production) to reduce adverse effects on our environments and each other?
Actor network theory	Attempts to explain both social and technological evolution partly by providing a conceptual framework to integrate human and non-human (objects) factors in social processes suggesting both have agency. One of several traditions that has led to a focus on the role of objects in learning.	Latour, Callon, Law	(Brand & Jax , 2007) (Benn & Martin, 2010) (Rice L. , 2011) (Fitzgerald, 2012) (Dwiartama & Rosin, 2014) (Hawkins, Pye, & Correia, 2017) (Brunton, Eweje, & Taskin, 2017)	Which mediating objects might enable us to interact to address environmental issues and other tensions between actors?
Adaptive management and complex adaptive systems	Focuses on learning how to effectively influence the resilience, adaptability and transformability of social–ecological systems through understanding the dynamics involved.	Gunderson, Holling, Folke	(Pelling, High, Dearing, & Smith, 2008) (Kabongo & Boiral, 2017) (Huang & Li, 2017)	What dynamics do we need to understand to be able to influence social–ecological systems?

Theoretical lenses	Main idea concerning learning	Examples of associated theorists	Studies in sustainability using the theory	Questions this theory might raise in an environmental context and post-Soviet context?
Boundary Objects	Focuses on meaning-making process of a learner and explains how information is used in different ways by different communities or social groups	(Star & Griesemer, 1989)	(Brand & Jax , 2007) (Benn & Martin, 2010) (Fitzgerald, 2012) (Garud, Gehman, & Karunakaran, 2014) (Hawkins, Pye, & Correia, 2017)	What are differences in inter-disciplinary interpretations of environmental information?
Organisational learning	Individuals learn within an organisational context and organisations learn in their own right. Organisational systems, structures, policies and memory are in focus.	Argyris, Schon, March, Olson, Senge, Brown, Duguid, Nonaka, Takeuchi	(Neale, 1997), (Aguilera-Caracuel, Hurtado-Torres, & Aragón-Correa, 2012b), (Young R. , 2010), (Roome, 1992) (Berkhout, Hertin, & Gann, 2006) (Boiral, 2002) (Remmen & Lorentzen, 2000) (Antal & Sobczak, 2004) (Burström von Malmborg, 2002) (Vare & Scott, 2007) (Wagner M. , 2008) (Petts, 1998) (Nilsson, 2005) (Halme, 2001) (Dovers, 2005) (Chia, 2017), (Neij, Heiskanen, & Strupeit, 2017) (Benn, Edwards, & Angus-Leppan, 2013)	How can we develop organisations as contexts which support individuals' and groups' environmental action?
Social constructionist	Builds on constructivist ideas but focus is on the perception that construction of the surrounding world occurs socially rather than	Papert, Gergen, Berger and Luckman	(Carmeli, Brammer, Gomes, & Tarba, 2017) (Heizmann & Liu, 2017) (Harvey & Chrisman, 1998)	How can we facilitate social construction of a sustainable society and environmental action?

Theoretical lenses	Main idea concerning learning	Examples of associated theorists	Studies in sustainability using the theory	Questions this theory might raise in an environmental context and post-Soviet context?
	individually. Social-constructivist theories and the concept of boundary objects help to understand the relationships between sustainability and people.			
Situated learning	Knowing and learning are located in processes of co-participation, i.e. in a situation rather than in heads of individuals. Use of communities of practice and boundary objects as a means of developing shared awareness, knowledge, and skills in relation to sustainability both within the professional context and across its boundary with other organisations in society.	Lave, Rogoff, Brown, Collins and Duigud, Wenger	(Fenwick, 2007) (Süsser, Döring, & Ratter, 2017) (Benn & Martin, 2010)	What environmental practices are we involved in with others and how can we improve them?
Social learning	Range of ideas from those that explain what and how social interactions contribute to individual learning to those that focus on collective learning to those that include both.	Bandura, Woodhill, Roling, Illeris, Wenger, Finger, Daniels and Walker, Wildemeersch	(Berkhout, Hertin, & Jordan, 2002) (Steyaert & Jiggins, 2007)	How can we support individual and collective action that will improve our environmental situations?

Table 2.1: summary of all theoretical perspectives which study individual level in sustainability, climate change, CSR in different contexts (Developed by author, adapted from Wenger (1998), Ison et al. (2000), Brockbank and McGill (1998), Illeris (2002), Blackmore (2005), Blackmore (2007), and Benn & Martin (2010)).

Table 2.1. presents a number of studies that contextualise individual-level actions in sustainability, climate change or CSR contexts. The approach begins with identification of studies which used the theoretical lens to analyse the data in environmental matters. The purpose of the overview is to draw out a broad range of ideas about how and where interactions between individual and other actors takes place and, in this way, to contextualise the actions of front-line-manager in environmental context in a country in transition. As a result of the study analysis, the table summarises the most relevant learning theories and models alphabetically. Along with names of authors, a brief explanation of the theory, who developed the ideas, the list of authors who used these ideas in the sustainability, climate change and CSR context, and, most importantly, what research question these learning theories may suggest if the author of this thesis might select it for this research. Thanks to this analysis, two observations could be made which helped to select situated learning as a useful theoretical lens for this study.

First, while all of the theories under review have contributed to ideas about social learning, some theories such as adaptive management and complex adaptive systems, organisational learning, and situated learning have also contributed ideas to other activities such as management or information management. This is important because the purpose of this study is to explore how front-line managers use and manage information about environmental issues in order to change or adapt new 'green' practices in chemical plants. Therefore, the study focuses on using learning processes to explore the changes associated with the process of moving from being not knowledgeable about environmental issues to perhaps being an environmental expert or a participant in the implementation corporate greening projects; in other words from peripheral to full member of a group involved in the implementation of greening projects. Situated learning, which assumes that knowing and learning are located in processes of co-participation of a particular context (Lave & Wenger, 1991), was chosen as suitable for addressing the changes in the role of front-line managers in facilitating environmental learning and the implementation of corporate greening programmes. In particular, the concept of 'communities of practice' is selected as a means for identifying multiple communities in which front-line managers are involved, and tensions deriving from different understandings about

environmental responsibility and 'green' practices across knowledge boundaries (i.e. ambiguity and complexity of environmental knowledge).

Another observation from the analysis relates to the limitation of the concept of 'communities of practice' to analyse multiple intersecting communities. Weller (2017) highlights that despite the fact that communities of practice theory is useful for studying interactions between a single community of practice, there is little empirical research to show how this might be achieved. She suggests that the boundaries between them can be a source of learning, and boundary objects can enable alignment of the incongruent practices and managers (Weller, 2017). Further research suggests an increased interest by different social learning theorists to use 'objects' in their research: activity object (Engeström & Blackler, 2005), affiliative object (Suchman, 2005), boundary object (Star & Griesemer, 1989), boundary-negotiating artefact (Lee C. , 2007), epistemic object (Cetina, 1997), intermediary object (Vinck & Jeantet, 1995), or technical object (Ewenstein & Whyte, 2009). Oswick and Robertson (2009) explain the recent increased interest of scholars in boundary objects because the concept is useful to study learning processes and practices which initiate and support change in both the societal and organisational contexts. The concept is also useful to study interactions between groups of people because the use of boundary objects may occasionally create conflicts and tensions (Bechky, 2003; Koskinen, 2005) which help to explore the potential of individuals' 'boundary crossing' activities, which then facilitate change in their organisation (Akkerman & Bakker, 2011). According to the conducted analysis, the concept of '*boundary object*' has been effectively combined with other theories such as organisational learning (Benn, Edwards, & Angus-Leppan, 2013), actor network theory (Hawkins, Pye, & Correia, 2017) and community of practice (Benn & Martin, 2010). Therefore, by selecting communities of practice and boundary objects, this study will address the gap of a limited understanding of the environmental engagement of front-line managers in a specific period of social and organisational transformation such as the transition from Soviet to post-Soviet.

In summary, situated learning, which assumes that knowing and learning are located in processes of co-participation of a particular context (Lave & Wenger, 1991), can be considered as a suitable means of studying the individual learning of front-line managers through contextualised experience and, in this way,

address the main purpose of the study. Situated learning theory shares the view that managers learn in practice, i.e. through managing a variety of situations by creating knowledge and learning simultaneously in interactions (Lave & Wenger, 1991). The situated learning theory is also useful because it critiques traditional cognitive learning theory, which is predominately used in GHRM practices research (as discussed in section 2.2.3). Situated learning scholars criticise the cognitive learning theory for viewing learning as de-contextualised and as being an individual's responsibility, which is not true in practice (Fox, 1997). In contrast, situated learning theory assumes that learning is not an individual's learning process which depends on ones' personal values, knowledge and skills (as discussed earlier in this chapter, please see pp. 33-34), but is 'historically and socially situated conceptions of erroneous action and belief' (Lave, 1993, p. 16). Therefore, this lens builds a core theory for development of the theoretical framework in this study.

Two concepts under situated learning theory are relevant for operationalisation of the research: community of practice and boundary objects. The concept of communities of practice is selected as a means of understanding the learning environment of the post-Soviet context, in which front-line managers interact with other learners. They identify the multiple communities in which front-line managers are involved, and the misunderstandings or miscommunication about environmental responsibility deriving from knowledge boundaries which might be also linked to constructed identities. However, the concept does not sufficiently explain how managers fix the misunderstandings and re-engage the employees in 'green' practices. Therefore, another concept, that of boundary objects, is proposed. Osrick and Robertson (2009) explain that the concept is useful for studying learning processes and practices which initiate and support change in both the societal and organisational contexts. The 'boundary objects' concept is also useful for studying interaction between groups of people because their use may occasionally create some conflicts and tensions (Bechky, 2003; Koskinen, 2005) which help in the exploration of the potential of individuals' 'boundary crossing' activities, which facilitate change in their organisation (Akkerman & Bakker, 2011). According to the conducted analysis, the concept of the boundary object has been effectively combined with other theories, such as in organisational learning (Benn et al., 2013), actor network theory (Hawkins et al., 2017) or community of practice (Benn & Martin, 2010). However, boundary

objects have never been studied in the post-Soviet context. Therefore, by selecting communities of practice and boundary objects, this theoretical framework will help to provide a context-rich account of front-line managers' experiences regarding their roles as facilitators of learning for corporate greening in a specific period of social transition, such as the transition from Soviet to post-Soviet. How might these concepts be operationalised in order to understand environmental engagement of front-line managers in a specific period of social and organisational transition, is discussed next.

2.3.2. Theoretical framework

This section focuses on the theoretical framework that helps to answer the research question - how do front-line managers in a post-Soviet context facilitate learning for corporate greening in their organisations? The research question is explored by using the situated learning theory (Wenger & Lave, 1991), which assumes a participatory approach to learning in contextualised situations. The research operationalises two concepts – community of practice and boundary objects – which lead to organising the analysis in three steps.

First, the concept 'communities of practice' is used to identify 'green' communities of practice in the studied companies, and how learning occurs in them. By breaking down the learning processes and analysing them in terms of meaning, community, practice, identity and boundaries (Wenger, 1998), the concept of community of practice helps to describe the processes by which employees in a post-Soviet context are drawn into knowledge communities on environmental protection. The research on communities of practice in 'greening' literature has identified what a learning community is, how they are constituted, and how people transition to different states of knowing. However, what is less known in 'communities of practice' concerns boundaries which carry potential for learning. In this theoretical framework boundaries are places of potential misunderstanding and confusion arising from the different regimes of competence: commitments, values, repertoires, and perspectives (Wenger, 1998). For example, socio-historical influences between the Soviet and post-Soviet eras - social, legislative, and economic changes - in Belarus might inevitably create boundaries, i.e. tensions and conflicts between commitments, values, repertoires, and perspectives of those who have been participating in 'green' practices and those who have not. It also argued that adding the concept 'boundary object' enriches

this part of the concept of 'communities of practice' in order to unpack the practical issues of the front-line managers associated with facilitating learning for corporate greening in a country affected by these socio-historical influences between the Soviet and post-Soviet eras (as discussed in section 2.2.4).

Second, the concept of 'boundary objects' is used to study learning which takes place on the boundaries identified in the first step. The general literature on boundary objects identifies physical types of boundary objects, such as tables, tools that may create a negotiation field among community members, etc. (Briers & Chua, 2001; Carlile, 2002; Levina & Vaast, 2005; Star & Griesemer, 1989). In contrast, the sustainability learning literature identifies more conceptual or abstract boundary objects because the meaning of the terms 'sustainability' or 'greening' is ambiguous (Brand & Jax, 2007).⁶ Ambiguity around the term 'environmental protection' – created by social, legislative and economic change in the Belarusian socio-historical context – may affect the pattern of shared understanding and learning for environmental protection. Capturing a 'shared focus' across boundaries of practice in 'green' communities of practice is considered crucial to the successful implementation of green business practices in organisations (Fenwick, 2007; Hawkins et al., 2017). Boundary objects encourage the development of a common language that can be shared across communities of practices (Wenger, 2000). The development of shared understanding of words and discourses around a particular boundary object which members of communities use regularly may bridge different interpretations of 'greening' and unpack the causes for non-participation of some actors in 'green' activities. In this study, three abstract boundary objects - 'homeland', 'law' and 'market' – were found to be specific to the post-Soviet context and instrumental in participants practices directed at facilitating environmental learning. While the existing literature on corporate greening includes some studies which identify relevant boundary objects and the processes around them (Howkins et al., 2017, Ben and Martin, 2010), there is little evidence on how

⁶ For example, Tomblin (2009) focuses on 'ecological restoration' as a boundary object which is used to negotiate meaning between business actors involved in environmental management system. Hawkins, et al. (2017) demonstrate empirical vignette around a boundary object 'carbon reduction' which illustrates the agency of the boundary object which enable that different project teams start to communicate and discuss meaning of the term.

practices are developed to foster environmental learning processes and manage learning across boundaries.

Finally, using modes of belonging, engagement, imagination, and alignment, drawn from Wenger's work (2000), boundary practices are created by front-line managers to achieve levels of participation of existing and new members within and across the 'green' communities of practice. In this context, this theoretical framework assumes that front-line managers act as boundary spanners to facilitate learning in their organisation through boundary spanning activities. According to Wenger (2000) learning facilitation in communities occurs through connecting the members through new practices with the help of 'community coordinators' (p.231) or people who work across the boundaries (Wenger, 1998). In this study, the front-line managers are seen as boundary spanning agents because they formally and informally interact with members of communities of practice who are located inside and outside their organisations. Front-line managers are found to employ boundary spanning practices in order to achieve a mood of belonging (Wenger, 1998) in their four 'green' communities of practice and reduce tensions between participants and non-participants.

The remainder of this section is structured as follows. Section 2.3.2.1. discusses the operationalisation of the community of practice concept. Section 2.3.2.2 elaborates on how learning occurs around boundary objects. Section 2.3.2.3. presents the concept of 'modes of belonging' as a good way to address the research question.

2.3.2.1. Communities of practice

This sub-section demonstrates the operationalisation of the concept of 'communities of practice' to analyse how learning for corporate greening occurs in a post-Soviet context. Learning for corporate greening in this study is understood as a process in which employees deploy and extend their environmental knowledge, values, abilities and skills through their everyday practices and social interactions in workplace settings. The section first explains how the concept is located within the situated learning theory. Then, it presents a two-step approach to explaining how the concept of community of practice is operationalised in order to understand how employees learn corporate greening in a transition economy by: (1) presenting Wenger's (1998) original dimensions

of learning, which involve four components – meaning, practice, community and identity; (2) after reviewing recent literature on learning in communities of practice, drawing attention to the necessity of adding the component ‘boundary’, which helps to break down the ambiguous learning processes in the post-Soviet context. Finally, the sub-section concludes that the research on boundaries draws attention to the different types and levels of their complexity which leads to an interpretive approach to learning across boundaries. Therefore, the use of ‘boundary objects’ is recommended for this study to explore the learning resulting from the boundaries.

Before moving on to the operationalisation of a ‘community of practice’ concept in this study, it is important to clarify how the concept is located within situated learning theory. Fox (1997) explains that situated learning theory focuses on studying learning processes which occur in contextualised situations and through which people at work learn to manage those situations. Therefore, situated learning theory concerns *‘the nature of learning as a complex set of relations among context, text, and decontextualized, and re-contextualised knowledge’* (Fox, 1997, p.743). Wenger (1991) views learning as socially constructed and context embedded, and which takes place in practice. Thus, situated learning theory regards context as emergent in a particular situation necessary for social learning, as Lave (1993) explained:

Situations are constructed as people organize themselves to attend to and give meaning to figural concerns against the ground of ongoing social interaction. Silence, erasure, and the construction of boundaries, and collusion are constitutive here. (Lave, 1993, p. 19)

According to Lave (1993) knowledge arises in the social process between people in communities of practice, which is generated through the interpretations made by the members in situations emerging from their actions. A community of practice is defined as a *‘set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping communities of practice’* (Lave & Wenger, 1991, p. 98). The concept of community of practice, according to Lave and Wenger (1991), explains how new members of a group are introduced to knowledge and practices gradually, to eventually become a full member of the community of practice. The core idea of the concept is that new

members move from peripheral participation to becoming a fully legitimate member of the community. During the learning process, low risk is attached to initial mistakes, misunderstandings, and the failure of the peripheral participant is acceptable. After the peripheral member becomes a full member, he/she can then draw others in, via peripheral participation. In this way, the community of practice can be maintained. Therefore, the community of practice is a valuable concept to study the socio-historical context of the post-Soviet country, i.e. Belarus. Learning in this context can be investigated through interpretations of front-line managers who explain how socio-historical context shapes the learning environment of their communities of practice.

Next, a two-step approach is used to develop concepts that can help operationalise the first objective of this study - to explain how learning for corporate greening occurs in the three chemical plants in Belarus. First, the four community of practice dimensions (Wenger, 1998) - meaning, identity, practice and community - are used to achieve a rich description of the learning environment in the chemical plants in Belarus. Second, after reviewing studies which use these dimensions, the challenges in the process of learning the community members experience are identified (Wenger, 2000). Therefore, the analytical framework is extended by a fifth component - boundaries - which is vital for this study. These two steps are described below.

In their seminal work, Lave and Wenger (1991) assumed that communities of practice exist everywhere, in every aspect of human life such as work, school, home, and hobbies. However, not every group which shares the same area of work could be a community of practice (Wenger, 1998). According to Wenger (1998), communities of practice emerge spontaneously from the desire to share a concern or passion for something arises when members realise they can learn how to do it better through interacting with each other, regularly. According to Wenger's definition, the learning process in the community of practice involves four components of learning: meaning, identity, practice and community (Figure 2.1.).

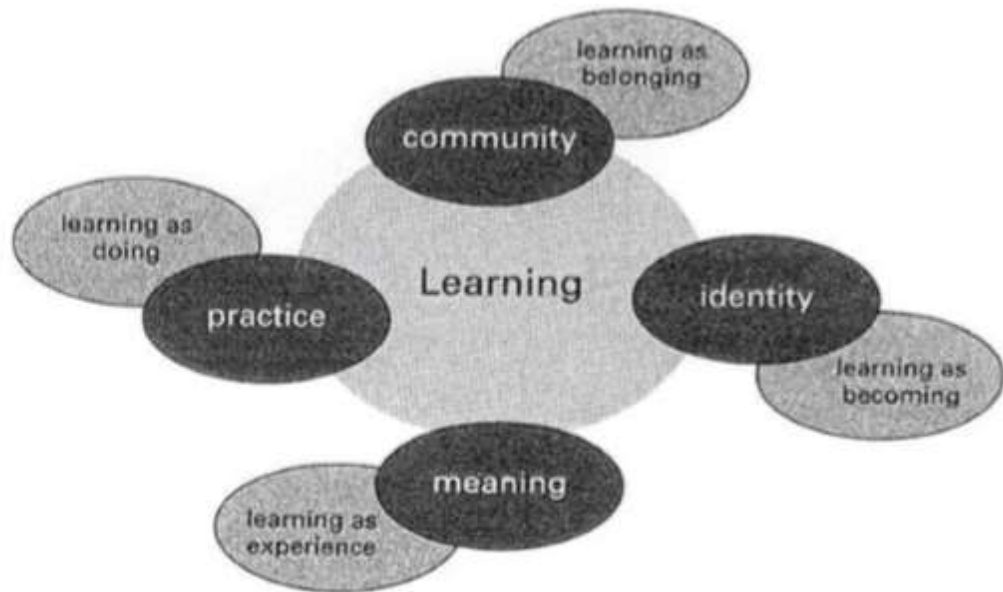


Figure 2.1: Components of learning in community of practice
(Source: Wenger, 1998)

Figure 2.1. presents a later concept of community of practice developed by Wenger in 1998. The concept is rooted in the earlier work of several authors such as Lave, 1988, Bourdieu (1977), Giddens (1984), Foucault (1980) and Vygotsky (1978) who develop accounts of the social nature of human learning (Wenger, 2010). In particular, Wenger builds his work on Lave's (1988) views that learning as a social system does not only happen in the laboratory but moves into the domain of everyday life. Lave introduces the term 'meaningful learning' which happens through engagement of learners in social contexts as a dual process of meaning making: (a) on the one hand, learners engage directly in activities, conversations, reflections, and other forms of personal participation in social life; (b) on the other hand, they produce physical and conceptual artifacts - words, tools, concepts, methods, stories, documents, links to resources, and other forms of reification - that reflect our shared experience and around which the members of community of practice organise their participation. Therefore, meaningful learning is central to Wenger's learning concept in social contexts and requires interplay of several components – meaning, practice, community, and identity. By bringing together these constructs Wenger considers meaningful learning as development of identity and practices through participation in the community with the aim to create shared meaning among participants. Each component is described below.

- (1) *Meaning*: Wenger (1998) views meaning as the outcome from learning through experience, which is configured through the process of moving from peripheral to full participant in a social practice. Through this process, people talk about their abilities or changing their abilities to experience the world as meaningful. Therefore, Wenger (1998) highlights the importance of social interactions by community members which leads to the creation of shared meaning on issues or problems. Mutual engagement plays a crucial role in communities of practice and represents a foundation for a well-functioning community.

- (2) *Practice*: “*practices are thus the property of a kind of community created over time by the sustained pursuit of a shared enterprise*” (Wenger, 1998, p. 45). Wenger (1998) views practices in a community of practice not only as actions, but everything that helps members to create meaning through ‘learning as doing’. In other words, practice occurs through doing something together in the community of practice, for example producing ‘*a set frameworks, ideas, tools, information, styles, language, stories, and documents*’ (Wenger et al., 2002, p. 29). Consequently, practice is constituted through ideas, tools, language about shared historical and social resources (a shared repertoire) that sustain mutual engagement in action that members use to negotiate meaning and facilitate learning within the community (Wenger, 1998).

- (3) *Community*: Wenger (1998) sees community as a way of ‘learning as belonging’ (the concept ‘moods of belonging’ will be discussed in the section 2.3.2.3.), to describe the emergent relationships among community members around a practice. Wenger (1998) emphasises that building relationships enables the community members to learn from each other. The ‘learning as belonging’ occurs through creating a feeling that engaging in joint activities is worth pursuing. Wenger speaks about the social configurations in which a community is defined, and how participation in the community is valuable for each member and recognisable as competence.

- (4) *Identity*: The concept of identity is a central element of the notion of community of practice because it emphasises interactional elements of

meaningful learning (Handley, Clark, Fincham, & Sturdy, 2007). Building on the work of Lave (1988), identity is characterised by Wenger (1998) as '*a constant becoming*' that defines who we are by: 'the ways we participate and reify ourselves; our community membership; our learning trajectories (where we have been and where we are going); reconciling our membership in a number of communities into one identity; and negotiating local ways of belonging with broader, more global discourse communities' (p. 149).

In this way, Wenger sees identity and practice as 'mirror images of each other' (p. 149) so that one 'inherits the texture' of the other (p. 162). This notion of identity is defined just as much by the practices learners engage in (participation) as the practices they do not engage in (nonparticipation). Thus, the component explains how learning changes who we are and creates personal histories of becoming in the context of our communities (Wenger, 1998). Wenger (1998) relates development of identity as a process of 'learning as becoming' to a personal understanding of how to behave in contrast to what to do. For example, front-line managers as facilitators may adopt new roles while experiencing the introduction of new 'green' practices or any changes in the environment, e.g. changes of legislation or societal changes. In this context, learning involves an identity change on the way to become a more knowledgeable practitioner in the field of environmental responsibility. In his later work, Wenger (2010) argued that the process of identity development creates a tension between competence and experience of learners, which adds a dimension of dynamism and unpredictability to the identity construction. Wenger (1998, p. 160) suggests that one of the most significant challenges faced by learners who move from one community of practice (or space for learning) to another is the reconciliation of "forms of accountability" from those communities into one nexus. Identities are formed and transformed through this process of reconciliation.

Consequently, production of practice may differ as each member struggles to find a place in the community. Individuals can straddle different boundaries and coordinate the multiple perspectives they have been exposed to over the course of their education and subsequent work

experiences will affect their identities as practitioners in the future. Any negotiation process between different perspectives is often only possible when communities interact with and explore other perspectives beyond their boundaries.

As will be discussed later in this chapter, Wenger defines boundaries as the tension between the competence and experience that causes the emerging collaboration which impacts learning between different communities (Wenger 2000, p. 233). At the same time, the boundaries hold communities of practice together because they are a source of difference between communities and/or a cause of difficulties in relationships between communities (Wenger, 2000). Therefore, Wenger views the learning process across boundaries as establishing and maintaining the community's boundaries by ensuring mutual engagement of members in a joint enterprise and the use of a shared repertoire of routines, symbols, tools and other resources. Thus, boundary objects as part of the identity development is discussed later in this section.

Research on community of practice uses the dimensions of learning very often to analyse how learning occurs. For example, Iverson and McPhee (2008) investigate team level processes of learning through practices of volunteers recruited in times of disaster within two communities of practice in separate organisations. They found important communicative performing processes between volunteers in both groups, in which their learning by doing takes different forms, from a leading role to a very peripheral one. The study concludes that communities of practice cannot be 'set up' as formal teams but must be nurtured, rewarded, and developed by generating a sense of togetherness (Iverson & McPhee, 2008). However, other research highlights how the community of practice is less than a harmonious community, and can experience difficulties in terms of limited knowledge or lack of skills to maintain the community. For example, Pyrko et al. (2017) found in their study in the National Health Service (NHS) in the UK that mutual engagement was not possible without thinking together about the same problems that could sustain a shared practice. The community needed to work on defining a problem before they could develop the practice (Pyrko et al., 2017). Swan et al. (2002) focus on an analysis of communities of practice in a manufacturing company that works on a product for

a new cancer treatment. The study found that these managers faced challenges of limited organisational support to mobilise shared practices among medical experts. Therefore, developing additional practices which engage 'powerful professionals' was necessary (Swan et al., 2002). Thus, the research shows that a community of practice does not always offer a straightforward learning process. The tensions in the relationships between different members are part of a learning environment. As environmental responsibility is a new area of responsibility for employees in the post-Soviet context, compared to Soviet times, the learning for corporate greening in the post-Soviet context may involve boundaries which result from managing challenges between opportunities for learning new market-based approaches to corporate greening and the practices inherited from the Soviet Union. Therefore, it is necessary to include the component 'boundary' in the analysis of the learning process to capture adequately the learning environment of front-line managers in their communities of practice in a post-Soviet context.

In order to capture challenges faced by the members in the communities of practice during their identity building which is defined by a shared domain of interest and includes both participation and non-participation as well as inclusion and exclusion of community members, Wenger (1998, 2000) introduced the concept of 'boundaries', as follows.

(5) *Boundaries - 'refer to discontinuities, to lines of distinctions between inside/outside, membership and non-membership, inclusion and exclusion' (Wenger, 1998, p. 120). Boundaries in communities of practice are '...rather fluid. They arise from different enterprises; different ways of engaging with one another; different histories, repertoires, ways of communicating and capabilities' (Wenger, 2000, p. 232).*

In this study, it is important to look at the emerged boundaries between members of the communities and former members (current non-members of communities) who decided to discontinue their interactions for difference reasons. Some reasons may be routed in changes in shared histories of learning between Soviet and post-Soviet times. These changes may create boundaries between those who have been participating in communities of practice and others who lack knowledge, skills or have lost interest in engaging with greening activities.

Therefore, by breaking down the learning processes and analysing these in terms of meaning, community, practice, identity, and boundary (Wenger, 1998, 2000), the 'community of practice' concept offers a space for detailed investigation of how learning for corporate greening in Belarusian chemical plants occurs, including positive aspects and challenges of such learning.

Finally, the research on boundaries in communities of practice draws attention to the complexity of boundaries, and how the practice of learning emerges across boundaries. However, the boundaries have so far been investigated in an ahistorical fashion, without involving socio-historical influences (Pyrko et al., 2017; Wenger, 2010; Roberts, 2006), whereas learning represents anchoring history in social practice (Wenger, 2010). Therefore, using boundary objects to explore learning across boundaries within the socio-historical setting is suggested for this study.

Earlier research has mostly studied learning within boundaries of practices, focusing on particular groups of people or highlighting the complexity of the boundaries. Carlile (2004) studied an international corporation from the automotive industry, with headquarters in Italy, called Beta Motors and identified three properties of knowledge which act as sources of complexity for boundaries: differences between specialisation of knowledge; dependence, in which the accomplishment of a task requires the absorption of the knowledge of other members of the community; and novelty, which relates to the existing knowledge before assimilating or developing new knowledge. Carlile (2004) also introduces levels of boundary complexity which are associated with levels of novelty – syntactic (low level of novelty), semantic, and pragmatic (high level of novelty)⁷. The researcher explains that the knowledge complexity results from the specialisation of engineering knowledge which is more profound than just the role or identity of the members of the community. Carlile (2004) gives examples of creating complex product or services such as producing engines. Several specialized groups are involved which contribute to the engine production by integrating knowledge from other domains such as climate control or car safety requirements. Sharing specialised, i.e. engineering knowledge creates

⁷ Carlile (2004) explains that the syntactic boundary is associated with a low level of novelty. The semantic boundary appears as novelty increases. It becomes necessary to interpret the differences and dependencies of knowledge. The pragmatic boundary is the most complex, which arises when novelty is high, and actors need to negotiate changes in their knowledge and trade-offs between interests.

differences between actors in levels of their experiences, terminologies, tools, and incentives that are unique to each specialised domain. These differences according to Carlile requires different mechanisms to facilitate the communication and learning between different actors that go beyond learning in the role or identity. In order to balance the gap, the group attempts to create spaces to share and assess each other's knowledge by developing learning practices such as transferring, translating and transforming. Bechky's (2003) and Garrety et al.'s, (2004) significant empirical work suggested that boundaries are generated between different actors on their understanding of the product or the production process. Therefore, the boundaries are imbalances in their communication rooted in different assumptions, interests, skills, and formal and tacit knowledge of the different groups involved in the community.

Recent research extends the view from project or production teams to a larger number of participants involved in communities of practice, which affects the process of development of learning practices to overcome knowledge boundaries. Studies suggest that boundaries can be generated between different professional groups, such as researchers, across values, agendas and perspectives between members of academic communities of practice (Wenger-Trayner & Wenger-Trayner, 2014) or multiple actors in the MNC (Tippmann et al., 2017), which leads to the development of creative problem-solving outcomes. In contrast, other studies have not identified that community members learn to overcome knowledge boundaries. Olsen et al. (2018) studied knowledge boundaries resulting from the learning patterns of experienced members of a community and novices in hospitals in the UK. The study found that the boundaries generated difficulties related to learning through an agreed set of meanings, skilled practices, and legitimate judgments, which slowed down the learning of peripheral members. In a similar vein, Filstad et al. (2018) identified the knowledge boundaries in a Norwegian public sector organisation when participants used a public social media tool for knowledge-sharing. However, the study did not find any evidence that participants had demonstrated learning practices used to shared meaning on how to use the tool, taking the perspectives of others on how to share knowledge to overcome these knowledge boundaries. The researchers argue that overcoming boundaries on the pragmatic level (with a high level of novelty) is problematic, suggesting more research is needed to

understand the slow progress of developing learning practices which may be rooted in other influences.

Similarly, studies on the sustainability of learning acknowledge, in their limitation, that the notion of a community of practice may manifest itself differently as societal contexts evolve (Nursey-Bray et al., 2016; Orsato et al, 2018). Weller (2017) highlights how, despite the fact that communities of practice are useful for studying the sustainability of learning within a single community of practice, there is little empirical research to show how this might be achieved. The boundaries between community of practice can be a source of learning, and boundary objects can be a source for a better understanding of such learning, in which managers develop new practices (Weller, 2017). Scholars on learning for the corporate greening call for more attention to more studies which consider historical influences of the communities (Pyrko et al., 2017; Wenger, 2010; Roberts, 2006). Therefore, using boundary objects to explore learning across boundaries within the socio-historical setting is suggested for this study.

2.3.2.2. Boundary objects

In the following section, the concept of boundary objects is elaborated upon, it is explained how and why the concept resonates with the situated learning theory, and proposed how the concept is operationalised to explore learning for corporate greening that takes place around the boundary objects in the three Belarussian companies, which is the second objective of this study. This sub-section is structured in three parts. First, the concept 'boundary objects' is shown as a useful means of translation, linking different identities, histories and practices (Wenger, 1998, p. 112), which bridges individual learning practices with community practices (Lave & Wenger, 1991). Second, the literature on types of boundary objects is reviewed. Wenger (2000, p. 236) presents three categories of boundary objects, including artifacts, i.e. tools; discourses such as a common language that can be shared across communities of practices, and processes such as shared processes, routines, procedures that facilitate coordination between communities of practice. The 'greening' literature shows that the boundary objects on greening are rather abstract because the meaning of the term 'environmental sustainability' is ambiguous. Therefore, the study adopts Wenger's (2000) definition of boundary objects as a discourse, i.e. as common language that is shared across boundaries of 'green' communities of practice

which can potentially enable the generation of new environmental knowledge as well as a shared understanding about 'greening' constructed by post-Soviet socio-historical influences. Finally, different learning mechanisms that are generated by interaction across boundary objects are explained. It is argued that in the majority of studies in the 'greening' literature, there is limited knowledge of the learning mechanism. Most of the literature examines boundary objects that enable negotiation between different groups of learners. There is limited knowledge about the human agency in the process of constructing learning practices. Therefore, in order to answer the main question, it is proposed that the role of boundary spanning role be examined.

First, it is important to explain how the concept of boundary objects is linked to the situated learning theory. The situated learning theory offers a suitable means of studying community learning, which combines collective and individual aspects in a social history of learning (Wenger, 1998; Wenger, 2010). On the collective level, it studies how learners achieve mastery within a community through sharing experiences and expectations, by which they recognise membership (Wenger, 2010). On the individual level, the theory views learning processes through the socialisation of individuals within a community (Wenger, 2010). Research acknowledges a methodological difficulty in bridging these two perspectives of learning. For example, Akkerman and Bakker (2011) draw attention to the difficulty of taking not only a systemic or macro-perspective approach, which defines the sociocultural or historical learning of a community, but also a situated or micro-perspective approach, which explains who and how experiences of a learner in a particular interaction or action is perceived. Also, Hibbert et al. (2016) point out that insufficient attention has been paid to the nature of the learning practices of individuals that have been developed to allow the facilitation of the learning process in the community or between communities. Therefore, the concept of boundary objects is a useful means of translation, linking different identities, histories and practices (Wenger, 1998, pp. 112) which bridge individual learning practices with community practice (Lave & Wenger, 1991). The concept is also seen as 'an analytic concept of those objects which both inhabit several intersecting social worlds and satisfy the informational requirements of each of them' (Star & Griesemer, 1989, p. 393). Boundary objects are used to refer to ongoing, two-sided actions and interactions between contexts (Akkerman &

Bakker, 2011). These actions and interactions across sites and boundaries affect not only the individual but also the different social practices at the community level, which leads to different types of learning (Holford, 2016). Therefore, the concept of the boundary object is a suitable concept for this study in order to identify how to practice learning of front-line managers across boundaries in Belarusian plants occurs, and which builds a window for the development of another practice for learning facilitation.

Going further, this study investigates how socio-historical influences shape the managerial practices of front-line managers. Therefore, identifying their nature helps to describe the boundary objects across boundaries which are constructed by socio-historical influences. Wenger (2000, p. 236) presents three categories of boundary objects, including: artefacts, such tools, documents, models shared by communities of practice; discourses, such as a common language that can be shared across communities of practices; and processes, such as shared processes, routines, procedures that facilitate coordination between communities of practice. In order to study objects constructed by socio-historical influences, it is helpful to adopt the definition of the boundary object as discourse, which is defined as *'the experience of a common language that allows people to communicate and negotiate meanings across boundaries'* (Wenger, 2000, p. 236). The reason for the selection of this category is based on the fact that research on sustainability learning uses similar more conceptual or abstract boundary objects than concrete objects; even the meaning of the term sustainability itself is in itself ambiguous (Brand & Jax , 2007). For example, Tomblin (2009) focuses on 'ecological restoration' as a boundary object, which is used to negotiate meaning between business actors involved in EMSs. Hawkins et al. (2017) demonstrate an empirical vignette constructed around a boundary object 'carbon reduction' which illustrates the learning process in different project teams through discussing the meaning of the term. Other studies look at a discourse boundary object such as 'Clean Coal' used in communication between politicians and activists' groups in the United States (Fitzgerald, 2012). Döring & Ratter (2015) wrote on the boundary object around the expression 'Heimat' (in German: *homeland*), representing an area of conservation land in North Frisia (Germany), which was used between different village communities. The findings of the study suggest that the term 'Heimat' generated different meanings for

stakeholders depending on their age and profession (Döring & Ratter, 2015). All these studies emphasise the vague and ambiguous nature of boundary objects, which generate multiple interpretations among learners. In this study, 'environmental responsibility' is a new area for Belarusian front-line managers in comparison to the work area during Soviet times, and can be a boundary maker. In order to interpret the meaning of 'environmental responsibility', Belarusian front-line managers employ boundary objects as discourse around societal, legal and market changes embedded in the interpretations of the employees of the companies in Belarus. Therefore, the choice to study boundary objects as discourses for this study seems to be appropriate.

Finally, as this research is interested in the way in which front-line managers in the Belarusian context develop their individual practices to facilitate collective learning for corporate greening in their organisations, learning across discourse-boundary objects may involve managers' interpretations of their individual actions as well as collectively recognised action. In other words, we must analyse the way in which learning across the boundary objects in Belarusian organisations captures the development of the situations that the front-line managers in this study have experienced at work, before and after the introduction of 'environmental responsibility' in their organisations. This being important considering the role of front-line managers within the organisation is relevant for their interpretation of the developments. The job of front-line managers in Belarusian government-controlled companies often requires establishing new relationships with government agencies, clients and external suppliers. To initiate new environmental projects, or to solve technical and environmental issues, the learning process involves discussion and negotiation with different individuals, teams, departments and organisations (representatives of external organisations). In order to achieve acceptable results in their communication, the front-line managers require practical expertise on environmental issues and tacit skills which have been assimilated in the communities over time. Tacit knowledge and skills of front-line managers are essential in their identity work and helping other non-participants to identify with the community. According to Wenger (2010) often the tacit and informal character of identity work forms the basis for power in communities of practice which may have horizontal, mutual, and negotiated nature. This knowledge and experience of the low-tier managers are

passed on to novices in the communities. With this in mind, the language and communication in the workplace process play a fundamental role in producing learning (Gherardi, 2009; Gherardi et al., 1998). Antonacopoulou (2006) suggested that language is a valuable source of discursive discourse that influences individual and organisational learning and actions. Here Antonacopoulou refers to discourse as practices or, more specifically, sets of practices which are used by participants of communities of practice to communicate to acquire knowledge. The term 'discourses' describes those practices of knowledge formation by focusing on how specific knowledges ('discourses') operate and the work front-line managers do, i.e. write, speak, motivate, negotiate, explain. Therefore, this approach is useful for this study because it allows us to show how front-line managers attribute meaning and importance to particular environmental aspects in their daily professional life, and how these interpretations are reflected in their praxis.

In sustainability learning research, there is much evidence about learning around material boundary objects (Hawkins et al., 2017; Hultman & Corvellec, 2012; Wagner et al., 2010). There is only one study, by Benn and Martin (2010), which has been identified that studies learning around discourses-boundary objects on the national level in a country in transition - China. Benn and Martin (2010) investigated communities of practice across multiple intersecting communities in the area of hydrological and agricultural science research which enable individual farmers to participate in learning process. The learning process in the communities of practice was aimed at capacity-building farmers achieving legitimation from government and inter-government levels for small-scale infrastructure. The researchers explored how boundary objects about sustainability in the communities were leveraged by the transfer of knowledge between academics in universities and managers in other sectors of society, including farmers. As a result, the learning process was made possible through structural and visionary mechanisms in which academics and their students were mixed with the farmers working in the rice fields so that the processes of knowledge creation and transfer are closely linked. The findings of the study suggest that leadership of university staff provided a necessary steering medium for change between high levels of government and the agricultural sector (Benn & Martin, 2010). Importantly for this study, the Benn & Martin's (2010) study found

how two discursive boundary objects – structural and visionary - which the research participants of the study found necessary for facilitating learning process on sustainability. Below the description of each boundary object is provided along with the relevance to this study:

(1) *structural boundary objects* - structural objects originate with Yakura (2002) describe coordinating work, for example timelines, or shared infrastructure around which groups organise. In the study of Benn and Martin (2010), learning around structural boundary object occurs by providing an infrastructure for discussion engagement and knowledge transfer among community members, for example formal and informal forums for knowledge dissemination from the academic stakeholders to the farmers. The language the farmer-learners used to describe their experiences suggested that the social infrastructure to facilitate technology transfer established by the academics provided a venue for the ongoing exchange of communication. In this study, law and changes in legal requirements build an infrastructure for formal communication, knowledge exchange and learning for greening.

(2) *visionary boundary objects* – is a conceptual object which was introduced by Briers and Chua (2001) as an emotive response from a range of people, and is regarded as a ‘high level of legitimacy’ (p. 242), which it is difficult to argue against. In the sustainability learning literature, the visionary boundary object has been introduced by Benn and Martin (2010). In their study, Benn and Martin (2010) use the visionary boundary object ‘sustainable rice production’ when the learners speak about the conceptual relationship between sustainable rice production and water efficiency, which is a visionary concept. The learners in Chinese cross-country communities of practices use informal discussions with the academics, as well as onsite teaching, to focus their aspirations on holistic sustainability concerns, such as sustainable rice production, which is dependent on the efficient use of water. Therefore, the learning processes around the visionary boundary objects were focused on generating knowledge around social, environmental, and economic aspects of water management. Building on the notion of a concept, the visionary boundary object in the current study of front-line managers in Belarus establishes

the conceptual relationship between 'green' chemical production and patriotism for the homeland which is a visionary concept. The learning processes around visionary boundary object 'Rodina' (homeland) focus on discussing sustainable chemical production by using facilitation practices such as motivating staff to engage in a formal discussion around corporate greening.

In this way, learning occurred through different interpretations around visionary and structural boundary objects, which brought the meaning to the communities. Despite the usefulness of the findings of Benn and Martin's (2010) study, the limitation of the study may lie in the educational purpose of the farmers by the Chinese university. The type of learning might be different if the communities of practice are placed within a market-based relationship. In this study, the front-line managers of the government-controlled organisations are involved in market-related interactions, such as the introduction of new ISO certificates, the development of new 'green' products, or the reduction of harmful substances in order to satisfy the clients.

Therefore, in order to address the potential learning impulses of Belarusian front-line managers, an additional boundary object is introduced:

(3) *market-related boundary object* - underlies the analytical properties of learning of members of a community of practice about competitors, markets and demand-supply relationships in relation to environmental issues. To implement corporate greening activities, organisations introduce environmental responsibilities into employees' task and role requirements (Ones & Dilchert, 2012). In Belarus front-line managers have a formal responsibility as commissioners for environmental protection (to be explored in the methodology chapter). Consequently, they are involved in calculations and discussion about the introduction of environmental projects and problem-solving. The learning may occur through discussions and meetings on how to balance environmental responsibility and the market position of their company, which is a new skill for front-line managers who received their formal education as chemical engineers during Soviet times. The language they might use to design the process for the price agreement or customer specifications for an environmentally-

friendly product or to build a convincing argument for the introduction of necessary equipment for the reduction of hazardous waste may need to be learned.

Thus, in this study, the learning of three boundary objects is explored: structural, visionary and market-related boundary objects. The interpretations of participants might suggest positive as well as negative experiences, which generates a window for the facilitation of collective learning. Therefore, it is important to explore how front-line managers in Belarus use boundary objects across boundaries of the communities of practice and generate practices for facilitating learning for corporate greening.

2.3.2.3. Facilitating practices as boundary spanning activities

This last subsection proposes the approach which helps to analyse how front-line managers in Belarus seek to facilitate learning for corporate greening in their 'green' communities. In order to respond to the final objective of this research, the section first reviews the research on the role of human agency in facilitating organisational learning, and establishes the link to the community of practice. It argues that the literature on the community of practice draws attention to the significance of brokers and boundary spanners in constructing new practices to assist learning on the organisational level. Second, the literature on how new practices are created in which the human agency places a crucial role will be reviewed. It suggests that the practices are created through interactions of boundary spanning agents with other learners: (1) across knowledge boundaries; (2) across boundary objects. However, the empirical research is mainly conducted in teams and organisations with flat hierarchies. The existing research does not address the challenges of a post-Soviet context, in which front-line managers learn and facilitate learning in highly hierarchical organisations. They also interact with the communities' members across the country, where a sense of belonging refers not primarily to the interests of their organisations, as is the case in capitalist ideology, but rather to the interests of national development, which is coloured by post-Belarusian State ideology. Therefore, as a final step, a Wenger's mood for engagement to operationalise facilitating new environmental practices in post-Soviet context is proposed, which includes an additional three vital concepts – engagement, imagination and alignment – which

are necessary for social learning in 'green' community of practice to achieve a sense of belonging by creating boundary practices.

First, as this study focuses on front-line managers in Belarussian plants, it is important to identify the extent to which human agency is regarded as important in facilitating learning processes for corporate greening in their organisations. The literature draws attention to an important link between human agency and learning facilitation in the organisation as the product of the reflection of individuals upon experience which influences the overall learning in an organisation (Armitage et al., 2008; Boudreau & Robey, 2005; Fenwick, 2008). Jones (2006) found that change agents, when introducing an IT system in an automotive company, are particularly important because they reflect on their own practices in relation to organisational practice. In his study, the change agents as facilitators demonstrate their ability to reflect by activating a number of 'social integration mechanisms', such as regular meetings, which encourage knowledge-sharing between functions and managerial levels. In this way, the agents assist others in recognising the benefits of adopting new ways of working. Thus, the literature draws attention to the significance of the nature of the reflection, and the quality of the experience which influences the way that individuals decide to assist the organisational learning, which establishes the link to the social learning in communities or practice.

The literature on the communities of practice has emphasised that learning facilitation in communities occurs through connecting the members through new practices with the help of 'community coordinators' (Wenger, 2000, p.231) or people who work across the boundaries (Wenger, 1998). Wenger (2000) uses the term '*brokering across communities of practice*', which involves 'connections provided by people who can introduce elements of practice into another' (p.105). Here, the researcher distinguishes between four forms of brokering: (1) boundary spanners, who take care of one specific boundary over time; (2) roamers, who go from place to place and create connections for knowledge transfer; (3) outposts are the people who bring back news from the forefront and explore new territories; and, finally, (4) pairs do brokering through a personal relationship between two people from different communities, and it is the relationship which acts as a brokering device (pp.235-236). Although Wenger (2000) distinguishes four forms of brokering, the literature focuses mainly on boundary-spanning agents. Earlier

research points out that boundary spanners work rather on internal activities rather than go beyond organisational boundaries (Ancona & Caldwell, 1992; Tushman & Scanlan, 1981). Later research identifies that boundary spanners have not only an internal but also an external focus in facilitating the creation and maintenance of inter-organisational relations (Bryan, 2006; Levina & Vaast, 2005; Perrone et al., 2003; Richter et al., 2006; Sturdy & Wright, 2011). Thus, Bryan (2006) defines boundary-spanning agents as the people who formally and informally maintain inter-organisational contact, and who interact with their counterparts in other organisations. In this study, the front-line manager can be considered boundary spanning agents because they formally and informally interact with members of communities of practice which are located inside and outside their organisations.

The next step studies the literature that helps us to understand how front-line managers as boundary spanners may facilitate learning in their organisation through boundary spanning activities. The literature highlights two ways of creating boundary-spanning practices in which human agency plays a crucial role: (1) across the knowledge boundary; (2) across boundary objects. The two forms are briefly discussed below.

First, let us consider the group of researchers who focus on the process of creating boundary-spanning practices in which boundary spanners use learning opportunities (Barrett & Oborn, 2010; Birkinshaw et al., 2017; Caldwell, 2003; Swan et al., 2002). These learning opportunities are created by the boundaries inside a community resulting from a lack of competence and experience in a given situation (Wenger 2000; 2010). Thus, the boundary spanners configure the existing practices across the boundary to close the tension between the lack of competence and the expected experience, which is a form of learning (Wenger, 2000). Some empirical research illustrates how boundary spanners generate the learning across knowledge boundary. For example, Swan et al. (2002) highlight the multi-layered and networked nature of the interactions between managers and communities of practice across the knowledge boundary. The boundary in the study is identified as a lack of medical knowledge about a particular product necessary to generate product innovation for the healthcare market. The study identified that the boundary spanning practices resulted in the following efforts of managers to manage innovation. The boundary spanners created boundary

spanning practices to align the interests and agendas of competing professional groups in the healthcare market with the commercial objectives of the organisation. The study concludes that boundary spanners act as coordinators of organisational activity. Their boundary-spanning aligning practices have not only supported the learning of particular learners, but also constructed communities of practice as a whole. Caldwell (2003) draws attention to the multifaceted and complex roles of human agency in helping organisations to overcome knowledge boundaries and bring employees together to manage organisational change. In this study, the boundaries are related to the resistance of employees to change. The researcher highlights specific interpersonal skills, such as listening, communicating, team-building, negotiating and conflict resolution, to create an acceptable climate which helped the employees to overcome their fears (Caldwell, 2003, p.135). Further research illuminates the role of human agency in reflection on conflicts in cross-cultural teams and the construction of new practices to manage knowledge boundaries (Barrett & Oborn, 2010). The study observed the emergence of a social process of acculturation which represented interacting elements that both facilitate and constrain knowledge-sharing as cultural boundaries occurred: at certain times, it contributes to conflict (for example stereotyping) and at others, it solves the relational conflicts. Despite the fact that the conflicts still exist between team members, the process of acculturation, which is defined as the ways in which individuals adapt their language to the norms of the dominant host culture (Kim, 2009, p. 99) facilitates collaboration in the cross-cultural software teams.

The second body of research focuses on creating boundary-spanning practices across boundary objects. According to Wenger (2000) 'boundary objects do not necessarily bridge across boundaries because they may be misinterpreted.... [However], boundary objects are intended to enable multiple practice to negotiate their relationships and connect their perspectives' (p.236). In this way, the boundary spanning processes are important in order to stimulate the social learning system of a community of practice. Although Wenger argues that boundary objects do not necessarily bridge boundaries, empirical studies in both general and greening literature demonstrate that the process of negotiation and communication across boundary objects narrows the knowledge boundary through creating new boundary-spanning practices for organisational learning.

Thus, Nicolini et al. (2012) distinguish three types of work around boundary objects as infrastructure in the context of cross-disciplinary work on a scientific research project conducted at an internationally renowned British research institution: motivating collaboration; allowing participants to work across different types of boundaries; and constituting the essential infrastructure of the activity. The researchers conclude that managers-facilitators engage in particular practices differently depending on their ability and use of processes influencing others (Nicolini et al., 2012). In 'greening' literature, Weller (2017) investigates learning for sustainability practices in a large global high-tech manufacturing company. The study identified three groups of brokers who had taken the effort to cross different boundary objects to negotiate alignment: the vice president to prevent misconduct; the director to prevent waste and achieve financial savings; and the Corporate Responsibility department to create skills to serve the business units. The researcher concluded that the brokers in the study had created a helpful bridge around the boundary object 'sustainability' in order to achieve alignment between the relevant managers and practices. Weller (2017) argues that the managers evolved in the creation of new practices regarding the boundary object related to their responsible business practices, which was meaningful to the group. Another study on sustainability learning provides evidence for creating practices to facilitate learning across a community. Thus, Benn & Martin (2010) argued that boundary objects help to overcome the knowledge boundary. The perceived boundary in this study was the challenge of implementing a holistic approach to sustainability within a higher education institution. As a result of negotiation across visionary and structural boundary objects (as discussed in section 2.3.2.2.), new practice - an appropriate steering mechanism – was introduced that facilitated open discussion about emergent concerns of sustainability, and enabled its institutionalisation. Contrary to Wenger's view on the role of boundary objects, which does not necessarily reduce knowledge boundaries, empirical research suggests a different view: different boundary-spanning practices emerge across diverse boundary objects which reduce knowledge boundaries and maintain the social learning mechanisms in the community. Similarly, in this study, the possible boundaries across values, agendas and perspectives in Belarussian communities or practices generate the creation of conversations around boundary objects, which generate good opportunities for creating new practices for facilitating learning for

corporate greening in Belarussian communities of practice. This will be discussed next.

Situated learning theory is useful to help us focus on 'identity' in a post-Soviet context. The identities of front-line managers will be shaped by social and contextual influences, and in turn these identities will shape learning and facilitation practice. Lave (2004) views 'learning' not only as developing a process of 'knowing' but also the development of a personal understanding of ourselves and our potential. Thus, this study captures not only the process of changing identity as part of learning which goes beyond a poor process of imitation or copying (Lave and Wenger, 1991), but also provides an empirical narrative of how and why identities of front-line managers as facilitators have been changed over time in the transition period between Soviet and post-Soviet times and how existing identities help or hinder the learning practice. Different trajectories are possible in the unique context because identities are continually evolving through participation in multiple communities of practice (Handley, Clark, Fincham, & Sturdy, 2007). This means that identity construction in multiple 'green' communities of practices which communicate across different boundary objects is not eclectic. It is framed by the possibilities available in the communities. For example, the community on energy efficiency may have different financial possibilities to negotiate different practices or the community around 'green innovation' may have difficulty to communicate across certain technical terms. Therefore, the identities of front-line managers, which are shaped by social and contextual influences, may help or hinder the learning practices of the community participants.

The final step covers a proposal to analyse how front-line managers seek to facilitate learning for corporate greening by using the moods of belonging through which members of communities of practice participate: engagement, imagination and alignment (Wenger, 2000, pp. 227-228). Wenger (2000) underlines that learning in communities of practice is not just acquiring knowledge, but also a process of identification with the community, e.g. 'who am I and where do I belong and am I accepted?'. Therefore, modes of belonging are important for the social learning process because they explain different levels of participation in the community, and help to show different kinds of work and practices formation that are constructed through the participation and non-participation of the 'green'

communities of practice in Belarus, to which the members belong. Thus, the key analytical concepts used in this study - engagement, imagination, alignment - as drawn from Wenger's work (2000) are summarised below:

- *Engagement*: it is a form of work in the community whereby members engage with each other by doing things together, e.g. talking, sharing, which require opportunities for joint work. In the context of this study, boundary practices are generated to encourage community members to participate in, contribute to the community's shared practices, and gain competence not because someone told them to do so, but rather because they would like to enquire new skills and knowledge in the community.
- *Imagination*: is seeing connections through time and space by extrapolating from experience through orientation, reflection, and exploration, which requires maintaining a distance from the situation (Wenger, 1998). In the context of this study, generating new boundary-spanning practices occurs by creating images of possibilities, an awareness of broader environmental systems, creating models and visions, and reinterpreting histories.
- *Alignment*: the forms involve coordinating activities and resources to fit within broader structures and achieve results, involving convergence, coordination, and jurisdiction (Wenger, 1998). In this study, boundary-spanning practices are shaped by creating alignment in finding common ground, establishing procedures and structures. Consequently, the work in this mode helps the front-line manager through agreements and disagreements across boundaries, and to coordinate their activities to fit within broader structures.

The importance of the modes of belonging to this study is threefold. First, as discussed above, existing studies on boundary-spanning practices in 'greening' literature have demonstrated the important functions of boundary objects in the creation of common meaning around environmental matters (Benn & Martin, 2010; Nicolini et al., 2012; Weller, 2017). Although these studies have improved our understanding of the mechanisms whereby new boundary-spanning practices are created, the studies were conducted in organisations or teams with flat hierarchies. In the context of this study, the front-line managers work with

other members of communities in traditionally hierarchical and government-controlled organisations. Thus, front-line managers do not have the financial support to create practices such as expensive platforms for discussion, nor the authority to organise regular large meetings, as studies have demonstrated. They would rather use existing practices inherited from the Soviet Union or create new informal practices which may create a better meaning for 'greening' and sense of belonging among community members. Therefore, the three modes of belonging help us to better understand the social side of the front-line managers' process of creating practices that help other members to identify with (feel they belong to) their communities.

Secondly, the literature studied above draws attention to the corresponding need for creating different boundary-spanning practices across different boundary objects, which depend on the type of boundary. However, these practices are aimed at reducing boundaries in the communities, assuming that all the members of the communities are participating. They have not sufficiently discussed how boundary spanners address non-participants, or those former community members who decided to discontinue their relationship with the community (disengagement from 'green' practices). In this study, as discussed in 2.3.2.1., socio-historical influences have constructed boundaries which have led to the withdrawal of some members from the communities. Therefore, in a post-Soviet context, it is important to facilitate a group in a manner that gives people a sense of belonging, not only for members but also non-participants. Consequently, the boundary practices of front-line managers who are in close contact with non-participants may include listening to their concerns, worries and ideas, and adapting the learning activities according to their needs. In this way, front-line managers can focus the learning in their organisations towards employees more engaged in 'green' practices.

Finally, the concept of 'community of practice' itself has been the focus of criticism and this research has addressed a number of these criticisms because it takes learning as its foundation, not power. Wenger (2010) acknowledges the limitation by emphasising that the concept is rather a learning theory, not a political theory. Still, issues of power might be part of front-line managers' learning in the organisation where meanings of environmental responsibility of some actors are

merely a reflection of the dominant source of power such as legislation or post-Soviet ideology. Therefore, the concept 'moods of belonging' offers a useful platform to review the community of practice from the perspective of how front-line managers incorporate issues of power in the post-Soviet context. In particular, the range of learning trajectories in a 'green' community of practice to create more bridging and linking ties between learning practices of different actors and power. Consequently, the new concept of 'moods of belongings' may be developed out of present community of practice; where, as an instance, the assumptions could be expanded to incorporate the facilitation practices observed within Belarusian contexts including traditional vertical communities and structures.

In summary, the concept of moods of belonging that captures different forms of participation - i.e. engagement, imagining and aligning (Wenger, 2000) - seems to be appropriate in explaining how boundary practices in a post-Soviet context full of ambiguities and uncertainty over the social learning of the community members are created by front-line managers. Thus, how front-line managers - who are boundary spanners - facilitate learning for corporate greening forms the enquiry of this study.

2.4. Conclusion

Chapter 2 summarises the identified research gap in the greening literature, and the key concepts relevant to the research question that will be used to analyse the data.

Despite the growth of interest in effective organisational practices to motivate employees to develop ideas, skills and abilities necessary for the successful implementation of corporate greening, research is still needed that continues to explore how low-tier managers, i.e. front-line managers, facilitate learning for corporate greening (Jamali, 2006; Muralidharan, 2016), and how socio-historical contextual influences shape the learning (Pyrko et al., 2017; Wenger, 2010; Roberts, 2006). The analysis of the wider body of greening literature on large companies, together with the literature on environmental motivations in different contexts, has shown the emergence of a new stream of thought which proposes that corporate greening occurs through engaging employees in learning about corporate greening. However, the limited literature focused on post-Soviet

contexts, which shows that businesses are confronted with different challenges than the organisations in a Western context, does not sufficiently explain what managers in the post-Soviet context are doing differently than their colleagues in the Anglo-Saxon context to engage their employees in the learning process regarding environmental practices. The research on facilitating learning for corporate greening shows that the majority of the greening literature focuses on organisational practices used by leaders at the senior level and HR and EM departments. There is limited information on low-level managers, i.e. front-line managers, in this process.

The remainder of the chapter looked at the situated learning theory (Lave and Wenger, 1991), and two associated concepts of community of practice and boundary objects, that could be used for understanding how front-line manager facilitate learning for corporate greening in a post-Soviet context, which is summarised in Figure 2.2.

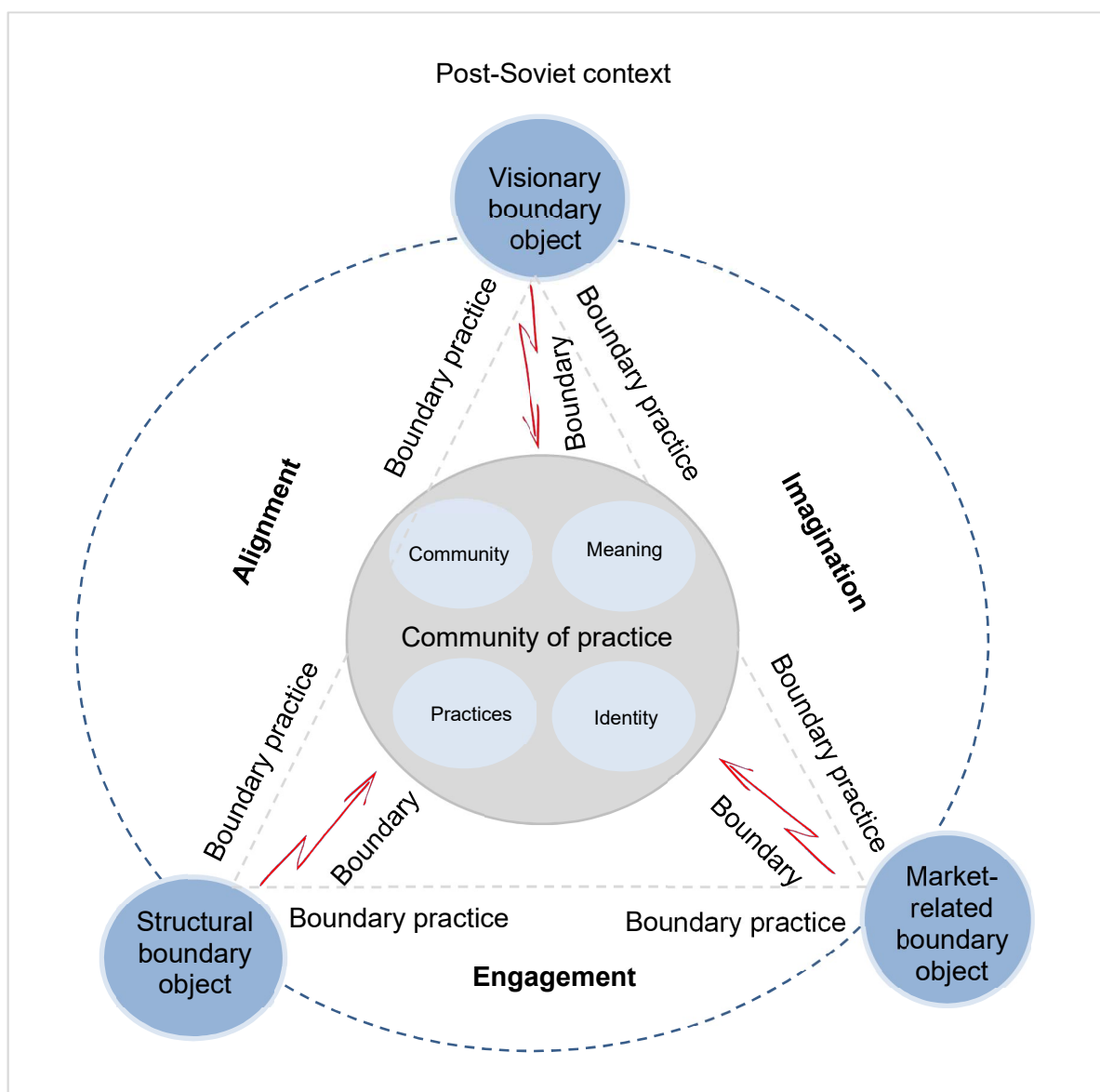


Figure 2.2: Theoretical framework for the study

Figure 2.2. illustrates the connection between different concepts used in this study. The concept of community of practice, including the main characteristics (meaning, community, identity, practices, and boundaries) has been used as an explanation of how learning for corporate greening occurs in a dynamic environment in a post-Soviet organisation. The theory is a useful theoretical lens through which to uncover the socio-historical influences which construct boundaries across values, agendas and perspectives between community members. Further, in order to unpack the tensions and understand the differences between individual and collective learning for corporate greening, the concept of boundary objects is used. In this respect, the concept of boundary objects helps the researcher to explore how learning about corporate greening takes place in the three companies in Belarus. Finally, the theoretical concepts

focus on the front-line managers' role as boundary spanners who help develop three approaches to work: engagement, which opens up opportunities for joint work; imagination, that requires maintaining a distance from the situation; and alignment, that requires involving other practices around a shared goal (Wenger, 2000). The next chapters outline the background and methodology adopted to explore the research question generated in this thesis.

CHAPTER 3: BACKGROUND

The review of the literature suggested a gap in studies of transition economies with a low speed of transition and, in particular, of Belarus as one of the countries in post-Soviet transition. Before defining the methodological adjustments in the following Chapter 4 'Methodology, it is important to understand the socio-historical context of this study. This chapter selects the relevant components which will help us to understand the wider social context of the post-Soviet country – Belarus - and the chemical industry in which three chemical plants selected for this study operate. The chapter will help to locate the overarching research question – how front-line managers in a post-Soviet context facilitate learning for corporate greening in their organisations – in the specific Belarussian context surrounding the exploration of the research question. A further aim of this chapter, in setting out the Belarussian context, is to provide a firm foundation for the proposed contribution to practical knowledge made by this thesis as articulated on page 269 of the concluding chapter (please see section 8.2.3. 'Practical contribution').

Belarus is one of the seventeen low-speed transition economies selected for this study. The Republic of Belarus is located in Eastern Europe with a territory of 207,595 km² and a population of 9.4 million. The country is divided into six provinces (oblasts): Brest, Vitebsk, Gomel, Grodno, Minsk, and Mogilev. It is categorised as a transitional economy with a GDP of USD 53 billion and GNI per capita of USD 5,280, and in 2016, it was categorised as a country with a low-speed economy with an upper-middle income level (UN, 2017). Through its location, Belarus controls one of the major land routes (and the associated gas pipelines) from Western Europe to Russia. Geographically speaking, flowing towards Ukraine, there is 415 km of the Dnepr river, and also the Belavezhskaia Pushcha, shared with Poland, in the far west of the country, which is the oldest forest in the country and a reservation area for animals and birds. This geographic location, and the fact that, in the past, it has been located in the Kingdom of Lithuania, in the Grand Duchy of Lithuania, the Polish-Lithuanian Commonwealth, the Russian Empire, and, more recently, in the Soviet Union,

has had a significant impact on the development of the social, political, economic, and ecological structures of the country. After the collapse of the Soviet Union in 1991, the new form of unitary presidential state that arose has played an especially important role in the creation and development of the political, cultural, ecological, and economic systems that can be identified in Belarus in the 21st century.

Belarus was selected because it is a representative example of a post-Soviet transition economy with slow social and economic changes, and the most Soviet-type economy (Rees & Miazhevich, 2009). Rees & Miazhevich (2009) name the main indicators for the most 'Sovietised' republic such as the successful russification (imposition of the Russian language), a high level of economic development during the Soviet Union in comparison to other Soviet republics and high level of patriotism because of the importance of Belarus during WWII war. Other Soviet elements as part of Belarusian sovereignty regarding the corporate state model: (1) a Soviet-type socially-oriented constitution, (2) a state-led planning system centered in Minsk, instead of Moscow, and (3) Soviet types of social networks (Lowenhardt, 2005). These aspects of Sovietisation make Belarus a unique context, in which some Western theoretical concepts are difficult to apply (Titarenko, 2007). Therefore, this study helps us to understand the facilitation practices for corporate greening, shaped by the unique context of Belarus, used by front-line managers in the learning environment. Finally, an additional reason for selecting Belarus was that the researcher had contacts to chemical plants and local knowledge, which helped the researcher gain access and conduct the research.

The chapter is organised as follows. Section 3.1 provides the main characteristics of the Belarussian transition process from a planned economy to a market-based economy, including societal changes, changes in institutional frameworks, and the economy in relation to environmental protection. Section 3.2 presents an overview of the development of corporate greening in the chemical industry contexts, and gives an overview of three selected plants relevant to this study. Section 3.3. summarises the chapter.

3.1. Post-soviet transformation in Belarus and corporate greening

The aim of this section to describe the post-Soviet transition of Belarus in relation

to the process of corporate greening. This section gives first a broad picture of the environmental performance of Belarus, and the relevant environmental aspects that help the employees to create the awareness necessary for their learning for corporate greening (Anttonen, 2010). The three socio-historical influences are considered as crucial for environmental learning at work, but they create ambiguity and separate the different groups. This section shows in which way societal changes, changes in institutional frameworks, and the economy in relation to environment protection generate ambiguity between different groups of people in Belarus. A summary closes the chapter.

3.1.1. Environmental performance of Belarus

This section shows that despite the positive development of the environmental performance of Belarus in the international arena, environmental issues have led to a high rate of health issues, deaths and natural disasters that have negatively affected the lives of Belarussian citizens, and their environmental awareness.

Environmental protection in Belarus is assessed by international bodies as highly developed. The index of the ecological efficiency of the Republic of Belarus for 2018 is 64.98 per cent on the Environmental Performance Index (Belarus occupies the 44th place among 180 countries, maximum score is hold by Switzerland with 87.42) (Yele, 2018). Compared to 2016, Belarus has a decreased Environmental Performance Index score of 82.3 per cent (Belarus also ranked 35th among the 180 classified countries of the world in 2016, maximum score by Finland with score of 90.68) (Yele, 2016). Although the EPI indicates still positive development in comparison to other transition economies such as Russia or China regarding natural resource grants, past and present pollution levels, environmental management efforts, and society's capacity to improve its environmental performance over time, there remain unresolved interrelated environmental challenges (Maslovskij & Jaroshevich, 2006). The environmental problems of the country include climate change, radioactive contamination of the territory, air pollution, pollution of surface and groundwater, pollution and degradation of soils, and accumulation of waste.

One of the threats to Belarus's environmental security is related to climate change. The average annual temperature over the past 120 years has risen by 1°C, which is continuing to increase rapidly. Consequently, the number of frosts, floods and droughts in different months of the year has increased. Another significant environmental issue is radioactive contamination resulting from the accident at the Chernobyl nuclear power station, air pollution, and pollution of the water supply by the potash industry (Weißenburger, 1994). Currently, 20.8% of the forest and 13.5% of agricultural lands, particularly in the south of Belarus, are still subject to radioactive contamination, which will remain the main issue for the country for the long term.

Air pollution is another important environmental issue in Belarus. Although there was an increase in annual production by 8.5% in 2016, there was a general decrease in emissions by a 6.6%. However, there is an issue on the structure of emissions. According to the National Monitoring System, higher average annual concentrations of solid particles, phenol, nitrogen dioxide, ammonia and some other substances were particularly observed in the cities with chemical plants. Thus, the increased level of atmospheric pollution for the period from 2001 to 2016 was recorded in Vitebsk, Brest Novopolotsk, Mogilev, Polotsk, Orsha, Svetlogorsk. The index of atmospheric pollution⁸ (IZA) in these cities is determined within 3.5-5.0 units. As a consequence, the total number of deaths caused by air pollution in Belarus is estimated at 9,450 (Figure 3.1.).

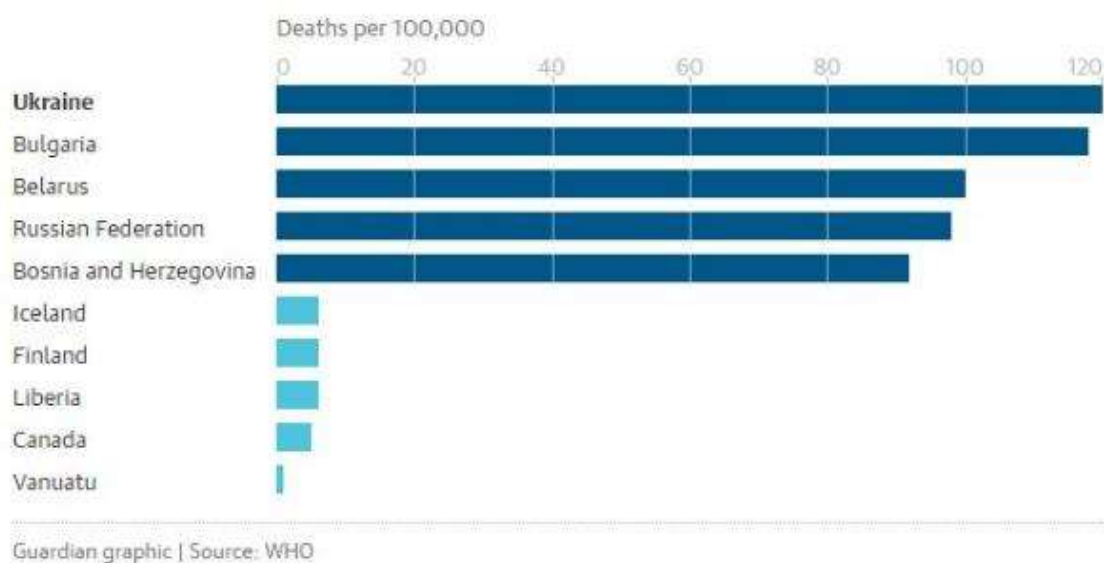


Figure 3.1. Number of deaths for every 100,000 people in 2012 (Source: The Guardian / BelarusFeed, 2016)

⁸ The Air Quality Health Index provides a number from 1 to 10+ to indicate the level of health risk associated with local air quality (Source: Kyrkilis at al., 2007).

According to the WHO, Belarus has internationally the highest incidence of annual deaths from air pollution per 100,000 capita after Ukraine and Bulgaria, including cardiovascular diseases, stroke, chronic obstructive pulmonary disease and lung cancer.

Finally, the pollution of surface and groundwater due to the increased use of water in the production sector and concentration of particular substances has increased. Thus, due to particular substances such as iron, manganese, copper impact exceeding their limits, the quality of the groundwater has deteriorated over recent years. The high levels of zinc, the percentage of nitrogen to nitrite, nitrogen to ammonium, and oil products, particularly in the large rivers such as the Dnepr and Nieman, have affected the quality of the surface water, as well as led to degradation of the soil. The pollution is explained by the increased volume of waste and the difficulty in processing it. The category of hazardous waste is the greatest contributor to pollution because of a large number of chemical plants in Belarus, and their facilities. In total there are 544 such facilities in the country, which are usually located in large cities (Maslovskij & Jaroshevich, 2006). In the zone of their influence, a total of about 3 million people live in these cities. There are 10-25 accidents annually in chemical plants that are caused by hazardous facilities, which affect the environment of the city (Aristov et al., 2008).

3.1.2. Socio-historical influences

The following section focuses on three main socio-historical influences - social, legislative, and economic changes - in Belarus that have affected the pattern of corporate greening development in the country, and how the ambiguity between different groups of people in Belarus has been generated.

3.1.2.1. Societal changes

This subsection describes how the notion and way of everyday life have changed in Belarus between before and after the USSR exerted its influence on the country. This is relevant to the learning environment for corporate greening. After giving a historical background about the changes in Belarussian statehood, it is argued that the natural environment has become an aspect of modern post-Soviet Belarussian ideology. The process of transition included the development of a new Belarussian identity as a lawful and environmentally responsible citizen based on the new post-Soviet Constitution and changes in the Belarussian

lifestyle. However, this post-soviet ideological transformation in Belarus has been confronted by difficulties of uncertainty around the obligations of the citizen towards the environment. The idea of obligation of the citizen helps as well as hinders engagement in environmental issues. Whereas an older generation of workers may accept the authority of government as a benign state with 'good intentions', young people feel greater tension between the traditional and the new way of thinking, which generates mistrust between the young generation and people who lived in Soviet Belarus. It affects the general attitude of young employees towards environmental issues, resulting in an imbalance between people's individual decisions to engage in environmental activities and the state's expectations.

The development of natural resources as an ideological notion in Belarus has a long history, and has changed over time. During the Soviet time, the environment was considered an inexhaustible natural resource (Zaharchenko, 1990). The activities of the government-owned firms in the USSR were concerned with the complete and efficient exploitation of the Soviet Union's natural resources and, simultaneously, their preservation (Pryde, 1991). The belief behind the Soviet communistic ideology was to use natural resources for the 'better future communism' (Eke & Kuzio, 2000). Later, after the Second World War II, natural resources were considered a source of building material, as well as part of part of the national education, including patriotism to nature, the spiritual unity of the nation, and the wealth of the beautiful homeland (Zinoviev, 1983). As the post-war period progressed and industrialisation and 'cold war' came into focus in USSR ideological activity, the main purpose of this ideology was to ensure national security (Podbieryozkin, 2011). The main philosophy at this time was 'conservation', which implied the economic concept of preserving scarce natural resources (timber, land, minerals, and water) for purposes of future exploitation (Zaharchenko, 1990). Natural resources were used to achieve the goal of national security, which formed part of a government order of the planned economy for large firms.

After the collapse of the Soviet Union in 1991, the ideology of Russian 'conservation' was replaced by a new Belarussian ideology, based on the idea of a 'prosperous state' and the values of a strong social state, which would provide stability and the sustainable development of the country. The most significant

change is the inclusion of rights and responsibilities for the environment in the new post-Soviet Constitution, which is part of the state ideology (Figure 3.2.).

Article 46. Everyone has the right to a favourable environment and compensation for harm caused by the violation of this right.

The state exercises control over the rational use of natural resources to protect and improve the living conditions and the protection and restoration of the environment.

Article 55. Environmental protection is everyone's responsibility.

Article 79. The President of the Republic of Belarus is the head of state, guarantor of the constitution of the Republic of Belarus, the rights and freedom of its citizens. The President represents the unity of the people, guarantees the realisation of the basic directions of domestic and foreign policy, represent the Republic of Belarus in relations with other states and international organizations. The President takes measures for the protection of the sovereignty of the Republic of Belarus, its national security and territorial integrity, ensures political and economic stability, continuity and the interaction of bodies of state power, mediates between public authorities. The President has immunity, honour and dignity protected by law.

Figure 3.2: Extracts from Constitution of Belarus

According to Article 21 of the Constitution: '*Ensuring the rights and freedoms of citizens of the Republic of Belarus is the main goal of the state*'; one right is the right to a favourable environment. At the same time, the state exercises control (Article 46) over all entities in the use of environmental resources. In this way, the constitution gives a legal basis for the relationship between the individual and the state in which the interests of the individual rights and freedoms of citizens are considered 'the main social value' (Leshchenko, 2008). In this way, Belarus has chosen a path of a socially-oriented state development that is similar to the Soviet type, with the main goal being to increase the material welfare and the cultural wellbeing of the citizens of the country (Ministry of Foreign Affairs of Belarus, 2016). Environmental resources are an integral part of the ideological and human resource work in the Programme of Socio-economic Development of the Republic of Belarus for 2016–2020 (Minpriorda, 2017). The strategic objective of the national plan is to improve the quality of life of the population through increased competitiveness, investment, and innovation.

However, post-Soviet ideological transformation in Belarus has been confronted with difficulties of uncertainty around the obligations of citizens towards the environment. There is tension between the Belarusian state as a social state, with its 'good intentions', and its authoritative threat to its citizens (Lowenhardt, 2005; Leshchenko, 2008). Many Belarusians, in particular in the low-paid regions in Gomel, Mogilev, and Brest oblasts, which were also the most affected by the Chernobyl accident and where 53% of the poor live (Belstat, 2016), disagree with the expectations of the government. The mistrust was caused by a newly-issued law for unemployed people, the majority of whom are young people. In 2015, President Alexander Lukashenko issued a decree about 'parasites'. The decree of the President of the Republic of Belarus of April 2, 2015 No. 3 'On prevention of social dependency' was adopted to prevent social dependency, encourage able-bodied citizens to work to ensure the fulfilment of their constitutional duties to participate in the financing of public expenditure through the payment of taxes, duties and other payments. This caused massive protests throughout the country and created mistrust towards the president and the whole government machinery regarding the control of human rights. Such events, as images, could stay long in the memories of the people if it comes to imposing mandatory action concerning environmental activities and practices initiated by the government.

3.1.2.2. Legislation and institutional framework

This section shows that modern environmental legislation in Belarus is based on the institutional framework inherited from the USSR. However, formal institutional constraints are given as an explanation for the uncertainties in Belarus.

Before 1991, the Belorussian Soviet Socialist Republic was part of a set of well-functioning peripheral territories guided by the main environmental institutions from Moscow (Otto, Shkaruba, & Kireyeu, 2011). The dedicated state committee for the protection of nature for the USSR was only established in 1988, and mainly focused on small projects, such as the installation of filters and equipment upgrades.(Expert, 2017). Following the break-up of the USSR in 1991, a new administrative-command institutional framework was introduced in Belarus. The framework includes a well-differentiated and capable administrative structure which has a strong controlling function (Harrison M. , 2002). This means state power in Belarus is exercised on the principle of the division of power between the legislative, executive, and judiciary branches of government. The controlling

function is reflected in the hierarchical chain or roles which supervise the legal activities: beginning from the President who takes an overarching role, following by the Deputies of the House of Representatives of the National Assembly and local Councils of Deputies. Then, State bodies within the confines of their powers are independent and eligible to co-operate within a system, including enterprises or responsible persons (Ministry of Foreign Affairs of Belarus, 2016). This sets up a structure for legislation for environmental issues and the monitoring of environmental performance in the whole country.

There are positive and negative aspects of the post-Soviet Belarussian administrative command institutional model. The positive influence that the state's development policies and institutional arrangements have is on the ways business organisations and their managers can create a unique learning environment for 'green' communities of practice. For instance, the investment and national programme have had huge impacts on facilitating the formation of several new environmental projects (Ministry of Economics of Republic of Belarus, 2017). Furthermore, the formal institutional framework provides the possibility of the creation of various types of integrated structures between ministries (Ministry of Economics of Republic of Belarus, 2017). These structures include the President, the five Deputy Prime Ministers, the 11 members of the Presidium of the Council of Ministers, and the Republican bodies of state administration. These bodies include 24 Ministries, seven State Committees, and seven Agencies Subordinate to the Council of Ministers, which control different industrial directorates (COMMIN, 2017). In this way the integrated structure between different administrative bodies makes it possible for several actors to coordinate and implement environmental programmes on the government level beyond the market place. However, the institutional reforms in post-Soviet Belarus have generated the formal constraints of planned economies, such as the comprehensive use of central economic planning and bureaucratic control, the political ideology, and the party apparatus, to control individuals and firms (Rees & Miazhevich, 2009). Because of these constraints, firms are not independent decision-making units, and are not concerned about market-based measures (Kuznetsov & Kuznetsova, 2005). The most significant uncertainty in the country, in terms of the legal and institutional framework, is the high level of bureaucracy similarly to other countries in transition (Crotty & Rodgers, 2012b),

which reduces the effectiveness of state management to engage enterprises in environmental issues, and informal constraints that prevent managers from adapting quickly to difficult transitional conditions. More about the role of enterprises and the economic environment is discussed below.

3.1.2.3. Economic changes

This section presents the characteristics of low-speed economic development in Belarus, and the uncertainties associated with the economic changes. The central economic planning and state-controlled ownership incorporated into the hierarchical structure provide stability in getting orders from the government. At the same time, it increases the uncertainty of business to manage expectations in achieving the environmental standards for the environmental clients at reasonable costs, which shows again the possible boundaries related to 'greening' as a boundary maker in the learning environment.

The historical roots of the current state of economic affairs in Belarus are traced back to its industrialisation after World War II (Vadalazhskaya & Matskevich, 2009). Post-war reconstruction and industrialisation progressed from the summer of 1944 to the mid-1960s. During the late 1960s until 1981, was a time of relative economic wellbeing through industrialisation and economic growth (Titarenko, 2007). Belarus' specialisation was in R&D and assembling high-tech products, and they possessed important highly qualified R&D personnel (Ioffe, 2004). Therefore, the economic development of BSSR followed a positive economic trend, at least until 1981, whereas the Soviet Union entered a time of economic and cultural stagnation after the 1970s (Zashev, 2006). In 1991, like many other countries of the former Soviet Union, Belarus struggled to define its version of the planned economy and market capitalism (Havrylyshyn & Van Rooden, 2003). Whereas the 'Shock therapy' of mass privatisation, limited government, competitive markets, and global connections was practiced in Russia and Ukraine, it was not practiced in Belarus. Instead, the government introduced several privatisation and liberalisation measures. For example, some attempts were made on housing and introducing free enterprise laws aimed at achieving a market economy (Marples, 1999). However, the consequence of this was an unexpected and unpredictable economic fall in 1994, noticeable still today. From 1994, after the presidential election, the economic model of modern Belarus attempted to combine a market economy with strong state control (UNDP, 2015).

The model foresaw different forms of ownership, a so-called ‘multiform’ economy with ‘a market economy receptive to social needs’. As a consequence, the State used the government planned orders⁹ to ensure that the ‘social needs’ of the citizens were covered, thus continuing the Soviet variant of industrialisation and urbanisation (Vadalazhskaya & Matskevich, 2009). The business structure of large government orders aimed at the reduction of environmental risks and costs, ensuring the ‘economic prosperity of the country’ (Ministry of Foreign Affairs of Belarus, 2016).

The large companies in Belarus are state-controlled because they are strategically important enterprises and have Open Joint Stock (in Russian: *Otkrytoe Aktsyonernoye Obshchestvo*), making them the only type of legal entity that can be openly traded (Nikolayenko, 2008). As this study focuses on large companies, it is important to look at the sectors with the state-controlled ownership which affects the sense-making of the employees when incorporating environmental issues in their decision-making (Jenkins & Yakovleva, 2006; Sharma, 2000).

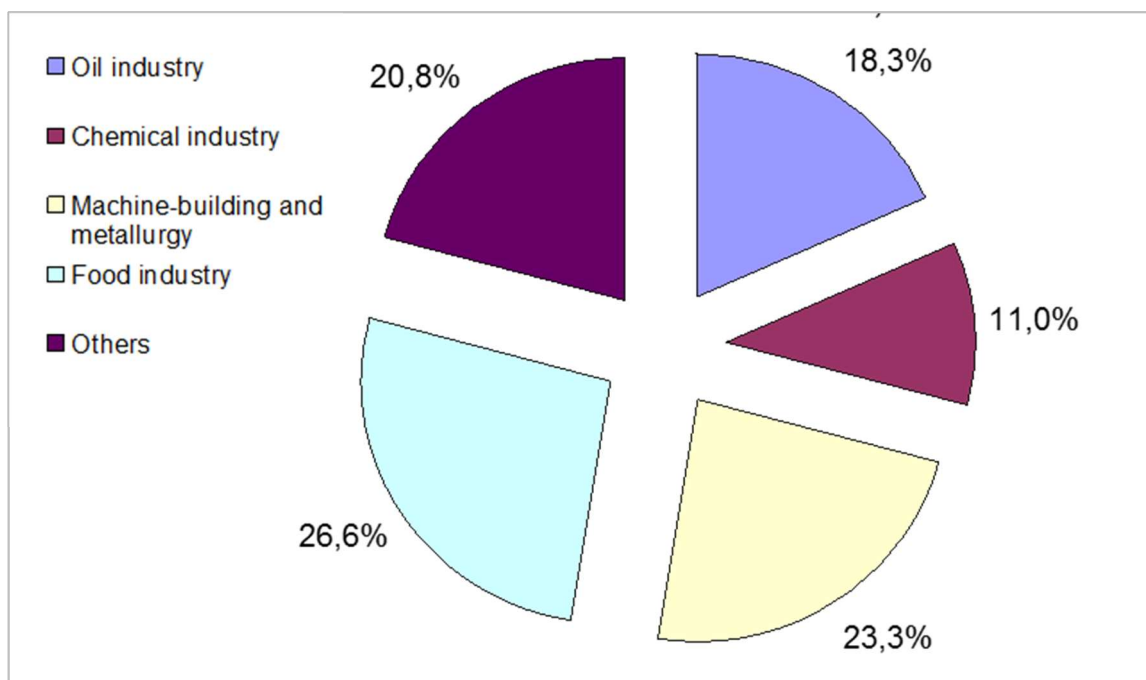


Figure 3.3: Industry structure in Belarus
(Source: Belstat, 2016)

⁹ State orders involve centralised state planning and administrative decision-making are associated with Soviet-type central planning.

Figure 3.3. presents the major sectors in Belarus which are controlled by the state. These are the oil industry (18,3%), chemical industry (11%), machine-building and metallurgy industries (23,3%), and the food industry (26,6%). These represent the strategic industries of the country and the state. This means that the employees of these companies may feel changes in the policy of the government more intensely than employees in small enterprises.

Looking at the effect of state-controlled ownership and the development of 'green' industrialisation and urbanisation in Belarus, there has been a positive response as well as difficulties experienced by businesses. The positive aspect of returning to the Soviet order, and continuing the Soviet type of industrialisation and urbanisation is the fact that, in this way, the environmental issues are taken according to a rational and scientific approach (Expert, 2017). The approach highlights the rationale to install new, environmentally-friendly equipment aimed at energy and resources reduction. The Belarusian economic model foresees the introduction of environmental taxation¹⁰ and governmental ISO certificates (Ministry of Economics of Republic of Belarus, 2017).

The negative effects of the new economic model relate to the ability of large businesses to manage both the government expectations and their economic situation, which depends on the development of both demand and supply sides. Despite the fact that state-controlled organisations enjoy better state support from the institutional environment, they are expected to produce positive economic results (Kostova & Roth, 2003). Therefore, there is a discrepancy between managing the expectations of the government and their actual economic situation which generates an ambiguity on the company side. An example is when economic stagnation resulted in the closure of the majority of companies or led to them merging into joint ventures, in 2012. In 2015, due to weak external and domestic demand (down by 20%), the most profitable industries in the country, such as machine-building, oil and chemicals, demonstrated their vulnerability to developments in Russia, which had the more developed structures (CHSH,

¹⁰ According to the law, environmental tax is levied from entities that exploit natural resources and pursue activities that pollute the environment. The law stipulates a number of rates for the ecological tax. Depending on the particular subject of taxation, there are fixed rates for emissions of pollutants into the air and wastewater discharges, storage and disposal of industrial wastes, and the import of ozone-destroying substances to the territory of Belarus, including those contained in the products. Tax rates are established in Belarusian roubles against the volume of production (withdrawal) of natural resources (except for potassium salt and oil). Each quarter, tax payers submit the tax declaration (calculation) to the tax bodies not later than on the 20th of the month, following the expired tax period. Ecological tax is to be paid each quarter not later than 22nd of the month, following the expired tax period.

2017). Therefore, the new Belarussian economic model suffers ambiguity between different agendas which may affect the learning for corporate greening of employees.

3.1.3. Summary of the section

This section has highlighted some progress of the environmental performance of Belarus in the international arena. However, the country faces many environmental issues, inherited from Soviet times, and industrial activities which lead to a high rate of health issues, deaths and natural disasters. Although awareness of environmental issues may create a positive effect on the learning of employees, the chapter looked at the wider context of Belarus.

The Belarussian transition model towards corporate greening can be summarised in the following sentence: the key role in this transitive period is played by the state, with a state-led socially oriented governance, through the institutionalisation of environmental matters. The institutionalisation runs through the state ideology, legal framework and economic model. First, the modern State ideology is focused on integrating environmental issues into the main value system. The system of values is focused on maintaining classical Soviet values, including shared responsibility between the citizen and the state for the 'prosperity of the country'. Secondly, state ideology provides a basis for the legal and institutional framework. Although some institutional mechanisms for environmental protection were developed in Soviet times, the overall style of governance has remained largely unchanged since then, and requires re-thinking and new methods of governance. The legal and institutional framework forms the economic relationships which play an important role in defining the mandatory and voluntary activities of the firms, and the decision-making of the managers regarding ecological aspects. Finally, the Belarussian transition is moving from a prevailing state ownership to a so-called 'multiform' economy.

As the section has shown, the socio-historical context of Belarus has generated uncertainty for the government and for different industries, like the chemical industry. Changes in lifestyle have caused the problems of uncertainty and distrust in the government, and regional disparities in socio-economic development; there are a number of problematic regions, especially Vitebsk, Gomel, and Mogilev. The unstable dynamics of the main economic drive play a

significant role in companies' development towards corporate greening. There is a high level of dependence on imports of energy and other raw material resources from Russia.

This section has illustrated the turbulent history and economic, political and social changes in Belarus between the Soviet and post-Soviet periods, which has created an interesting socio-historical context for learning for corporate greening in Belarus in this study. The next section discusses the contextual factors of the chemical industry that may positively or negatively influence the facilitation of learning for corporate greening.

3.2. Chemical industry in Belarus

This section presents the socio-historical influences for the chemical industry in Belarus – the industry which is relevant for this study. First, it highlights historical events leading to a greater level of greening activity in the chemical industry, and the environmental implications of the industry. Second, it describes three chemical plants to complete a full picture of the socio-historical context relevant for this study.

Before presenting the historical development of the Belarussian chemical industry, and to help the reader compare the industry to that in Western Europe, it is useful to briefly introduce its current structure, including the main companies, their size, annual turnover and their geographical locations. The chemical industry in Belarus is an important asset, with large-scale production, and is one of the largest branches of the industrial sector in Belarus (Aristov et al., 2008). After a temporary decline in production since 1995, the industry has steadily grown. The industry is characterised by wide diversity in terms of products and the large number of employees. According to the business database of Belarus, which lists 47 chemical companies in Belarus (UNITER, 2017; REESTER, 2018), 19 are defined as large companies (Figure 3.4.).



Figure 3.4. The main enterprises of the chemical industry of the Republic of Belarus (Source: Belneftekhim)

Figure 3.4. illustrates the location of 19 largest chemical companies in Belarus which are grouped in eight production clusters. As the figure shows, the product range of the chemical industry spans from oil refining production to household products. The plants are located mainly at the source of oil mining facilities (Polazk, Mozyr and Soligorsk) and large rivers to ensure access to water. The branch structure of the chemical and petrochemical industry is characterised by great diversity in terms of volume and number of employees, as presented in the table below which complements figure 3.1.

Group	Plants	Year of foundation	Number of employees	turnover EUR
Production of mineral fertilizers	JSC Belaruskali	1963	20,000	2,52 Mrd.
	JSC Grodno Azot	1965	7,750	741,9 Mrd.
	JSC Gomel chemical plant	1966	1,973	271,3 Mio
Oil refining production of chemical fibers	JSC Mozyr Oil Refinery	1975	4,767	464,6 Mio.
	OJS "Naftan' Novopolatsk	1963	10,814	-
Production of polyethylene and plastic products	OJSC Mogiliovkhomvolokno	1950	8,200	230,0 Mio.
	OJSC Grodno 'Khimvolokno' (part of JSC Grodno Azot since 2012)	1965	2,345	164,6 Mio.
	OJSC SvietlogorskKhimvolokno	1962	4,400	421 Mio
	Polozk OJSC "Polymir (part of OJS "Naftan' since 2008)	1968	4,000	400 Mio
Production of household chemistry	Rudensk Plastic Products Plant	1995	539	165,5 Mio
Manufacture of household chemistry	Osipovich household chemistry plant	1981	604	320,0 Mio
	Baranovich household chemistry plant	1980	345	134,5 Mio
	Minsk household chemistry plant	1977	780	-
	Brest Factory of Household Chemicals OJSC	1970	456	230,8 Mio
Production of paint and varnish products	Lida Lakokraska	1968	420	156,5 Mio
Production of medical preparations	Borisov Medical chemical plant	1975	1,200	-
	Skidiel chemical plant for medicine	1971	400	-
	Minsk chemical medical plant	1978	1,300	201,5 Mio
Manufacture of automobile tires	Bobrujsk plant for chemical products	1975	450	-

Table 3.1: Details on each chemical plant presented in the figure 3.4. above (Source: Referendums for each company)

Table 3.1. presents details of each chemical plant, including the year of formation, volume of production and the number of employees. The table shows that the leading place, in terms of the number of employees and the volume of production, is occupied by the production of chemical fibers and threads, mined chemicals (production of potash fertilizers), basic chemistry and petrochemical industries (in the upper level of the table). Due to the difficult economic situation after 1991, all 47 companies of the chemical industry (including the 19 large companies presented in the table) are part of the 'The Belarusian State Concern for Oil and Chemistry', i.e. 'Belneftekhim' (hereafter: Belneftekhim). This is the main

exporters of chemical products in Belarus. The number of employees of this concern is 116,000 people in total.

The following section, 3.3.1., looks at the historical developments of corporate greening in the chemical industry. Section 3.3.2. presents the three chemical plants selected for this study.

3.2.1. Corporate greening in chemical industry in Belarus

This section explains how the large chemical plants in Belarus have a relatively short history compared to the Western European plants, such as BASF, which was founded in 1866 in Germany, or the U.S. chemical plant DuPont, which was founded in 1802. The historical development of the chemical industry in Belarus is coloured by two important influences which are relevant for learning for corporate greening: the limited attention to environmental issues of the chemical industry related to the use of hazardous natural products, intensive energy use and polluting gas emissions; and the water-intensive production during the Soviet period and the intensified work on environmental protection in the post-Soviet era since the industry was centralised under 'Belneftkim.

The history of the chemical industry shows that corporate greening was ignored in the industry in the Soviet and early post-Soviet periods. First, from the 1930s to the 1990s, the period is characterised by the strong development of new chemical plants with limited attention to environmental issues. Large-scale chemistry production began in the 1930s with the opening of the Mogilev artificial fibres plant on the river Dnieper, which involves the most water-intensive chemical process (Sidarenko, 2008). Similar ecological risks from intensive water consumption increased following the building of other large plants producing chemical fibres and threads on the Western Dvina (Novopolotsk), on the Neman (Grodno), and on the Berezina (Svetlogorsk). Because of this, the industrial processing of chemical fibres and threads, and the large volume of production, created damage to the water sources in the East, West and Southern regions (Zaharchenko, 1990). Despite this, the government programme for the 'chemicalisation' of the national economy continued to be adopted in 1960, without too much attention being paid to the consequences (Sidarenko, 2008). Instead, the positive aspects in the BSSR, in connection with the development of chemical industry, were noted. These included the new cities of Soligorsk,

Novopolotsk and Svetlogorsk being built, and the chemical plants assuming the status of city-forming. This led to employment through local recruitment of workers and, through collaboration with the local authorities, the building of new roads, houses and kindergartens. More and more people from the countryside, and especially young people, were starting to move to the cities where the standard of living was higher compared to the villages (Panov, 2014). In the 1970s and 1980s, new production was introduced only at existing chemical plants, accompanied by a growth in agriculture and textile industries, which were required to produce more. These increased capacities confirmed the establishment of specialisation and high levels of profitability in the chemical industry. In the 1990s, the share of chemical plants was large, accounting for 7.1% of the commodity output of the chemical industry of the USSR. Despite the fact the Belarussian chemical industry produced more than 20% of the volume of their output in the USSR, the attention to environmental aspects in the production were rather limited and centred around ensuring product quality and the reduction of safety risks (Zashev, 2006).

The growth of corporate greening in the industry began after the collapse of the Soviet Union through centralisation of the chemical plants in one system. In the 1990s, the changes included the introduction of environmental protection areas associated with the reduction of hazardous substances and water use; the problem areas of energy, due to dependence on Russia, and air pollution, due to out-dated technology as well as balancing the product price, became important issues (Zashev, 2006). The issue of a competitive price building relates to the fact that their oil is imported from Russia, the cost of raw materials in Belarus constitute about 50% of production costs which is high compared to Western production. Consequently, there is just one opportunity to keep a competitive market position considering the high cost of raw materials by balancing low wages and personnel costs (Sidarenko, 2008). Therefore, a centralisation process was started in 1997 by the creation of a republican government body, Belneftekhim, for the environmental management of the industry. Belneftekhim ensured the extensive implementation of national environmental management systems and ISO certification, which enabled the preservation of the export-orientated industry (Belneftechim, 2016). The main objective of Belneftekhim was the coordination of changes in the environmental laws and the implementation of

projects with high science-intensive and resource-saving technologies. Belneftekhim was subordinated to the Council of Ministers of the Republic of Belarus and, as a Ministry, took responsibility for all necessary monitoring and control, in cooperation with the republican government bodies, local executive and administrative bodies (Azot, 2018).

Following the centralisation of the chemical industry, it entered a new stage characterised by stable growth in production, the manifestation of investment and innovative activity (Sidarenko, 2008). The industry has shown sustained growth in greening activities, even throughout the global financial crisis of 2008, when many international companies began to look for cheaper products. At this stage, ecological certification had grown. Whereas some of the chemical plants adopted only the national ecological certification, many went for both national and international certification. In recent years, major investment projects have been implemented to modernise the chemical plants (Belarusfacts, 2017). During this period, large investment projects have been implemented in Belaruskaliy Plant, and the large-capacity production of sulphuric acid in the Gomel Chemical Plant. Within the framework of the State Programme of Innovative Development in the Chemical Industry of Belarus in the period 2010–2020, several significant innovative projects were also implemented (Dajneko, 2017). The projects have included the introduction of ecologically friendly production of polyester substrates and the production of bi-component fibres in Mogiliov, and the production in Svietlogorsk of the technology fibre Arselon-C, which is used in the production of heat-resistant clothes for firemen, tank operators, and pilots (Atroshko & Luchina, 2015).

Despite the positive developments, the official statistics show do not tell us of the difficulties that the large companies face. For example, because Belarus is not part of the World Trade Organisation, which has prevented them from selling their finished products to consumers abroad, Belarusian chemical plants as a by-product manufacturer have relied on orders from international companies. The volume of production has had to be extended to the Russian and post-Soviet market (Tochitzkaja, 2012).

3.2.2. Three chemical plants for this study

The previous sub-section presented how the socio-historical influences have affected the development of corporate greening in the chemical industry in Belarus. This sub-section reduces the focus to the profiles of the three cases selected for this study (Figure 3.5.).



Figure 3.5: Location of three chemical plants for this study (pictures: author)

Figure 3.5. presents the three chemical plants from three different regions relevant to this study.

The three cases were selected on the basis of priority given to existing corporate greening activities, and the possible practices which first-line managers may use to facilitate employees' environmental learning. Although, as discussed above, all the chemical plants under 'Belneftekhim' have introduced a necessary set of environmental activities, only three companies have produced similar products, chemical fibres and yarns, and thus may exhibit possible similarities in the supply chain process and possible practices which first-line managers may use to facilitate learning for corporate greening in their organisation. At the same time, the three separate cases provide a good diversity across geographical contexts in Belarus, which may give rise to possible differences in perception of front-line managers about the organisational, and wider, social context: Case A is located in the Eastern part of Belarus; Case B is located in the North-Western part of Belarus; and Case C is located in the South-Eastern part of Belarus. Each case

is described briefly below.

Case A established in 1965, is a city-forming enterprise which is located in the Eastern part of Belarus. As it is located close to Russia, there are Russian influences including Soviet monuments and architecture. The plant had a prominent history during Soviet times as it was the first to manufacture fibre in the Belarusian SSR, and was the third synthetic fibre production line in the USSR. The main environmental strategy of Case A is to achieve high quality, occupational safety in order to satisfy customer requirements, maximise profits, ensure safe working conditions and reduce the negative impact on the environment. The firm has certified its quality process according to the ISO 9001 norm, and its green practices according to the ISO 14001 norm. The plant has a department of environmental protection and its own environmental laboratory. This conducts analyses of the composition of industrial gases and water and processes engineering analyses of the metal content in liquids and solid matrices, as well as analyses of the nitrate content of crop products.

Located in the western part of Belarus, Case B is a city-forming company established in 1971 as an independent plant on the river Neman. Following the end of World War II, the territory of West Belarus was ceded to the USSR, while the city of Bialystok and its surroundings was returned to Poland. Thus, the impact of the Catholic religion is visible in the architecture of the region and the language. From 1988 onward, the enterprise established its image as one of the leading producers of yarn in the USSR, and its products were considered to be of the best quality. At present, the firm has transformed structurally from being independent to being part of another large chemical plant which is located in the same place. Case B has obtained quality and environment system certification according to ISO 9001 and ISO 14001 norms, and has adhered to EMS regulations. The plant has an environmental bureau which formally reports to the environmental department of a larger chemical plant. It has had its own laboratory since 1998 which, as with Case A, conducts analyses of the composition of industrial gases and water, and processes engineering analyses of the metal content in water outputs.

Case C, a south-eastern-based enterprise, founded in 1965, is located by the Berezina River. The plant is located close to the Chernobyl zone, which was

affected by a nuclear accident in 1986. Now, the plant manufactures artificial and synthetic fibres with the main objective of increasing the efficiency of its production and its competitiveness based on the use of advanced technologies and equipment. Regarding the environmental field, Case C has obtained the Öko-Tex 100 certificate, the ecological label for the textile sector, which guarantees that the textile products manufactured by the firm are not harmful to consumers' health. Moreover, the plant has certified its quality and environmental management system according to ISO 9001 and ISO 14001 norms and has its own environmental monitoring laboratory to ensure that the company complies with environmental regulations.

3.3. Conclusion of the chapter

This chapter illustrates some important socio-historical influences of Belarusian state-controlled firms in the chemical industry that affect the business environment of large companies in Belarus and their environmental activities.

The chapter presents the socio-historical development of corporate greening in Belarus, which is relevant as it creates ambiguity in the learning environment of employees. This includes societal changes, changes in the institutional framework, and the economy in relation to environmental protection. First, there have been major societal changes in the ideology and lifestyle of the Belarusian people. The new Constitution gives a basis for legal changes, with impact on environmental aspects. Second, there have been significant changes in the legal and institutional framework in relation to corporate greening in the shape of one instrument of command and control of all firms operating in Belarus. Finally, there have been changes in the economic environment which have impacted on firms' activities which determine the individual and organisational learning processes. On the one hand, the state-controlled forms of ownership have created a state-focused collaboration within and beyond the organisations in Belarus. On the other hand, increased international competition has forced the companies to price aggressively in their 'green' activities.

Furthermore, the chapter shows how the socio-historical context in Belarus is embedded in the chemical industry, which is one of the leading industries in the economy. The chapter shows that the use of raw resources, energy use, and water intensity indicate the production of fibre and yarns is the most resource-

intensive and polluting branch of the chemical industry. It shows that the chemical industry in Belarus is one of the most state-controlled industries. The cross-country sets of actors create special conditions for environmental knowledge exchange between the three selected chemical plants, which builds to a unique learning environment for 'green' communities of practice. These plants exist in a diversity of locations that cover the geographical regions of Belarus. More details on the similarities and differences between the plants will be provided in the subsequent chapter: 'Methodology'.

CHAPTER 4: METHODOLOGY

The purpose of the current chapter is to provide an overview of the qualitative case study methodology used to address the research question. This justification begins broadly in scope, and then gradually narrows until the specific methods for the qualitative study and the role of the researcher are outlined. The chapter is divided into five sections. Section 4.1. outlines the philosophy of business research, and then describes the epistemological and ontological assumptions of this thesis. Section 4.2. investigates the predominant methodologies within situated learning theory. It argues that the qualitative case study methodology seems the most suitable for exploring the research question. Section 4.3. provides justification for the multiple case study design used in this study. Section 4.4. focuses on the selection of qualitative methods and the methods used during data collection and analysis to achieve qualitative rigour in this research. This is followed in section 4.5. by an acknowledgement of ethical considerations, and the researcher's role as an integral part of the research. Section 4.6. summarises the chapter.

4.1. Research Philosophy

This section looks at the ontological and epistemological underpinnings of this study, and details the research approach.

A research philosophy is a belief about the way in which data about a phenomenon should be gathered and analysed (Easterby-Smith et al, 2012). Michael Crotty (1998) argues that there should be a consistent development from epistemology to a theoretical perspective, to methodology, and finally to the specific methods adopted in the research. Considering this approach, it is useful to reflect on these elements for this research.

To start with the selection of a relevant ontological and epistemological position, according to Bryman and Bell (2015) and Easterby-Smith et al. (2012), a philosophical underpinning about business research should consider two points: epistemology and ontology. Easterby Smith et al. (2012, p. 31), define

epistemology as the *'general set of assumptions about the best ways of inquiring into the nature of the world'* and is inherently related to ontology, which is defined as *'assumptions that we make about the nature of reality'*. Bryman and Bell (2015) note that there are a variety of different epistemological positions and they classify business research into two broad strands, positivism and interpretivism. Positivists believe that reality is stable and can be observed and described from an objective viewpoint. By contrast, interpretivists maintain that reality can be understood only through the subjective interpretation of, and in, reality. A positivist epistemology assumes that knowledge is obtained from the observation of phenomena, the deductive generation of hypotheses and the gathering of facts in an objective manner (Bryman & Bell, 2015). According to Bryman and Bell (2015), positivism is associated with an objectivist ontology which asserts that social phenomena and their meaning have an existence that is independent of social actors. Research from a positivist epistemology seeks, through observation, to discover the laws that govern social phenomena. Specifically, positivists highlight that the phenomena should be studied without interference from the researcher. In contrast, the interpretivist philosophy acknowledges that the researcher cannot avoid affecting the phenomena they study because the study of the phenomena takes place in its natural environment and context (Lee T. , 1999). According to Bryman and Bell (2015), an interpretivist epistemology argues that social science research cannot find causal explanations for human actions, and that social science research should aim to understand human action and the meaning humans attach to social reality. This epistemology is associated with a social constructionist ontology, which asserts that *'social phenomena and their meanings are continually being accomplished by social actors ... (and) are produced through social interaction'* (Bryman & Bell, 2015, p. 20). Thus, interpretivist-based research seeks to understand how people make sense of social phenomena. The research undertaken for this dissertation adopts an interpretivist paradigm.

As Table 4.1. illustrates, the ontological position of this research is located within an interpretivist paradigm which assumes that many social realities co-exist and include a variety of human experience and knowledge, views and interpretations of their experiences (Collis & Hussay, 2003). Hence the position taken in this study is to match its purpose and context.

Ontology	Interpretivism assumes phenomena are constructed through interpretation and social interaction
Epistemology	Constructivist epistemology holds that meaning is constructed through individual minds interacting with the world
Theoretical perspective	Situated learning is a learning paradigm which assumes that learning takes place in a contextual environment
Methodology	Qualitative case study
Methods	Methods which generate subjective meanings: emic data collection (from the perspective of the subject) and inductive analysis

Table 4.1: Philosophy of this thesis
(Adapted from Eriksson & Kovalainen, 2015)

The purpose of the study is to provide a context-rich account of front-line managers' experiences in their role as a facilitator for learning for corporate greening in a post-Soviet context. By contextualising the individual actions of front-line managers, the study is concerned with the perceptions of an under-researched group of employees, i.e. first-line managers. Furthermore, the legacy of the Soviet Union in these countries has continued to infuse firm activity and, in this way, the processes regarding practices for facilitating learning for corporate greening may be influenced by the existing practices inherited from the Soviet Union (Crotty, 2016; Crotty & Rodgers, 2012b). There is evidence that the role of Soviet ideology is an important influential factor in the firm-employee relationship and in environmental responsibility (Apostol & Näsi, 2014). Consequently, how first-line managers interpret the situation about their learning environment for corporate greening in Belarus, as well as their facilitating practices in an unresearched context, provides a basis for deriving potentially new insights into the question of facilitating learning for corporate greening by front-line managers.

The epistemological position specifies the nature of knowledge and the relationship between the researcher and the way she/he obtains knowledge through research enquiry (Collis & Hussay, 2003). Constructivist epistemology

holds that meaning is constructed through individual minds interacting with the world, which also implies that people in different cultures construct meaning in different ways (Crotty M. , 1998). This epistemology entails an ontology that assumes phenomena are constructed through interpretation and the social interaction of front-line managers. In this study, Belarussian first-line managers are involved in corporate greening in chemical plants in Belarus, and make sense of their social reality through, for example, their conversations, meetings, and by other means. As the research investigates the context of a post-Soviet country, it is likely that the research participants will construct knowledge of their social reality differently from their peers in Western contexts. This includes (as outlined in Chapter 2, section 2.2.4) differences in societal and political influences on managerial perceptions, the formal practices of a planned economy inherited from the Soviet Union, as well as employees solving their problems in 'green' communities in both a formalised as well as informal way. Therefore, a constructionist epistemology is adopted for the research that looks for meaning-making constructions of individuals about their learning for corporate greening, and engagement with environmental practices.

Regarding the theoretical perspective, this thesis draws on research from an interpretivist ontological perspective. It aims to contribute knowledge of facilitating practices used by front-line managers in a post-Soviet context from the perspective of an emerging paradigm of learning which assumes that learning takes place in a contextual environment. Situated learning theory aims to explain knowledge sharing and acquisition by social solidarity because learners operate within a same virtuous circle of cooperation with mutual benefit and shared purpose (Lave & Wenger, 1991). Studies based on situated learning theory operate with the view that workplace learning is occurring when individuals are socialised within established sets of practices (Wenger, 1998). Here, people socially and symbolically construct their own meaning about the world around them and the actions that they manifest in that world. Consequently, the selected theoretical perspective helps to generate a better understanding of how people perceive and interpret their role in facilitating learning toward corporate greening.

Hence, a qualitative research methodology was found to be appropriate to investigate the processes by which first-line managers facilitate learning for corporate greening. The inductive analysis is congruent with the philosophical

and theoretical perspectives underlying this study. This would allow the use of different qualitative methods within the same study, for example applying different methods of analysis to the same dataset for a qualitative approach where different methods with complementary strengths could be used as appropriate (Dewe & Coyle, 2014).

As epistemology and theoretical perspective relate to a methodology which uses qualitative analysis and methods, the methodology and methods are elaborated in the two subsequent sections: 'Methodology' and 'Methods'.

4.2. Methodology

The most important methodological choice a researcher makes is based on the distinction between qualitative and quantitative data (Bryman & Bell, 2015). This section discusses different methodological approaches under selected theoretical paradigm – situated learning - and gives the reasons for the selection of a qualitative case study methodology for this study.

4.2.1. Research methodologies in situated learning

This section gives an overview about methodologies used in situated learning theory to help to make a right methodological choice. In contrast to conventional, cognitivist theories of knowledge and learning, which mainly use quantitative methodologies, the methodological approach to study situated learning emphasises the relational and structural aspects of learning, which help to study embedded learning within the activity, context and culture (Lave, 1988). Therefore, the methodological choice lays in the selection of qualitative methodology to study situated learning of front-line manager as a dynamic transformational process of identity construction, which happens in a post-Soviet context.

As in much of social science and business and management research, research methodologies in situated learning are broadly classified into qualitative and quantitative (Denscombe, 2008). Whereas some scholars (Miles & Huberman, 2002) value qualitative research methodology because it focuses on an in-depth examination of research issues, others argue that quantitative design provides a broader understanding of issues under investigation (Harrison et al., 2001). There are several studies on situated learning which use a mixed methodology

approach to investigate learning processes in organisations (Denscombe, 2008; Wang & Chugh, 2014; Tam & Gray, 2016). However, Nyame-Asiamah and Patel (2009) recommend that the methodology to study learning in an organisation is selected based on the purpose of the study. Because the core idea in situated learning is that learning and knowledge acquisition best occurs in context and is significantly enhanced through social interaction, qualitative methods are more applicable for this research as it intended to investigate facilitating practices and examine learning processes which is difficult to quantify.

Despite the fact that the idea of situated learning was introduced by Lave thirty years ago, empirical studies using the theory for sustainable development or environmental issues have made progress over the last number of years. However, the majority of the empirical studies which use situated learning as a theoretical lens, apply qualitative research methodology. The table below presents an overview of the methodologies.

Level of interaction	Representative studies	Methodology	Communities and members
Team level	(Oborn & Dawson, 2010)	Qualitative ethnographic methods	Two multidisciplinary cancer teams in different UK hospitals to decide on patient management issues
	(Iverson & McPhee, 2008).	Qualitative: observation, and interviews	Volunteers for disaster times of an organisation (country unknown)
	(Swan & Scarbrough , 2003)	Qualitative: semi-structured interviews	Communities for innovation among the company
	(Pyrko, Dörfler, & Eden, 2017)	Qualitative case studies	NHS members in the UK Scotland are observed in two communities of practice
Organisational/ Cross-departmental	(Bechky, 2003)	One-year ethnographic research	Between occupational communities in a semiconductor equipment manufacturing company in the United States
	(Carlile, 2004)	Qualitative case study	The functional groups are involved at different stages from design to production of innovative engine/power
	(Weller, 2017)	In-depth case study	Global organisation based in the United States with cross-

			departmental communities of practice to implement CSR
Industry	(Reed, Godmaire, Abernethy, & Guertin, 2014)	Qualitative semi-structured interviews	Communities of practice about implementation of sustainability practices among regions and academia-practitioners in Canada
	(Benn, Edwards, & Angus-Leppan, 2013)	Qualitative case study	Higher education sector in Australia
Country	(Madsen & Noe, 2012)	Qualitative semi-structured interviews	The environmental authorities in Denmark, the Agricultural Advisory Service, agricultural researchers from Aarhus University and 20 farmers from the three catchment areas.
	(Benn & Martin, 2010)	Qualitative semi-structured interviews	Communities of practice across multiple intersecting communities: University (as a business unit) and the Water Users of the local province in China

Table 4.2: Overview of the methodologies of empirical studies using situated learning, (Author)

Table 4.2. provides an overview of empirical studies using situated learning. The studies analyse interactions of communities or practice at team, cross-departmental, industry and country levels. As the table presents the majority of the studies which use situated learning reflect qualitative methodology which helped to identify the preferable type of methodology for this thesis.

Another reason to use a qualitative methodological approach is the context of the study. Bell (1993) suggests that the qualitative methodology is appropriate if a study is aimed at answering questions that cannot be easily reduced to numbers. Also, a qualitative methodology is suitable when there is little known about a specific phenomenon or context, and in-depth and broader information about the phenomenon is needed (Bell, 1993). The current study aims at investigating the practices by which first-line managers seek to facilitate learning for corporate greening in their organisation in a specific (post-Soviet) context which has not yet been explored. Given the researcher is interested in understanding phenomena and practices as they are experienced by the research participants, an exploratory qualitative methodology (Bryman & Bell, 2015) was deemed to be appropriate for this study.

4.2.2. Qualitative research methodological approaches

A number of qualitative research methodological approaches in the situated learning paradigm were considered for this study. In particular, situated workplace methodological approaches such as workplace ethnography, action research and the case study approach, which are discussed in the following.

The first qualitative research approach is ethnography. The approach brings researchers closer to where the action takes place and reveals the worldview of people and demonstrates their daily cultural meanings (Spradley, 2016). As one methodological strategy, ethnography is helpful in obtaining rich information over a longer period of time to challenge conventional practices and assumptions (Hammersley, 2017). There are some disadvantages to this method. Ethnographical inquiry is time-consuming in terms of collecting and analysing data and then producing the final report (Nyame-Asiamah & Patel, 2009). A prolonged ethnographical inquiry has also been found to be problematic in studies where the research is conducted in busy commercial business environments where broad organisational involvement is difficult to achieve (Cohen, 2013).

Another considered approach is action research, which is often called participatory action research. The methodology involves the researcher working collaboratively with practitioners to not only investigate a workplace phenomenon, but to help the organisation to improve its practices (Whyte, 1991). Action research can be appropriate for situated learning research because actors are seen as embedded in existing social relationships, they are knowledgeable, and are, therefore, able to reflect upon and potentially transform practice (Kakavelakis & Edwards, 2012). Action research also provides a link to studying sets of social values in a learning environment (Savin-Baden & Wimpenny, 2007). However, one critique of action research methodology relates to the difficulty of conducting it as an attempt to solve practical business problems, while at the same time writing up the results which contribute to the theory (Myers, 2013). There can also be ethical issues related to potential conflicts of interest between the action researcher and the organisation being studied (Rapoport, 1970; Easterby-Smith et al., 2012). Although the approach would be suitable to this study, the main focus of this research was to understand how front-line managers facilitate learning for corporate greening, not to try to improve practices

through the research. Furthermore, it seemed difficult to organise action research activities in a chemical plant for safety policy reasons.

Finally, a case study approach has been used in some situated learning studies (Benn & Martin, 2010; Chenven & Copeland, 2013). It involves the use of multiple sources of evidence to investigate a phenomenon within its real-life context, particularly when the differences between the phenomenon and context are not clearly apparent (Yin, 1989, p. 23). In many instances, a case study approach is categorised as qualitative research (Myers, 2013). It can be combined with ethnography (Pahl-Wostl & Hare, 2004) or other qualitative techniques (Cohen, 2013). In other instances, a quantitative case study approach can be adopted to investigate the patterns of learning in different contexts (Myers, 2013). Some of the potential drawbacks of case study research are that it can take a long period of time to negotiate access (Nyame-Asiamah & Patel, 2009). Also, changes in the organisations can hamper the research, especially if the key people are transferred, redeployed or cease to work (Myers, 2013).

This study adopts the case study methodology because it can be conducted through in-depth interviews within a shorter period of time than an ethnographic approach (Yin, 1989). Another reason for the selection of the qualitative case study approach is the fact that the current research project is guided by a constructionist epistemology which highlights how people make sense of the world using language as a medium for sharing their experiences (Crotty, 1998). When people decide to adopt 'green' practices, they consider not only the functionality, usability, costs and intended outcomes, but also what these practices mean to them; for example, the way they reflect their values, knowledge, skills and the similarities within the group (Jabbour, 2011; Unsworth et al., 2013). Therefore, the case study approach seems to be the most appropriate to use in this study.

4.2.3. Selecting qualitative case study methodology

This section justifies three methodological choices of this research: one – qualitative versus quantitative case study, and second – type of case study methodology, and finally – a single versus a multiple case study. The section suggests selecting a multiple case qualitative study design.

The first decision concerns the selection of a qualitative versus quantitative case study. Existing literature distinguishes two key approaches that guide the case study methodology; one was proposed by Robert Yin (2003, 2006), and the second by Robert Stake (1995). A case study is an empirical study that investigates a contemporary phenomenon in depth and in its real-life context (Yin, 2009, p.18). Yin (2003) explained *'the case study inquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points'* (p. 18). This suggests that Yin's approach holds a positivist epistemology that requires building theoretical propositions to sensitise the research and guide data collection, which is not appropriate for this study (Table 4.3.).

	Robert Yin	Robert Stake
Assumptions	Positivist approach	Interpretivist approach
Nature of reality	Object, tangible single	Socially constructed
Goal/Objective	Prediction	Understanding
Knowledge generation	Time-free, context-independent	Time-bound, context-dependent
Views of causality	Separation between researcher and subject	Multiple, simultaneous actors shaping events
Research relationship	Separation between researcher and subject	Interactive, co-operative, with researcher being part of phenomenon
Generalisation	The results of the research can be applied to a wider population	'Naturalistic generalisation'

Table 4.3: Research perspectives in case study methodology
(Adopted from Solomon et al., 2006)

As Table 4.3. presents, Stake's case study methodology, in contrast to Yin's methodology, is different in many respects, including differences in ontological and epistemological assumptions, as well as the objective and methods used. In particular, Stake (2006) views a case as a bound system, e.g. a learning situation at work, and considers the research relationship as interactive and co-operative. Furthermore, in Yin's positivist work, the concern of external validity often lies in demonstrating that the results of the research can be applied to a wider population. However, a contrasting view is offered by Stake (1995), who makes explicit the 'naturalistic generalisation' or 'petit generalisation' feature of the case study. Stake (1995) highlights that each case may be unique, and is an example

within a broader group. Stake (2013) suggests achieving transferability by selecting an appropriate sampling strategy and asking a question if the findings of the study can be applied to other situations (as will be discussed later in this section). Taking these considerations into account, the approach of Stake seems to be in line with the epistemological and methodological assumptions of this research.

The second methodological choice is about the type of case study methodology to be chosen. Stake (1995) emphasised that the type of case study chosen depends on the purpose of the inquiry, and identifies case studies as intrinsic, instrumental, or collective (Stake, 1995, 2005, 2006, 2013). Whereas an intrinsic case study is done to learn about the unique phenomenon which the study is focused on, and the researcher defines the uniqueness of this phenomenon which distinguishes it from all others, an instrumental case study provides a general understanding of a phenomenon using a particular case (Stake, 2015). The difference between these two types of study is not the case but the purpose of the study. An intrinsic case study helps to get a deeper understanding of a certain case (Stake, 1995). The purpose of an intrinsic case study is about exploring a specific situation, and is guided by the interests of the researcher. By contrast, an instrumental case study (e.g. person, specific group, occupation, department, organisation) is to provide insight into a particular issue, redraw existing generalisations, or build theory. Thus, in instrumental case study research, the case facilitates the understanding of the new phenomenon and provides a base to understand other issues; the case is of secondary interest to the researcher, and used to support other interests (Stake, 1995).

Considering the purpose of this study is to increase understanding of how front-line managers in Belarus facilitate learning in corporate greening, the instrumental type of qualitative case study methodology is appropriate. This means that when studying the managers' agency for facilitating the learning process for developing of new environmental knowledge, values and skills in these communities of practice (Wegner, 1998), may face learning problems. This is because environmental knowledge management in a post-Soviet context has been changed since 1991. As mentioned in the background chapter, some studies have identified that the employees in companies with a Soviet-style of learning need to break with the administrative heritage (Dixon et al., 2007), and

provide the necessary conditions for the learners to initiate learning for corporate greening in their organisations. It is unknown what type and scope of learning environment the Belarussian managers have. It is also unknown how first-line managers facilitate learning for corporate greening and changes in their practice as facilitators. Therefore, using this methodology will provide insight into particular issues and challenges that first-line managers may have when they facilitate learning for corporate greening. The instrumental case methodology may also help to redraw existing generalisations about voluntarily engagement in corporate greening, which is dominant in the Western literature, by examining front-line managers' learning pattern in the process of generating new facilitating practices that enable disengaged workers to participate in 'green' practices.

The final methodological choice relates to a single versus a multiple case study. Stake highlights that a single case study is useful to study a situation in which the case is happening. A case is a noun, a thing, an entity; it is seldom a verb, a participle, a functioning (Stake, 2006). Stake (2006) views a case as a bound dynamic item which acts purposively, encounters obstacles, and interacts with other cases; for example, a learning situation. It has stages of life which only the research participant can observe, and incorporates a sense of history. A history and the future are part of the picture (Stake, 2006). Although the single-case design is useful to adopt in situations where there are no other cases available for replication (Zainal, 2007), single-case study design has been subject to a number of criticisms, the most common of which concerns the inter-related issues of methodological rigour, researcher subjectivity, and transferability (Willis, 2014). The single-case study is considered 'microscopic' because of the limited sampling of cases (Yin R. , 1989). In addition, a single study could affect the rigour of the study because, as Yin (1989) has noted, 'too many times, the case study investigator has been sloppy, and has allowed equivocal evidence or biased views to influence the direction of the findings and conclusions' (p.21). Given the focus of the study on socio-historical influences, the selection of a single study design may provide potentially misleading findings. As discussed in Chapter 3, there are potential differences between regions in Belarus in terms of their cultural and economic situation. These differences may be reflected in the perceptions of the front-line managers regarding their practices used differently to facilitate learning for corporate greening in their organisations. To address this

issue, collective or multiple case studies are used to draw thematically from several cases. A multiple case study design is vital for this study because the Belarusian context offers a large scale of uncertainty and ambiguity due to massive changes over the last 26 years in technologies, regulations, and societal expectations (as discussed in Chapters 2 and 3). These changes may have affected the perceptions of managers about their role in 'green' activities and practices, which may differ from the perceptions of managers in a Western context. Also, changing social norms and regulations may affect their perceptions of operational decision-making regarding a greater use of environmental practices (Sharma et al., 2007). Consequently, the environmental ambiguity of the Belarusian context may encourage managers to facilitate different experimentation with new 'green' practices or innovative approaches with their team and organisation. In this way, the multiple case study design helps us to study the 'functioning' of something, which cannot be done in a single case (Stake, 2006).

The advantage of the multiple case study design in this study is that it not only helps the researcher to explore the data in the real-life environment of front-line managers in chemical plants in Belarus, but also helps to explain the complexities of their real-life situations, which are constructed by socio-historical influences which may not be captured through a single case study design. Furthermore, multiple case studies are thought to be better able to achieve rigour than a single-case design because they give us an opportunity to compare within and between cases (Zainal, 2007). Multiple or collective case studies investigate whether there are similarities or differences among the cases' characteristics to get a better understanding of particular points of interest (Stake, 1995). For these reasons, the instrumental multi-case study methodology was deemed an appropriate method of inquiry for this study.

4.3. Multiple case study design

The qualitative multiple case study design of Stake (2015) has been adopted to gain insight into different interpretations of the challenges and ambiguities associated with the adoption of 'green' practices in different Belarusian companies. This section presents the main elements of the multiple case study design needed to be considered, including the units of analysis, the number of cases, and the sampling strategy.

4.3.1. Unit of analysis

The central element of the case study design is the unit of analysis, which, according to Stake (2015), can focus either on individuals, organisations or activities. In this study, the unit of analysis is the practices of individual front-line managers who seek to facilitate learning for corporate greening. By targeting facilitation practices as the unit of analysis, the analysis adopts a practice-based perspective because these units of analysis are embedded in the context of an organisation. This perspective permits the understanding of boundaries in practice, and the role of agents in spanning the boundaries (Levina & Vaast, 2005). Boundary work means that agents develop a continuity in their local practices which allows them to act knowledgeably in a particular historical and social context (Lave, 1988) and, simultaneously, to distinguish themselves from others who do not practice specified matters in a similar way (Wenger, 1998). In this way, agents develop a new category of practices that help to generate new organisational capability to react to challenges (Carlile, 2002). Therefore, identifying these practices in which the front-line managers in Belarus are engaged is important for the design of this study.

4.3.2. Selection of cases

A key feature of the design of case study research is the number of cases included in a project. In order to decide about the number of cases, literature provides different recommendations. Creswell (2013) stated a preference for selecting cases that '*show different perspectives on the problem, process, or event I want to portray*' (called 'purposeful maximal sampling') (p. 75), but stated that he also may select '*ordinary cases, accessible cases, or unusual cases*' (p. 75). Stake further suggests that '*the first criterion [in case selection] should be to maximise what we can learn*' (Stake, 1995, p. 4). In order to achieve this, the country background, determined by regional differences, is taken into account as a main criterion for selecting the number of cases in this study. Three case study companies were ultimately selected from a potential 19 largest companies within the Belarussian chemical industry (Chapter 3, Figure 3.4.). This seemed to be sufficient to: (a) give a variety of different perceptions about learning environments in a variety of regions, company sizes, organisational structures, technological bases and environmental practices; and (b) offer sufficient

complexity of interactions between learners and facilitators towards the greater use of environmental practices to allow sufficiently rich data to be collected.

The reason for the selection of the chemical industry is threefold. First, studies suggest that managers of the companies from resource-intensive industries see more benefits from environmental activities than managers from service or technology industries (Kiron et al., 2012). Second, the chemical industry is one of the largest sectors of the Belarussian industrial landscape, which helps to increase the potential transferability of the insights gained from this study to other Belarussian industrial contexts, and to industries in other countries in transition (Chapter 3, Figure 3.3.). Finally, the sectoral structure of the chemical and petrochemical industry in Belarus is characterised by great diversity, including the number of employees, the volume of production, and the variety of products (from chemical fibres and threads, potassium fertilisers, to basic chemicals and petrochemicals). At the same time, it has undergone considerable managerial and operational changes over the last 26 years (as explained in more detail in Chapter 3). It is also historically the most developed industry in the country compared to industries such as the service or textile industry, which have developed more recently in Belarus. This means that the employees of the chemical enterprises may be familiar and able to compare the situation before the collapse of the Soviet Union and the new environmental practices which have been introduced during the post-Soviet period. Consequently, this industry offers a good basis for gaining in-depth and varied insights into the research problem.

The cases were selected according to a purposive sampling strategy. Purposive sampling is a non-probability sampling method which occurs when the characteristics selected for the sample are chosen by the judgment of the researcher (Rojon & Saunders, 2012). In this case, the selection criteria included different timings of the introduction of an EMS, different locations (relevant for social perceptions), ownership types (variation of state-controlled mechanisms) and number of employees, product range, and extent of export activity. The companies are introduced in detail in Chapter 3. Here, Table 4.4. gives an overview of the three case study companies in terms of the regional location and size of the organisations, as well as what is *'common and what is particular'* about each of the organisational settings.

Organisation profile	Case A	Case B	Case C
Sector	Oil and petroleum	Oil and petroleum	Oil and petroleum
Industry	Chemical	Chemical	Chemical
Part of 'Belneftekhim'	Yes	Yes	Yes
Ownership	Open Joint Stock Company	Open Joint Stock Company	Open Joint Stock Company
Shares	The structure: The State Property Committee - 90,5416 %, Legal entity – 9,413 %, Individuals - 0,0454 %	From 2011, part of another large chemical company. Authorised fund is unknown.	The authorized fund belongs to the state share – 100 %.
Geographic location	Located in a capital of a region ('oblast') in the eastern part of Belarus	Located in a capital of a region ('oblast') in the north-western part of Belarus	Located in a small town in the south-eastern part of Belarus
Year of establishment	1968	1975	1965
Employees (2016)	6,112	2,127	3,856
Products	<ol style="list-style-type: none"> 1. production of organic synthesis 2. the production of synthetic fibres 3. the production of technical yarns 4. the production of synthetic films 5. mechanical repair 	<ol style="list-style-type: none"> 1. nylon industrial yarn and tire cord fabric plant 2. nylon industrial and cord yarn plant 3. workshop for production of plastics 	<ol style="list-style-type: none"> 1. polyester textile yarns plant 2. synthetic fiber plant
Main markets	Belarus, Russian Federation, Ukraine, Moldova, Kazakhstan, the countries of Western Europe (Germany, Poland, Italy, Slovenia), Lithuania, Serbia, Turkey.	France, Belgium, the Netherlands, Bulgaria, Brazil, Egypt, China, India, Iran, Turkey, Serbia.	Russia, Ukraine, Poland, Slovakia, Germany, Italy, France, Romania, the Baltic States.
Environmental protection	EMS was established in 2009, ISO4001 and ISO9000; Strong integration of HR practices based on Soviet ideology, limited integration into OHS	EMS was established in 2004, ISO certificates ISO4001 and ISO9000 certified by international body; flat hierarchy and networking, it is rather stand alone, limited integration into HR and OHS	EMS was established in 2009, ISO certificates ISO4001 and ISO9000; strong marketing orientation and getting Oeko-Tex Standard 100 for their products, strong integration into HR and OHS activities

Table 4.4: Profiles of Organisations

Given that only three cases were selected, it was relevant to reflect on achieving transferability or 'naturalistic generalisation' in the case study (Stake, 1995). This will be achieved by selecting multiple sources for data collection and multiple theoretical lenses to analyse the data, which will facilitate the transferability of the study findings to, and help to make a judgement about, other front-line managers and organisations in similar contexts. The idea here is not to make general conclusions about socio-historical influences but to provide tentative suggestions about how front-line managers in a post-Soviet context facilitate learning for corporate greening which might be different to their colleagues in Western context. Consequently, these suggestions will be pursued further and tested by other researchers using a larger sample size and examples from other countries.

4.3.3. Sampling strategy

A purposeful sampling approach, as presented earlier, seems to be the most suitable to select research participants for the multiple case study. The argument for using this approach is that the researcher chooses the sample based on who they think would be appropriate for the study (Patton, 2002). This is used primarily when there is a limited number of people that have expertise in the area being researched (Saunders et al., 2012).

This study is interested in finding out how front-line managers facilitate learning for corporate greening in their organisation, and the practices they use to guide participation of other learners at work towards 'greener' ways of working. As discussed in Chapter 1, a first-line manager in Western context is a person who possesses delegated authority to take decisions at operational level, and has some formal authority over employees (Hales, 2005). In Belarus, the first-line managers in the chemical industry are engineering-technical staff (in Russian: '*enzhenerno-tekhnicheskie rabotniki*'). According to the official site of the Ministry of Labour, the engineering-technical staff are employees with higher or secondary chemical engineering education, and are engaged in the organisation or management of production processes in the enterprise (Ministry of Labour, 2017). All three levels of employees in Belarus are presented in Figure 4.1.

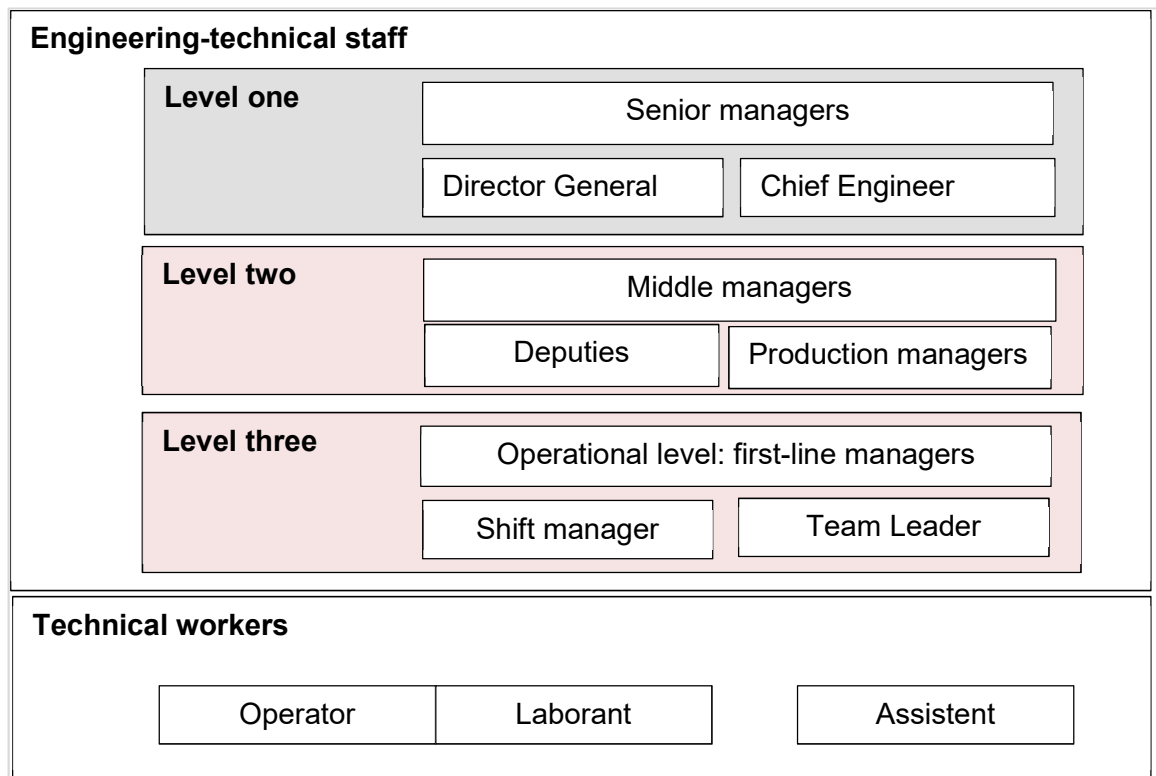


Figure 4.1: Hierarchical structure of Belarusian chemical industry (Author)

Figure 4.1. presents two main staffing groups in manufacturing industries in Belarus - engineering-technical staff and technical workers. There is a significant difference between these two groups of staff. Whereas engineering-technical staff hold formal responsibilities for supervision as well as for environmental protection which are written into their job descriptions, technical staff do not have formal responsibilities and rely on orders from their colleagues - engineering-technical staff – who have the relevant education and experience for decision-making. There are engineering-technical staff in Level One, which includes senior managers such as directors general and chief engineers. Level Two consists of middle managers, who provide the necessary support to the main production sites. The third level of occupational hierarchy consists of first-line managers who are responsible for managing their teams at the operational level. The focus of this study is on engineering-technical staff who represent third level. This level of engineering-technical staff is responsible for implementation of environmental strategies and production, placed closest to the employees and, consequently, have the greatest influence in facilitating the learning process of corporate greening.

Given that the main objective of the research is to identify the different views and perspectives of employees of their engagement, the sampling strategy focuses

on searching for participants who cover the spectrum of relevant characteristics. The criteria included the role of engineering-technical staff, which is engaged in the facilitation of learning through their supervisory responsibility for employees, and their willingness to discuss their facilitation of learning for corporate greening. The criteria were fine-tuned during data collection. Originally, the selection of participants was determined by the literature in thematic areas such as the integration of environmental management into HRM. Therefore, three types of participants were proposed for this research: Environmental Manager (EM), HRM managers, and front-line managers from production. However, after an initial conversation with the Head of Department for Environmental Matters of Case A plant, it was obvious that the learning for environmental protection was not only facilitated by these two departments (EM and HRM), but two other departments. First, the Department for Innovation and Rationalisation Proposals and the Department of Energy Power facilitate the engagement of employees in green practices through a formal process for the initiation and motivation (rewards) of green innovation or innovation associated with the environmental impact. Second, the Laboratory of Control Mechanisms for the Environment monitors the environmental aspects of the company, and reports any environmental issues that create pressure on employees to solve them. Therefore, representatives of these departments, and who are front-line managers, were included in the selection criteria for this study. The list of participants interviewed in this study is presented in Appendix-IV.

Appendix-IV lists all 52 (25 female and 17 male) participants that have been interviewed in this study. The list presents the composition of participants across three chemical plants: 26 participants were interviewed in Case A, this being the largest plant with 8,000 employees; 13 participants in Case B; and 12 participants in Case C. All research participants are front-line managers who have a supervision responsibility for a number of employees. The number supervised varies from 1 to 34. In addition, the list presents which of the participants have additional semi-formal roles through being authorised for environmental protection and innovation (a commissioner for environmental protection and a commissioner for innovation and rationalisation, respectively) ¹¹. These semi-

¹¹ The role of commissioner for environmental protection and commissioner for innovation is a semi-formal one, and it is prescribed by law that every large company should have a responsible person in each shift and each division of production. The role can be 'given' and the role can be 'taken' voluntarily.

formal roles foresee that the commissioners are the first point of contact for any requests regarding environmental issues, arranging documentation, or reporting. As the focus of this study is on environmental protection, the majority of the front-line managers are authorised for environmental protection matters. However, some of the front-line managers have an additional formal role for the innovation and rationalisation process. As with the role of the commissioner, this involves similar responsibilities in being a first point of contact for any innovative ideas and in helping employees with the documentation and the process of innovation. This information is important because the research participants reported their recent engagement in environmental innovation, which is part of the participant selection criteria.

The research design for the instrumental multiple case study in this study is summarised in Figure 4.2.

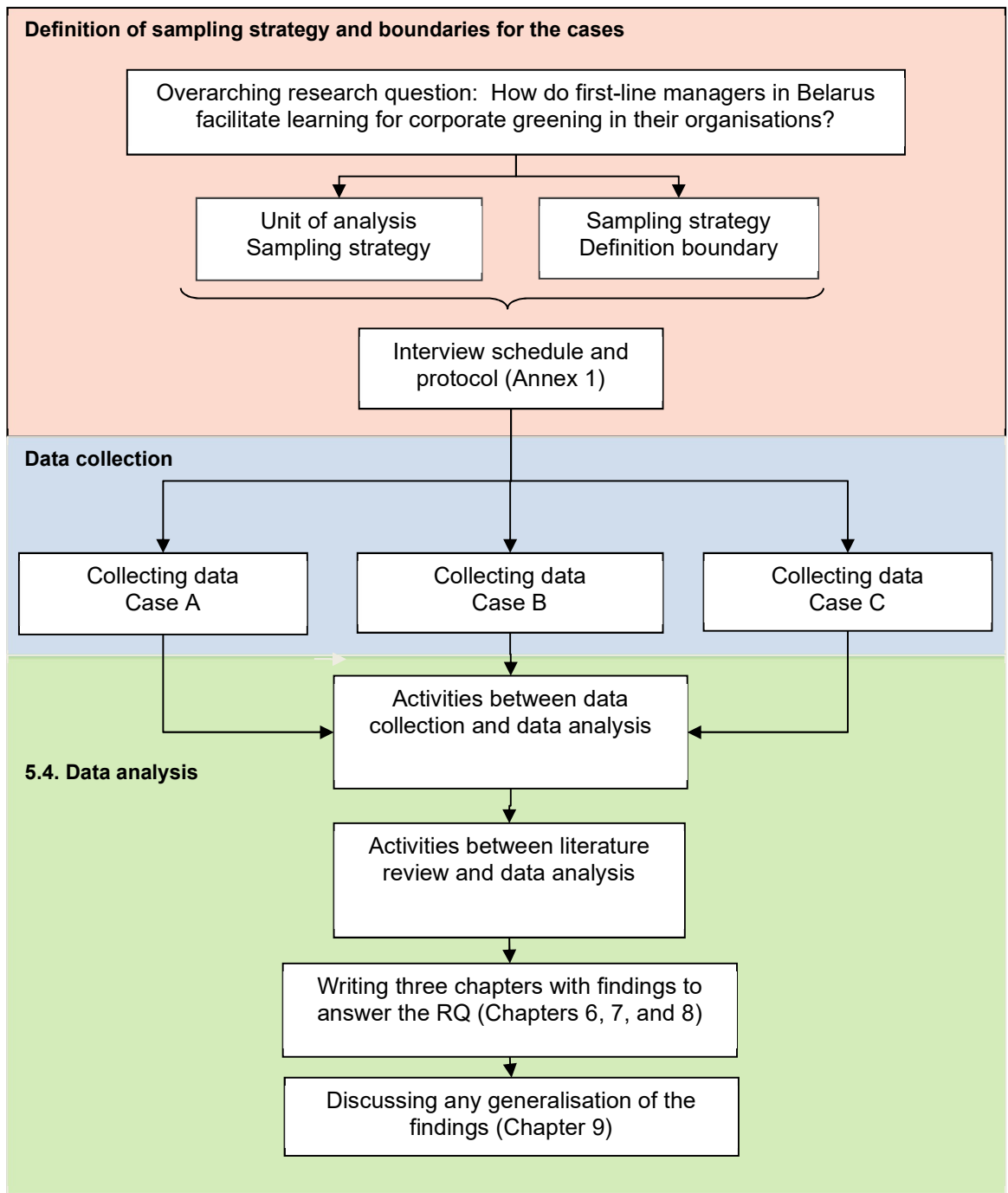


Figure 4.2: Research design for an instrumental multiple case study (adopted from Stake, 2013)

This methodology will be discussed below.

4.4. Methods

Whereas the previous section outlined the methodology of the thesis, this section looks specifically at the research methods employed in this research.

4.4.1. Selecting appropriate qualitative methods

Qualitative methods are aimed at representing in-depth interpretations of the everyday realities associated with the specific phenomenon studied here, and do so in good faith (Myers, 2013). Using appropriate qualitative methods may help the researcher to answer the research questions of the study. Therefore, the selection of methods for both data collection and data analysis are important methodological choices.

Data collection	Data analysis
<ul style="list-style-type: none"> • Self-study • Focus groups • Participant observation • Interviews • Document analysis • Direct observation 	<ul style="list-style-type: none"> • Coding • Constant Comparative Method (Grounded Theory) • Cross-case analysis • Member checking (returning data to the research participant for check) • Auditing

Table 4.5: Overview of qualitative methods

(Source: Johnson & Gill, 1997, pp. 159-161; Hammersley & Atkinson, 2007, pp. 183-185).

Table 4.5. summarises the main qualitative methods. The qualitative methods for data collection include interviews, focus groups, self-study, participant observations, document analysis, and direct observation. The popular methods used for data analysis for multi-case studies are coding, cross-case analysis, member checking and auditing. The main criteria for the selection of appropriate methods is the achievement of construct validity. The data analysis should include strategies for internal validity, interpreting the observations and explaining any variation. In this way, a combination of methods allows the researcher to benefit from all methods to achieve the rigour of a qualitative study (Johnson & Gill, 1997; Hammersley & Atkinson, 2007).

As the current study is exploratory in nature, seeking more to discover which practices of first-line managers may or may not be relevant for facilitating learning for corporate greening and engaging their employees in green practices, semi-structured interviews, direct observation and document analysis are appropriate methods for data collection. There are three reasons for the selection of these methods, which include: first, the fact that this research aims to contribute to situated learning a theory and contextualising of managers' learning for corporate

greening in a non-Western context; second, the advantage of the method being able to provide an '*opportunity for a holistic view of the process*' (Gummesson, 2000, p. 86); third, the fact that case studies '*can be of particular value in the applied social sciences where research often aims to provide practitioners with tools*' (Gummesson, 2000, p. 87). This is particularly important for research that aims not only to contribute theoretically, but also to achieve a practical significance, through its findings. In terms of data analysis, it is important to achieve qualitative rigour through coding, cross-case analysis, member checking by the environmental managers in Belarus, and auditing through experienced researchers (PhD supervisors). Consequently, due to time constraints, the selected methods provide sufficient sources that support understanding of the situation investigated and, at the same time, achieve rigour.

4.4.2. Data collection

This section provides an overview of the methods for data collection and descriptions of what has actually been done. Data collection is critical to the research process because it enables the researcher to capture the actual meanings and interpretations that actors subjectively attribute to an investigated phenomenon (Johnson et al., 2006). Thus, the data collection and data analysis procedures are necessary to achieve qualitative rigour in research, and a better understanding of how actors experience, articulate and share with others these socially-constructed everyday realities (Gioia et al., 2013). This section focuses on data collection in the selected three cases. Ethical approval by the Open University Ethical Committee (to be discussed later in section 4.5 of this chapter) was obtained, including approval of a variety of methods which helped to explain the ways in which the front-line managers in the three selected Belarusian plants perceive their learning environment for environmental protection, which, in turn, shapes their engagement in facilitating learning for corporate greening in their organisations (Table 4.6).

Enterprises	Research methods
Case A , located in the eastern part of Belarus	<ul style="list-style-type: none"> • 26 semi-structured interviews with first-line managers in November 2015–January 2016 • Direct observation (2 meetings) • Pictures taken by researcher • Document analysis
Case B , located in the north-western part of Belarus	<ul style="list-style-type: none"> • 14 semi-structured interviews in January–February 2016 • Direct observation (1 meeting) • Pictures taken by researcher (outside the plant) • Document analysis
Case C , located in the south-eastern part of Belarus	<ul style="list-style-type: none"> • 12 semi-structured interviews in February–May 2016 • Direct observation (1 meeting) • Pictures taken by researcher • Document analysis

Table 4.6: Data collection methods used in this study

As Table 4.6. presents, for this study three data sources were selected: (a) semi-structured interviews with first-line managers; (b) direct observation (visits to the facilities, attendance at meetings, contact with employees, taking photographs); and (c) access to internal documents, such as in-house information bulletins, environmental strategy, annual reports, as well as external sources (press, web pages of the companies). The outcome of this stage was the collection of primary and secondary data in the form of interview scripts, photographs, field and reflective notes and internal documents that were considered in the analysis phase. Each method is described below.

4.4.2.1. *Semi-structured interviews*

Semi-structured interviews are discussions, usually one-to-one between an interviewer and an individual, meant to gather information on a specific set of topics (Bell, 1993). Face-to-face interviews may be appropriate where depth of meaning is important, and the research is primarily focused on gaining insight and understanding (Gillham, 2000; Lewis & Ritchie, 2003). For this study it was recognised that in order to achieve a rich description of front-line managers' experience in the facilitation of learning for corporate greening in Belarusian chemical plants, choosing to interview face-to-face is of potential significance,

given the manager do not speak English. The rationale for the selection of this method is the value placed on personal language as data in the native language of the participants (Russian), which enable the capture of socio-historical nuances of the context.

The process of data collection consisted of two main phases: data access and data collection. The data access in the three chemical plants was achieved differently, and conducted in different periods of time. First, the data access for Case A was gained through a gate-keeper with whom the researcher had worked on a previous project. The physical access to Case A was achieved very quickly after telephone contact with the environmental manager. After the official approval from senior management was achieved, detailed information about the project was provided. The data was collected from November 2015 to January 2016. Secondly, the data collection in Case B took place from February to March 2016, and included 13 semi-structured interviews, attending two internal meetings, the review of internal documents and the taking of photographs outside the production grounds. Despite the fact that the town, where the Case B is located, is the researcher's hometown, data access was difficult. With the assistance of a gatekeeper, the researcher was able to get physical access to the plant. Finally, three months were allocated for collecting data from Case C, from February to May 2016. The data access to case C was gained through the environmental manager in Case B. In contrast to the relatively quick access to Case A and Case B, the negotiation for access to the enterprise lasted over six months. Finally, the researcher obtained an appointment with the environmental manager, approved by the chief engineer, which led to gaining access to the company.

The second phase included collection of data from the 52 interviews with the 52 participants, each of which lasted between 45-90 minutes. The semi-structured interviews were carried out in accordance with the ethical principles of the Open University, where the aim and nature of the research were explained, and the interviewees signed to give their informed consent to participate. The interviews were conducted in their native language (Russian), and recorded with the interviewees' agreement. In addition to the recordings, the researcher made notes, which includes recording observations from the very beginning of the research. The researcher made general comments in a diary to describe her

general impressions, and other facts, about the company. During the interviews, it was ensured that participants contributed their honest opinions. Therefore, each person who was approached was given opportunities to refuse to participate in the project. In this way, it was ensured that the semi-structured interviews involved only those who were genuinely willing to take part, and were prepared to offer data freely. As the semi-structured interviews with Belarussian front-line managers had, as its main objective, a desire to understand how the socio-historical context of the country could influence managerial perceptions of the natural environment, it was important to establish a comfortable atmosphere with the interviewees during a semi-structured interview, which could only be achieved through face to face interviews in the native language.

However, the way in which the interviews were conducted differed according to the plant. In Case A, the research participants were invited to the rooms of their supervisors and often sat in the seat facing towards the door. Sometimes, the researcher noticed that participants felt distracted by any incoming people. The researcher tried to seat the person not facing the door in order to avoid these interruptions. In Case B, the main precondition to conducting the research was that all interviews should be conducted in a room outside the bounds of the plant. They also asked me not to take any photographs inside the plant. An additional difficulty in Case B was that the researcher needed to agree to the time when she could visit the plant for an interview. Because the researcher was fortunate in spending six months in Belarus, reacting flexibly to time proposals from environmental managers was feasible. The researcher needed to conduct the interviews either in a separate room or in the room of the environmental manager. In Case C, all interviews needed to be conducted inside of the main building. Thus, the selected participants needed to come to the main building, which was a 15-30 minutes' walk for them. Therefore, the research participants paid particular attention to time spent for the interview to keep their interviews concise, and finish them within the allocated time.

The interview schedule consisted of five questions, and was part of the interview guide (Appendix-II). It was designed to allow flexibility to tap diverse responses and information based on the participants' experience, background and current responsibility. The interview schedule presents the five main parts of the interview schedule, which includes questions relating to the background of the participants,

their interpretation and understanding of corporate greening in their work, the learning environment, the challenges they experience, and the learning approaches and practices they employ to overcome these challenges. The interview questions were informed by the theoretical framework to avoid building the answers into the questions. Thus, the schedule captured two aspects. First, the practices used by the front-line managers to motivate employees to be engaged in 'green' practices builds the foundation of the interview guide. Therefore, the literature on HR practices was added to unpack facilitating practice through a range of joint HRM/EMS/Innovation Management activities (Chapter 2, section 2.2.3.). The second aspect related to the post-Soviet period undergoing change, and the dynamic characteristics of these changes. The scheduled questions were aimed at exploring how front-line managers have responded to re-interpretations associated with environmental issues. In the initial phase of the project, the schedule was pre-discussed with the Environmental Manager (Case A) which I considered as a piloting phase. The schedule was tested with the team members of the environmental department (Case A). Unclear questions and terms were clarified, and questions paraphrased. For example, during the process of conducting the interviews, it became clear that all the participants understood the term of 'corporate greening' as 'environmental protection'. Therefore, the term 'environmental protection' was built into the schedule. Furthermore, some modifications were made during the interview because the questions were asked depending on the scope of the manager's responsibility. For example, the questions about collaboration and consultation were mainly posed to participants who had a formal responsibility as a commissioner for environmental protection. The question was modified for other participants without additional responsibility by just asking how they communicated with other departments and actors. Finally, since the participants were not used to giving interviews, many did not feel comfortable with the questions. Some interviewees felt like they were taking an exam. For example, after the first question, 'what environmental issues do you know?', many felt that they were being tested. Therefore, the researcher paraphrased the question by asking 'what is your general opinion about environmental issues?' to ensure that the research participants felt comfortable.

The interviews were tape recorded and later transcribed. However, exceptions

were made for some of the interviews where the participants asked the researcher not to record the interview.

4.4.2.2. Direct observation

Direct observation relates to a method which assumes that the researcher takes a passive role and observes what is going on (Gill & Johnson, 2010). By choosing this method, the researcher could get deep insights into the daily lives and routines of those individuals being studied. In this study, the researcher was able to visit the facilities of chemical plants and observe how the environmental performance was monitored. This was particularly relevant if the first-line managers named used particular monitoring practices which were part of their responsibility as commissioners for environmental protection.

Using direct (passive) observation of four meetings related to the discussion of solutions for environmental issues (two meetings in Case A, one meeting in Case B, and one meeting in Case C) provided useful insight into a learning environment of the chemical plants involving written protocols, charts, flowsheets, and symbols. The meetings last about 30 to 60 minutes. Pictures could be taken during the meeting with permission from the employees. However, they asked the researcher to use them only for the dissertation and not for the final report to the management. In addition, field notes, photographs and videos were helpful to record the observed actions of the research participants. This enabled the researcher to record interactions, which she later used for data collected through semi-structured interviews.

4.4.2.3. Internal documents and external sources

In addition to the main data gathered through the use of semi-structured interviews and direct observations, documents are an important source of data in qualitative research. Bryman and Bell (2015) suggest that the range of documents that have been or can be used in management research are personal documents, public documents, official documents, policy documents or internal memoranda, newspaper and magazine articles, and internet sources/documents. Thus, the documents represent a good source of background information and can help to contextualise the qualitative data collected in a particular environment (e.g. organisation) or context.

The use of the documents first involved comparing the country context aimed at mapping the statistical trends of different regions. This includes policy documents and national statistical data. Then, data on the organisational level includes information about the organisations where the employees are working. All employees work in teams and departments. Therefore, documents about departments, organisational structure (available just for Case A and Case B), environmental policies and check-lists contributed to understanding the overall organisational context and helped to identify organisational differences. For example, it was found out that the Case C has a larger marketing focus than Case A and Case B. The fact was used in the interpretation of the data collected as well as to design the employees' questionnaire. Accordingly, document analysis was used to determine the extent to which learning for corporate greening was specified in the semi-structured interviews. Thus, selection of appropriate documents was important to achieve qualitative rigour.

The next section presents the methods used during data analysis.

4.4.3. Data analysis

The analysis of data in qualitative research is more complex than in quantitative research because of the complexity of the data themselves (Baxter & Jack, 2008). Therefore, it was important to develop an iterative process for data collection and analysis, in which the research questions were refined and refocused throughout this study. Four data analysis methods were selected: (a) coding; (b) cross-case analysis; (c) member checking; and (d) auditing. The methods for data analysis consisted of two running activities (Bell, 2014): on the one hand, the activities moved between data collection and data analysis; and the other, between a literature review and data analysis. Both data analysis procedures were operationalised using computer-assisted data analysis via NVIVO™ software and described below.

4.4.3.1. *Between data collection and data analysis*

The method between data collection and data analysis had two main objectives. First, it helped to prepare the collected data, quality-wise, for data analysis. Second, it was useful in reducing the data to generate an assertion for the research findings in the following stage. These activities comprised: first,

transcribing and translating the interviews; second, reading and coding the interviews, using template analysis process (see also Appendix-V).

The first activity involved transcription and translation because the research was considered a cross-language study. A cross-language study is a study which involves two or more languages (Temple & Young, 2004). The data collection was conducted in the native language of the researcher, Russian, in Belarus. Back in the UK, the data was transcribed in Russian, and then translated from Russian to English. Therefore, the aim of the phase was to prepare transcriptions of interviews as the object of translation, free from mistranslations and ambiguity. The interviews were transcribed manually, i.e. word by word, in Russian, using the software 'Express Scribe'. The object of the translation was the transcription of Russian interview data collected from employees of the chemical companies (approximate 35-50 interviews). A script consisted of 7-10 pages, and 8,000-13,000 words each.

In order to achieve translation free from ambiguity and mistranslation, preparation would be carried out in several steps, moving towards a final version that could be used for analysis in NVivo: 1. forward-translation, 2. backward-translation, 3. examination of the translated meaning in both source and target languages, and then finally, 4. revisiting the initial version of forward translation to solve any ambiguity by incorporating new interpretations in the original version (Weeks et al., 2007). Because of the large amount of material to be translated, back translation was done by an independent back translator. The back translator translated a translated text back to its original language (i.e. Russian) to ensure that the messages produced by the research participants were accurately reflected. In this way, the credibility of the data set in English was maintained.

The second type of activities was related to reading and coding the interviews. Coding is considered a process of organising and sorting collected data (Bell, 2014). By generating codes, the researcher is able to label, compile and organise the data. Different authors have suggested different procedures or steps in the coding and discovery of categories (Glaser & Strauss, 2009; LeCompte et al., 1993). This research utilised a thematic 'template analysis' (King, 2004) process which involves developing a 'template' of themes that emerged from the data and organised them into meaningful way (King, 2004). The process could be divided

in four major steps: (1) initial template; (2) revising template; (3) final template; (4) presenting and interpreting template analysis. All four stages are briefly described in Appendix-V. The process between data collection and data analysis was covered by the first stage – producing initial template, which is defined below.

Table Appendix-V.1 shows the initial template which consists of three highest-order codes, following by subdivided one, two and three levels of lower-order codes. According to King (2004) first-order codes are prompted from the interview guide. The subsequent codes relate to how the research participants speak about highest-order codes. The process involves the identification of themes through '*careful reading and re-reading of the data*' (Rice & Ezzy, 1999, p. 258). In this way, the iterative process is adapted which enable a 'loose and flexible form of analysis' (Madill et al., 2000).

4.4.3.2. *Between literature review and data analysis*

The activities between the literature review and data analysis included (a) exploring the concepts and theories using revising initial template; (b) categorical aggregation and interpreting patterns resulted in producing final template; (c) presenting and interpreting template analysis; and (d) summarising the study findings and verifying the results. Each activity determined the methods selection for the particular stage of data analysis.

The first activity of data analysis explored the concepts and theories in the literature and provided the basis for a later comprehensive case description of chemical plants, following the previously identified patterns in the initial template. As discussed in Chapter 2 'Literature review', the theoretical framework for this study was based on the concepts of community of practice and boundary objects (Wenger, 1998). In this study, by illuminating the communities of practice, the analysis of the data helped to study the processes and interactions which were associated with the learning environment for 'green' activities and practices. Once an initial template is constructed, the researcher worked systematically through the full set of transcripts, identifying sections of text which are relevant to the project's aims, and marking them with one or more appropriate code(s) from the initial template. Themes are identified looking at small sections of the data and a template used to analyse the whole data set. During the analysis, the template has been continuously modified as new themes emerge and other

disregarded. This interactive coding helps to hierarchically explore concepts, themes, and theories to help make sense of the data.

The second step included a categorical aggregation, which resulted in producing final template (see Table Appendix-V.2). Thus, the analysis first looked at the challenges the managers experienced with environmental issues, the coding variations of interpretations of environmental information around the greening activities. Through reading the scripts, the similarities and differences in collaboration and conflicts associated with environmental activities were identified. The data analysis was guided by concepts of community of practice and boundary objects, and how they facilitate learning for corporate greening, linking different identities, histories and practices (Wenger, 1998). Finally, the final template was created to explain how practices were used by first-line managers to facilitate corporate greening in their organisations (Appendix-V).

Third step includes presenting and interpreting template analysis. King (2004) suggests that the final template, including coding, is only means for interpretation the texts which helps the researcher to produce a rich account for the formal report, paper, or dissertation. The analysis presented in Tables Appendix-V.1-3 demonstrate the density of comments related to each code and the particular contextualisation of learning for corporate greening in Belarus within this study. Analysis of the themes and categories helped to identify connection between different concepts (Figure 4.3.)

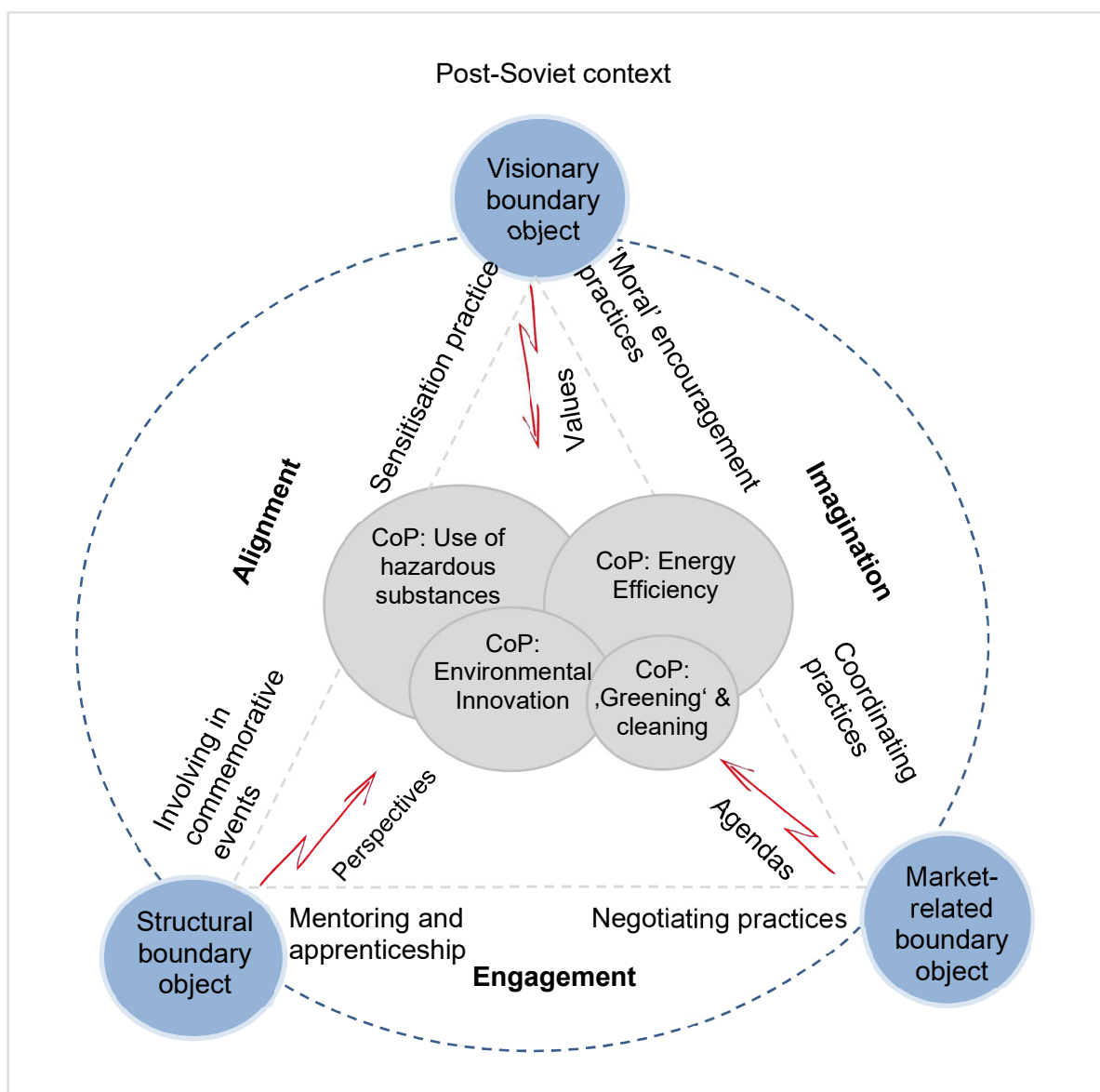


Figure 4.3: Final themes of the study

In the final phase, aiming at reflection and constant action between theory and data helped us to summarise the study findings, and verify the results, to ensure that the quality rigour of the study was achieved. When writing the report, an interpretivist provides personalised accounts of the fleeting moments of fieldwork. Two methods were used to verify the study results: member checking and auditing. Member checking is a method whereby an interview or analysed data is returned to a participant; this is considered an important method of participant validation (Creswell, 2013). The member checking was employed in two stages. First the reports for each plant after the preliminary results from the analyses were sent to the environmental managers. Then, their comments were incorporated in the data interpretation. The process was important because the environmental managers in all three plants added background clarification to

particular events. For example, they explained the reason for the introduction of EMS was not a voluntary step, but rather the result of a formal request by Belneftekhim (the overseeing governmental organisation located in Minsk). Whereas in the initial process, three environmental managers were involved in the verification of the final template and the report, only one environmental manager from Case A was involved in the final stage because the other managers did not have enough time to go through the report. However, they were very helpful in providing additional clarification to the research on particular events.

Another technique that establishes the trustworthiness of the qualitative inquiry is the development of a research audit trail. Lincoln and Guba (1985) suggest that findings and conclusions can be checked by the auditors, and the research decisions and the methodological and analytical processes of the research can also be confirmed. In this study, the role of independent auditors was taken by two independent researchers – the supervisors of this PhD thesis - who were familiar with the methodology and type of data collected. In particular, during the late states of data interpretation, the auditors examined the research process and determined the findings' trustworthiness by providing regular feedback. For this study, reflective notes were produced every month, and shared with the PhD supervisors.

4.5. Ethical considerations and role of the researcher

This section briefly summarises ethical issues relevant to the research. The research was conducted according to the OU Ethical Guidelines within the PhD project (Appendix-I), and ethical issues were considered at every stage of the research project; these issues include data protection and transparency.

The Ethical Guidelines of the Open University define research as high risk if the study involves the discussion of sensitive topics (e.g., drug use, or politics). Thus, the researcher spent some time finding out what topics the research participants considered 'sensitive'. During the interviews, the researcher noted participant discomfort when participants talked about specific topics. One of the topics - the downsizing and restructuring of the companies (through merging departments) – was considered to be sensitive. People were worried about their futures, and avoided speaking too much about topics that they found 'sensitive'. Therefore,

the researcher paid special attention to these issues, and showed understanding of the participants' emotions regarding this matter.

Furthermore, protection of data from respondents is necessary to prevent them from being harmed. For example, employees can be harmed by the disclosure of some information being reported. Therefore, the research was conducted in compliance with the Data Protection Act, thus ensuring employees were not harmed. Risk minimisation is achieved by protecting confidentiality and anonymity. Also, the interviewees are asked if he/she would agree to discuss the topic on corporate greening before starting the interview. Before data analysis, the script from the interview was sent to the interviewees to avoid any aspects that might harm them.

Finally, transparency means that the participants are familiar with ethical guidelines on research produced. This was addressed before interviewing by ensuring that the consent form was signed by every participant (Appendix-III), and other ethical issues were addressed. In particular, primary data collection was ensured that qualitative data are collected in a consistent manner. Improving data collection techniques was enhanced by accurate coding of the data and making regular notes. Ultimately, using these methods will help to achieve the goal of carrying out high-quality research, with credible findings.

As discussed in section 4.1. of this chapter, the interpretivist philosophy acknowledges that the researcher cannot avoid affecting the phenomena they study because the study of the phenomena takes place in its natural environment and context (Lee, 1999). Therefore, it is important to acknowledge that the research outcome of this study is the co-product of the researcher, the research participants/methods used, and the context (Gill & Johnson, 2010). Thus, the ways in which my personal experiences, including my educational background and 'lived' experiences, informed my research orientations are reflected in Figure 4.4.

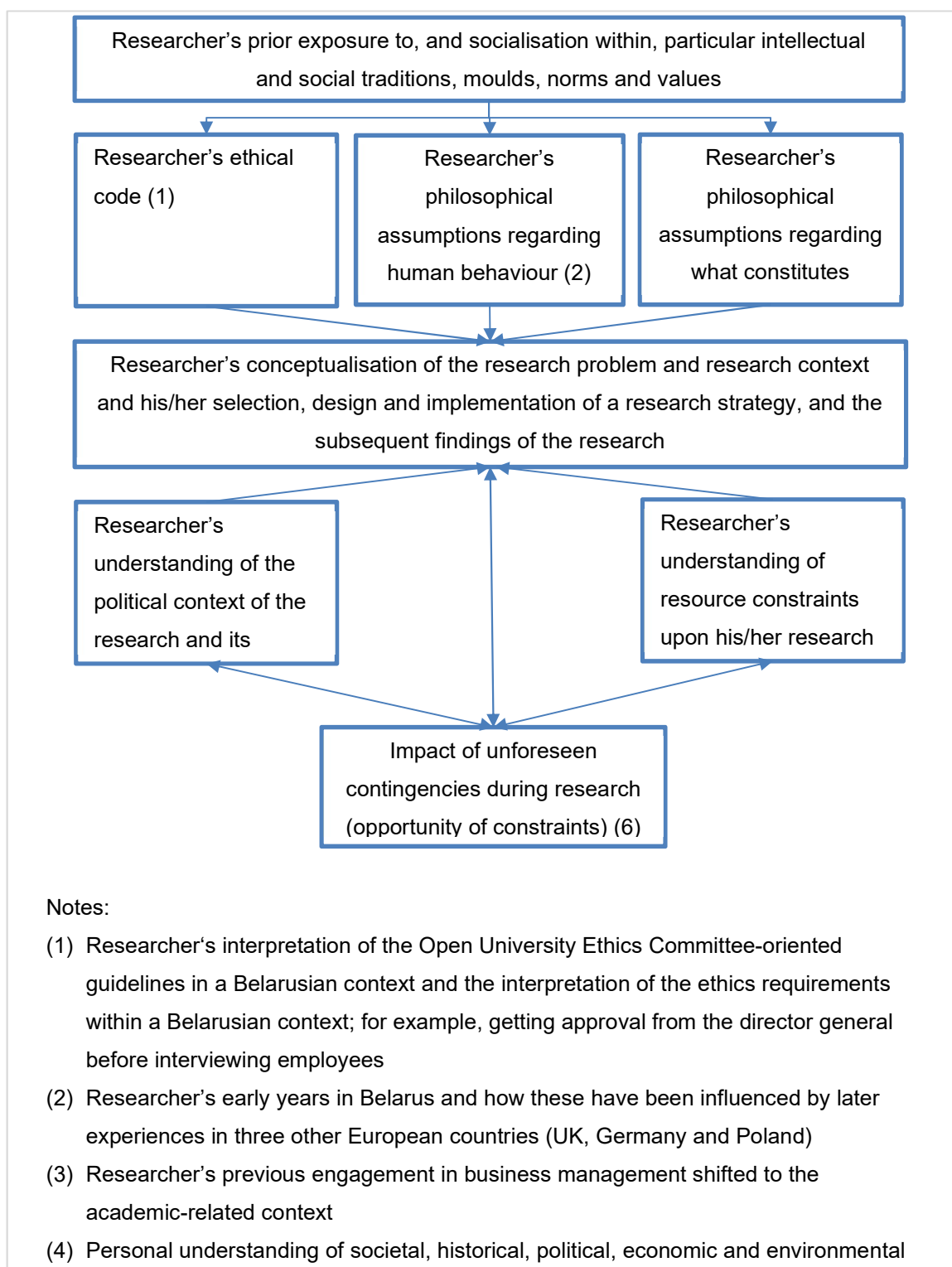


Figure 4.4: Philosophical, social, political and practical dilemmas and their implications for research (based on Johnson and Gill, 1997)

As Figure 4.4. presents, my preference for qualitative case studies was influenced by the above-mentioned factors. Despite my ability to make use of both quantitative and qualitative research methods, studied during my Master's in research at the Open University, this thesis was largely based on the latter approach. This choice of method was motivated by the desire to seek to

understand the connection between the managers' environmental knowledge and their sense-making activities, and how the latter are used by first-line managers to reduce ambiguity and uncertainty associated with the environmental matters they face.

Another influence was related to the selection of the context for this study. Subjectivists argue that researchers cannot distance themselves from: (1) what is being observed, (2) the study's subject matter; or (3) the methods of study (Hunt, 1994). Born in Belarus, trained as a teacher in Belarus, and having obtained a further degree in Business Administration in Germany and in the United Kingdom (UK), the researcher has worked predominantly for business and public organisations in Western Europe. Therefore, in contrast to many other Belarusians who are perhaps unfamiliar with Western practices, the researcher is 'insider' experience of both contexts: Western and Belarusian. Having a background in Western practices for EMS and HRM helped the researcher a lot to interpret the data. However, being a PhD student from a University in the UK was not always helpful. Some top managers in the Belarussian plants perceived the request to collect the data in their plants as something that could be used against them. For example, the data access in Case C was conducted from October 2015 until April 2016. The reason for the long data access period is the fact that the Chief Engineer found the official letter from the researcher suspicious (i.e. acting as a "British undercover agent"), and wanted to know more about what type of questions would be asked. He invited the researcher for a personal conversation about the research. After the top manager of the plant familiarised himself with the information leaflet, he approved the research activities. Therefore, reflecting on the process of data collection in Belarus in the hierarchical structure, it was important to establish a contact with the senior management first, which is perhaps not always necessary in a Western context, where decisions could have been made by lower-level managers, if they found the research beneficial.

4.6. Chapter Summary

This chapter has justified the methodology chosen in this thesis. In the broadest sense, business research can be classified into two epistemological approaches - positivism and interpretivism - and two ontological approaches - objectivist and social constructionist. Within the situated learning paradigm, there is a division of

research approaches into an interpretivist ontology and a constructivist epistemology. This thesis adopts an interpretivist approach because it aims to contribute knowledge to this paradigm research. The common methodologies within the situated learning paradigm are ethnographic research, phenomenology, action research and the case study approach. In this study, the analysis of case study methodology was adopted because it offers a better understanding of practices used by first-line managers to facilitate learning for corporate greening in their organisations in an unresearched context. The thesis also includes a design of the study, which is based on an instrumental multi-case study, to improve transferability of the findings by selecting three cases from different regions. It is argued that this is the best method of investigating the phenomenon of how first-line managers facilitate learning towards more use of environmental practices in Belarus because it is more suited to exploring not just individual differences, but also differences in organisational behaviour, across different regions in Belarus. Furthermore, the methods of data collection from semi-structured interviews, direct observations and internal and external sources and data analysis are outlined, followed by an explanation of how the data were accessed, how the information was collected, and how the data were analysed. Finally, the ethical considerations and the role of researchers as a part of the research is discussed. The next chapter presents the findings of this study.

CHAPTER 5: 'GREEN' COMMUNITIES OF PRACTICE

This chapter outlines the context of situated learning in Belarus and presents four 'green' communities of practices ('use of hazardous substances', 'energy efficiency', 'environmental innovation' and 'greening and cleaning') identified in the data. Situated learning theory shares the view that managers learn in practice through managing a variety of situations by creating knowledge and learning simultaneously in interactions (Lave and Wenger, 1991). Situated learning theory assumes that learning is not an individual's problem, but involves '*historically and socially situated conceptions of erroneous action and belief*' (Lave, 1993, p. 16). Thus, situated learning theory regards context as emergent; understanding of a particular situation is necessary for an act of social learning. Based on this assumption and using the concept of community of practice, situated learning theory is a useful theoretical lens for the study to understand how learning for greening occurs in the three Belarussian chemical plants, and what role the front-line managers play. As the communities of practice are formed through shared histories of learning (Wenger, 1998), the chapter introduces the changing, complex and ambiguous learning landscape for environmental responsibility as it viewed by research participants from the Soviet to the post-Soviet context that provides useful contextual information for the subsequent chapters. Five community of practice dimensions (Wenger, 1998) - meaning, identity, practice, community and boundaries - are used to achieve a rich description of the learning environment in chemical plants in Belarus.

The remainder of this chapter presents findings on each community of practice, namely '*use of hazardous products*' (section 5.1.), '*energy efficiency*' (section 5.2.), '*environmental innovation*' (section 5.3.) and '*greening and cleaning*' (section 5.4.) in turn. The findings under each community relate to Wenger's (1998) community of practice and show that the five components of learning (community, practice, meaning, identity, and boundaries of practice) are present in the Belarussian organisations. Finally, this section presents some conclusions (section 5.5.).

5.1. Use of hazardous substances

This section describes the largest ‘green’ community of practice, which focuses on the inputs used to produce chemical products. It creates a learning environment aimed at reducing the use of environmentally harmful inputs, reducing polluting emissions to the air, water and land, and recycling more. The section begins with a description of the community and its composition. Then, it explains how situated learning occurs in the community of practice and how boundaries begin to develop between those participating and those outside the community. Finally, it presents how the front-line managers speak about challenges in sustaining the conversations around the reduction of harmful emissions and waste in their hazardous production between members of the community and non-members (disengaged employees). The challenges are around boundaries across different conflicting agendas between internal and governmental actors, and different values towards shared environmental responsibility.

Wenger (1998) sees community as a way of ‘learning as belonging’, to describe the emergent relationships among community members around a practice. The participants at three chemical plants, located in different parts of Belarus, seem to have formed their community of practice ‘use of hazardous substances’, which comprise several networks which are critical to their environmental outcome (Figure 6.1).

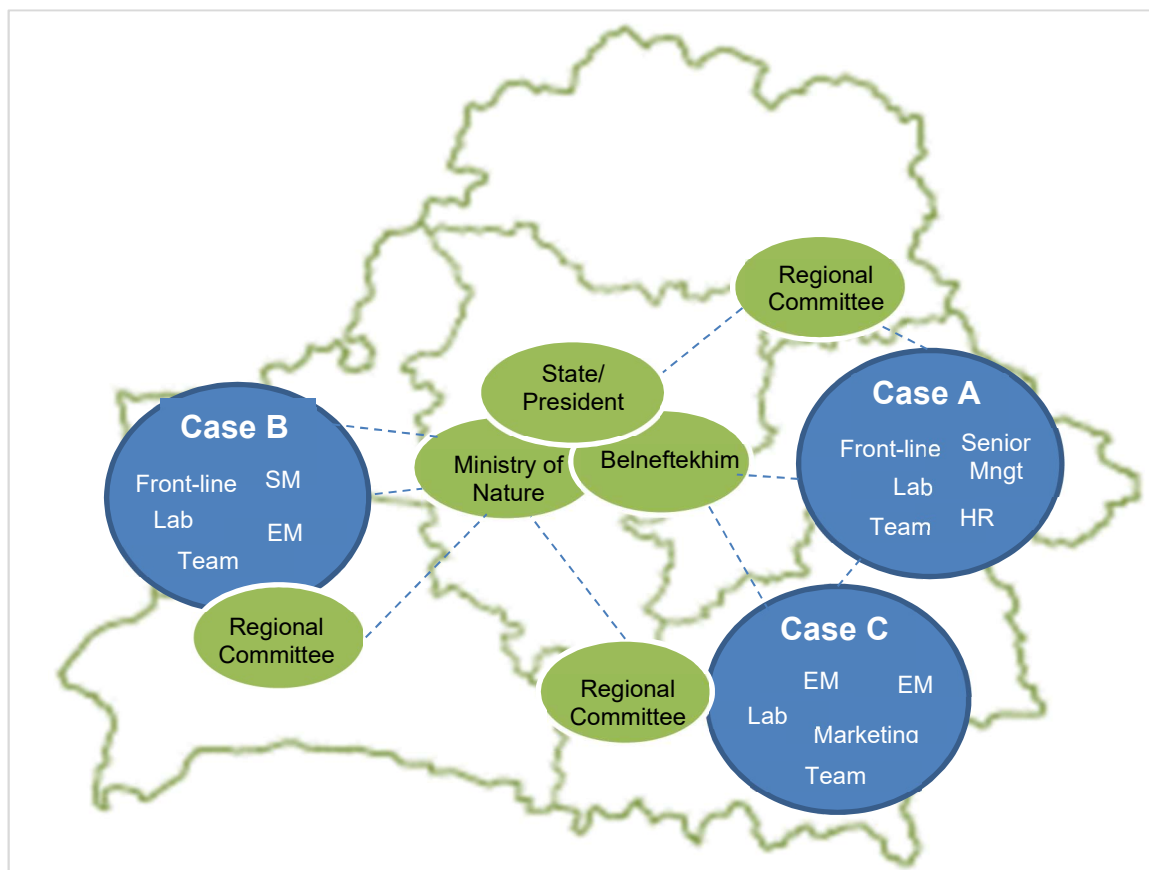


Figure 6.1: Composition of community of practice 'use of hazardous products'
(Author)

Figure 6.1 presents the composition of the community of practice, with focus on the reduction of hazardous substances, emission and waste. All three chemical plants are producers of polymer yarns and fibres, which are mainly used for textiles and innerwear. In addition to the common polymer yarns and fibre products, Case A is a supplier of fatty acid methyl ester and its by-products, which are used as biodiesel or diesel fuel constituents, as well as material for PET bottles. As the figure presents, Case A is also a supplier of raw materials to Case C, and some of the products to Case B, which illustrates the supplier-client connection between the plants in the national market. Thus, the members of the community of practice in all three plants include both, internal and external actors, as well as the formal and informal processes that determine their learning.

The research participants interact within the formal network, which includes: environmental managers; front-line managers, who have the role of commissioner for environmental protection; Chief Engineer (or senior management) and a laboratory for measuring emissions and water contamination (sewerage); and state actors, including the president, various Ministries and

Belneftekhim. According to the official documents collected, the environmental protection was introduced began mainly after 2007, when government organisations, such as Belneftekhim and the Ministry of Nature, forced the plants to implement environmental management systems (EMS), along with the need to comply with the state ecological management standards, such as STB ISO 9001-2009 and STB ISO 9001 - 2015¹²: Participants explained how formal network related to the use of hazardous substances was formed.

The ideas about formal environmental management systems came from the Ministry of Nature. First, it began with small activities: we were asked to write instructions and write just (laughs) all processes down, of which we have many. Then, the activities on environmental protection have been extended to more complex areas and hazardous substances that we need to reduce (A-14).

When the process of certification began, we were forced to introduce an environmental management system by the state and its organisation Belneftekhim. Now we see that it was a necessary measure because many clients asked us for the certificate. On the other hand, the regulator does not leave us to relax (laughs) and we always need to meet the legal requirements in order to avoid conflicts with the Concern's [Belneftechim] inspectors. (B-2)

Yes, we have a strong [EMS] system, which was an act of compliance with legislation. However, please do not forget that we are part of Belneftekhim. If the Concern says 'you should introduce', it is clear that you do not have another choice than to do so. (C-2)

The extracts suggest that the communities for the reduction of hazardous substances were initiated and introduced against the wishes of the organisations. A top-down approach means that the regulatory provisions are initiated by the State and are adopted by their parent company, 'Belneftekhim', which is part of the Ministry of Chemical Industries. Belneftekhim subsequently passes the

¹² The requirements of STB ISO 9001–2009 relates to Belarusian standard of certification as an alternative to an international ISO 9001 standard and includes similar aspects of the quality management system guaranteeing production quality at all production stages. Some sources suggest that the reason for the introduction of similar local standard is the fact that Belarus is not in the WTO, which prevents Belarussian companies selling their products internationally.

information to the environmental managers of all chemical enterprises in Belarus. As the government prescribes the fulfilment of clear responsibilities in order to comply with the state ecological management standards, such as STB ISO 9001-2009 and STB ISO 9001-2015, to run operations, the research participants use the interactions in the community of practice to develop their technical environmental expertise. Since 2007, Case B has been awarded both national and international ISO certification. In addition, Case C has acquired a certificate for their products as exceptional products - the Oeko-Tex Standard 1000 (a European standard for testing, auditing and certification system for environmentally-friendly production sites throughout the textile processing chain) - which indicates that both plants (Case B and Case C) have extended their commitment to using fewer hazardous substances in their products in order to attract international clients in the textile and chemical industry.

The informal network includes interactions between departments, team members and environmental managers as the first point of contact:

Our system is organised in a way that we have an environmental department which is part of the Department of Occupational Health, Safety and Environmental Protection and it analyses our entire environmental activities within the EMS. The system involves colleagues from the lab, management of all processes, and the reviews and analysis which we have registered at different levels. (B-9)

Analysis [of environmental issues] is organised in a way that covers structural units¹³ with people who are assigned a role of commissioner for environmental protection. These people are responsible for producing regular reports and documentation. Then these reports are considered in the report which contributes to the general report, which we present to our top management. Consequently, the top management decides which activities on reduction of hazardous substance should be planned and what our challenges are. After the priorities are set, usually the strategic direction outlines further ways to improve performance. (A-1)

¹³ The term 'structural unit' was used by the research participants as a joint term for all management and administrative departments who are not directly involved in production.

Our colleagues in the environmental department and we also liaise with the international partner [Author: international ISO certification BVQI Veritas) for certification. If anything changes, we need to adjust the production accordingly. (C-12)

As research participants described, the environmental management department at chemical plants, as part of the Department of Occupational Health, Safety and Environmental Protection, is perceived as an important element in their communication. The link is established through front-line managers, who have the semi-formal role of commissioner for environmental protection. These interactions bring people together as a community of practice in a place that has resources, such as artefacts (documentation, reports, spreadsheets), that can be used to analyse the environmental performance of the plants. Furthermore, as A-1 demonstrated, front-line managers have to also work closely with the laboratory, which measures emissions and ensures that the limits are met, in case of visiting inspectors. Many of the process flows within a chemical process require steps to be completed by the laboratory in order to prevent unexpected non-compliance with the permitted limits. In addition to the standard legal process, Case C, as a provider of an ecologically certified product, also needs to work closely with the certification body in Germany to ensure the audits are being conducted correctly, and are in line with Eco-Textile guidelines and deadlines, which shows connection to external actors which are considered as members of the community. Consequently, Case C has a closer collaboration with the marketing department, which has to be reactive to any new legislation concerning communication substances which are considered highly dangerous to their mainly B2B customers.

Further to the general composition the community, research participants assessed the level of importance of particular actors in the learning process. Thus, in contrast to the managers in Western context who view their senior management as the main player in corporate greening (Unsworth et al., 2013), the Belarussian front-line managers view the State as the main player in corporate greening, as they think the State knows what to do and is responsible for the environmental protection of the country. While respondents feel pressured to respond to these government demands for greater environmental protection, they also seem to accept the role of government as an actor in their everyday

work and communication - and the power relations between state and business that this implies – for granted. The State remains the majority owner of the chemical industry in Belarus and most participants seemed to accept the strong influence of government power over their working lives as normal. The research participants stated:

The state is the initiator of any [environmental] regulation. The government sees the problems which exist in the country, for example the number of illnesses or the number of accidents... So, the state initiates changes if we, as a country, have problems. (B-14)

The opinion of the president [is] important ... He sets the tone for all legislative and other areas. (C-5)

.... These priorities are given [to us] by government, which then come from Belneftekhim and the Regional Committee of the Ministry of Nature. For example, the Ministry gives us a license for the disposal of waste. Accordingly, we can burn some [waste] – the rest we cannot burn. (B-13)

The extracts emphasise the important role of the state and the state actors in the process of learning for corporate greening and show a top-down approach to communication any changes which are necessary in the country. Interestingly, whereas the managers in Western context see their own responsibility for the environmental issues (Boiral, 2009; Boiral, Raineri, & Talbot, 2016), Belarusian participants speak about the state's responsibility for environmental protection which ensures a healthy nation and a healthy environment. Describing the authority of the state in matters of the environmental issues (B-14) and the key role of the president for setting national ideology (C-5), the evidence suggests that the learning environment in state-controlled organisations is shaped by a sense that the goals set by government have absolute priority. By setting a 'tone' in legislative and other areas, the state in this way belongs to the community as an 'invisible' member who produces and determines the scope of environmental knowledge.

Next to the importance of actors, research participants discussed the reasons for participation which creates meaning to participate. Wenger (1998) views 'meaning' as the outcome from learning through experience, which is configured

through the process of moving from peripheral to full participant in a social practice. The research participants in this study relate their reasons for participating in the community of practice to their awareness and knowledge about the negative effects of chemical products and of the consequences of non-compliance with legal requirements:

The main natural chemical resources for our products are hazardous materials - ammonia, ethylene, propylene, sulfuric and nitric acids, caprolactam, dimethyl terephthalate, nitrile of acrylic acid, polyethylene and many more...but we are not just a chemical company which uses and produces chemicals, we are more a community of professionals that want to share ideas on how to reduce these hazardous substance (A-17)

We work and learn [about reduction of emission and waste] together. The main goal for our work is to fulfil the legal limits for emissions reduction and waste set by environmental legislation. Violations of the landfill or storage place, if it is sanctioned without permission, is punished by inspectors. Therefore, it is inevitable that you're going to learn these limits ... We are just happy that we together can fulfil the requirements of existing limits. (B-11)

Here, the research participants highlight their meaning to join the community because they would like to learn more about the properties of chemical materials that make them hazardous, as well as knowing about legal requirements that have consequences, including punishment. Furthermore, they name the goal of the community of practice, which is to achieve '*limits for emissions and waste reduction*' and in this way, minimise the risks associated with legal non-compliance. The research participants perceive that knowledge gained through this community of practice enables them to gradually reduce emissions and waste, leading to more environmentally-friendly products and a reduced environmental footprint. The quotations show that front-line managers describe themselves as '*communities of professionals*' (A-17) which demonstrates the process of learning from peripheral members to a knowledgeable 'professional' (Wenger, 1998).

As discussed in the section 2.3.2.1., the concept of identity is characterised by a process of 'a constant becoming' that defines who we are (Wenger, 1998, p. 149).

Thus, Wenger sees identity as formed by the way in which individuals demonstrate their community membership and learning trajectories (a shift from the stage of beginners toward a more knowledgeable practitioner). Therefore, identity can be formed both by the practices that learners engage in (participation) and by the practices they do not engage in (nonparticipation). Consequently, identity and practice act as 'mirror images of each other' (p. 149) by reconciling their membership and negotiating local ways of belonging with broader, more global discourse communities. The concept 'identity' also explains how learning changes who we are and creates personal histories of becoming in the context of our communities (Wenger, 1998). The participating front-line managers seem to construct an identity as both a commissioner for environmental protection, which is part of their formal role, and a lawful citizen of their country. In both these roles, they see themselves as someone that peripheral participants in the community of practice can turn to for advice. Both these forms of identities legitimate front-line managers to establish connections between different production departments and perform trials or tests on possible solutions with their team members because they prefer to do this informally rather than go along the official route. By doing so, they identify with other members of the community:

.. if any issues occur, my responsibility is to answer the questions and instruct people. This is my, well, that is 'part of my bread' [meaning author: it is essential to demonstrate my professionalism in the job]. If, however, other colleagues from [production] departments approach me, I cannot refuse them, it's my personal responsibility to help them. (B-7)

When it comes to the problems – team members do contact me not only because I am a commissioner for environmental protection, but because I take time to listen to their problems. I could say no, but not as a law-abiding citizen. For example, recently the problem was associated with production of waste which stops the machine. The workers lose their time to clean the machine from the waste in order to start their work again. In order to eliminate the issue and loss of time, we decided to re-use some raw materials. Thus, we initiated a small test with my team and found that with the new system, the pressure in the machine was not growing rapidly, and captured polymeric essences through filtration. As a result, we experienced fewer stoppages, which means less waste. Thus, together we

have developed the use of a new raw material for the polymer and a work programme which was later approved by the chief engineer. In this way, we improved card processing and reduced the consumption of resources by 4 kg of waste per shift. (A-23)

The quotations provide evidence that the learning process is also associated not only with their formal role as a commissioner for environmental protection, but also with a personal identity as a good citizen of their country, who is law-abiding (A-23) and takes care of their team members (B-7). It seems that the learning includes the practices like discussing, listening, testing which draw upon a shared repertoire of resources such as ways of waste separation, recycling, correct emissions and is portrayed as a social formation of an identity (a person) rather than as only the acquisition of knowledge. Thus, the identity of front-line managers in this study is conceptualised by their experiences to facilitate learning toward corporate greening by encouraging an affinity to the national identity and environment, developing shared infrastructure for discussion, but also facilitating a transition from a Soviet type of thinking to a post-Soviet mindset regarding recognising business opportunities for 'green' business practices. The evidence above demonstrates that learning in this study seems to entail not only change in front-line manager's identity but also appears to be shaped junior employee' identity, of seeing 'learning as becoming' (Wenger, 2000, p.5), as already discussed in the section 2.3.2.1. The data suggests that the learning process is affected by socio-political influences – a good citizen of their country as well as the (re-) negotiation of meaning of supervisor experience – being a good manager to their team. This has implications for learning trajectory of front-line managers. The community members move from peripheral (a beginner to environmental protection) to boundary learning trajectory in which front-line managers has membership in related 'green' communities of practice and handles interactions between them (Wenger, 2000).

Wenger (1998) highlights that learning involves an identity change on the way to become a more knowledgeable practitioner. Quotes demonstrate how members move along a trajectory from being legitimate peripheral participants to being knowledgeable agents in the area of the reduction of harmful substances. As some front-line managers explain:

When I became a commissioner for environmental protection, I had a little bit of prior knowledge about substances, and most importantly about the environmental standards ...However, the legislation is so complex that it is a constant learning process ...We actually are growing with it by using the numbers of limits in our instructions for our workers every day, which is quite good for us. It keeps us remembering [limits] (A-3)

Despite the fact that we do a lot of training and observation, I also ask my team members (technical staff and chemical process operators) as they have more experience. I do this before producing an instruction (to-do-list) for the whole shift...they need to know how it's been done before, what kind of things to change in the technical process, and what to do if the limits will not be achieved. (C-5)

It seems that the learning experience of research participants involves changes in their identity: from a formal supervisor of their team, over a commissioner for environmental to a simple a 'green' identity. The changes occur because knowledge creation becomes a part of the learning activity, and one of the four primary roles of a community of practice: facilitating social interaction, knowledge creation, knowledge sharing, and identity building (Wenger, 1998), is fulfilled. The environmental knowledge is generated through social interaction with other learners through producing instructions (a sort of daily 'to do' lists) for their team members¹⁴. Like A-3 highlighted, the front-line managers include the numbers of limits in their daily tasks instruction, which also gives them the opportunity to memorise and remember the knowledge of legal requirements. In their working context, front-line managers form or 'construct' their own environmental knowledge from experiences they bring to the learning situation, but also they use the knowledge of more experienced team members (C-5). Here, in addition to the theoretical knowledge about legal requirements related to new environmental standard gained in the training session organised by the centralised departments (i.e. EM and HRM departments), the front-line managers gain certain types of knowledge that helps them to implement new legal regulation. This includes matching their own previous engineering knowledge and

¹⁴ As discussed in Chapter 4, it should be noted that technical staff do not have a specific job description in Belarussian plants. According to the Belarussian employment codex, which has been adopted from the Soviet Union, a job description is set just for engineering-technical staff (from level one (senior management) through level two (middle management) to level three (first-line managers))

knowledge about existing chemical equipment and production line (local knowledge) with the help of experienced worker. By mixing their existing knowledge (from the training session), their own knowledge about technology and engaging knowledge from experienced worker help to deepen learning from experience, the front-line manager transforms themselves to an expert, and develop an identity as both commissioners and good citizens of their country. Thus, front-line managers 'grow' with the community, they construct their identity as both commissioners and good citizens of their country, and as someone that peripheral participants, such as their team members, can turn to for advice.

Boundary is the final component used to analyse the 'green' community of practice. Boundaries are created between those who have been participating and others because communities of practice are formed through shared histories of learning generate tensions or conflicts (Wenger, 1998). Front-line managers describe boundaries when they speak about situations where a heated exchange and conflicts are triggered, which include those involving an structural unit, such as the EM or HR departments, who have different agendas and differences in values of their workers. For example, top-down pressure may be created by measures, organised centrally by administrative units, concerning the rate of production, as the following extracts describe:

. . . if the production is growing and a new product will be produced, you need to run all these activities again, i.e., waste identification, getting a licence, and then include it in the instruction, explain it to your people. All the activities are delegated to us from over-loaded structural unit, but they do not understand that we need to run the production. They have different agenda to provide information to Belneftekhim (A-15)

All the structural units, such as HR and Environmental department, have a rather controlling function which requires signatures. So, running after each signature costs a lot of time which is not relevant for production. (B-6)

In particular, if it comes to external audits by inspectors, which checks the emissions, you can be sure they will notice any difference and you need to solve the issue of why a particular station issues unpermitted gas emissions. But they cannot solve this issue without us. Therefore, you

always need to prioritise what is important today, emissions or getting your production done. (C-3)

The quotations highlighted clearly a boundary between two different agendas – between production and ‘structural units’. The boundary is perceived by the front-line managers as highly pressurised from the internal (‘they are the controlling function’ and ‘they cannot solve this without us’) and external (‘the inspector would not understand us’) actors. As research participants have highlighted, they perceive conflicting goals being created between looking after production and looking after correct emission reduction, which affects their own work when the front-line managers set tasks for their team members.

Another challenge to achieving the greening goals is seen in societal changes caused by potential misunderstandings and confusion arising from different values towards the shared responsibility for the environment. The research participants in particular explored the link between a lack of environmental interest and awareness and participation in the ‘green’ community:

During Soviet times, everything was done for the prosperity of the USSR, with costs to the environment. The natural resources were considered inexhaustible natural resources. Now we share this responsibility with all. Many, however, are not ready to live with nature instead of fighting nature, like it was in the ‘60-‘70s. (A-9)

There is indifference of some people [towards the environment]. They are lacking concern towards the environment because they are poor in their moral to do something good. It happens everywhere in the country...Our people are not aware of the need to do something personal towards the bigger [environmental] issues. Everything is left to the government. (C-10)

You know, our society is not ready ... there are people who are able to think beyond their own door. However, they are not interested in ecology because they are concerned with their own things. Many have their children to bring up, to buy a car or property. Thus, government has the overview and can determine the [environmental] activities on the long run. (B-12)

The language used by the research participants above suggests the notion that Belarussian society is 'poor of moral' (C-10) which means absence of interaction with the environment in order to 'do something good' (Bansal & Roth, 2000). This absence of interaction with the environment in the society in Belarus would seem to shape a general weak public awareness of environmental issues. Consequently, relations of citizens to the environment have become so that they *'are concerned with their own things'* (B-12). Thus, the research participants highlight the boundary in values of people who participate in the reduction of hazardous substances, emissions and waste, and those who are *'lacking concern towards the environment (C-12)'* and are *'not ready to live with nature instead of fighting the nature like it was in '60-'70s (A-9)'*. In other words, boundary in values are generated between community members who feel a need to participate and those with a personal indifference to environmental problems and an unwillingness to act on their own because of other, more urgent, everyday pressures.

5.2. Energy efficiency

'Energy efficiency' is another important community of practice which focuses on energy consumption with the aim of reducing emissions and lowering the cost of goods in chemical production (as part of the company strategy, which foresees the integration of environmental issues in the operation, as demonstrated in formal documents available in every chemical plant of this study). The section presents the composition of the community, the actors involved, how learning occurs in this community and their boundaries of practice across different perspective on economic aspects between different members which prevent fast implementation of energy efficiency practices.

As the production of polyester chemical fibres and yarns belongs to the most energy-intensive industries in Belarus, all three companies are the largest consumers of electricity and gas in the chemical industry. All three chemical plants have established plans and activities regarding energy-efficient production, similar to the previous community of practice (Figure 6.2.).

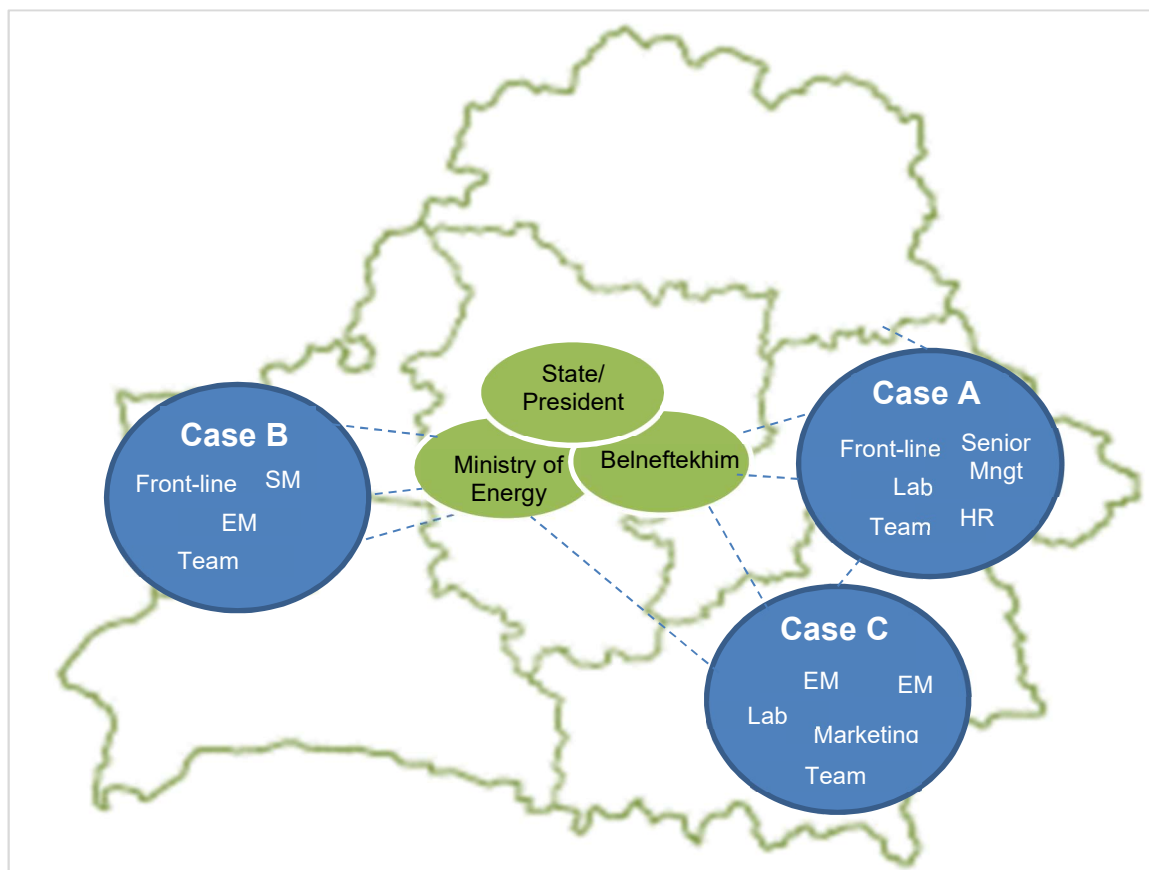


Figure 6.2: Composition of community of practice 'energy efficiency' (Author)

The community of practice comprises several networks, including inside and outside organisations which are critical to the learning outcomes. The community members inside the organisations include the Department of Power Engineering¹⁵, which consists of people employed by the chemical plants, front-line managers, their chemical process operators, the HR department, and the company's chief engineer. The community, similarly to the community of 'use of hazardous substance' include external actors to exchange knowledge about different possibilities to reduce consumption of energy. The members of the community are employees of the Ministry of Energy and Belneftekhim, which are located in Minsk, and are connected with the State. The following representative quotation describes the connection between the chemical plants and external actors:

We have a range of standardised stages – planning, implementation and evaluation - which are conducted every five years and are constantly

¹⁵ The Department of Power Engineering is another structural subdivision of the chemical plants and it reports to the technical director of the enterprise, similar to the Department of Environmental Protection or Human Resources Department.

revised. The representatives of the Ministry of Energy are in constant contact with the people from the Department of Energy. We call them 'energetiki'. 'Energetiki' receive a target for emission minimisation or costs reduction from the Ministry of Energy, and make a proposal on what can be improved. We decide what is possible to implement (A-8)

In the participants' account from Case A, the Department of Power Engineering (called 'energetiki') plays an important role in fostering the learning process in this community of practice. Other plants have similar experience, as shown in the following quotes:

We are mainly approached by the 'energetiki' and asked if we have some capacity to change production. For example, this year we needed to reduce 30% of our energy use. All this allows us, with the growth of production volumes, to implement just some energy saving through change of technological processes with the purpose of waste neutralisation and the incineration of solid waste. As these are very complex activities, it would be very difficult to do without the advice from the energetiki (B-12)

Recently we introduced the recycled water supply which consumed less energy. However, calculation for our production line has shown that the system had to be installed near pieces of production and cost a lot. I asked 'energetiki' for formal money allocation and their opinion about possible supplier. I was able, at the end, to work with a contractor who had a good solution for the water supply system at a reasonable price. I think without having consulted with 'energetiki' it would not have been possible to implement (C-4)

As the research participants present it, there are two ways of learning through social experience and interaction within the community. First, the decisions to introduce new technical energy efficiency solutions are shaped by initiations from the Department of Power Engineering in the first place, and then the initiative for consultation may come from the production department. There was a shared repertoire involved in this, such as the discourse about having interaction with the 'energetiki' as 'energy saving experts' and the norm that reduction of energy is acceptable.

When the participants were asked about the purpose of joining the community, they highlighted the importance of the knowledge and skills necessary to reduce energy consumption and carbon emissions, which is particularly difficult in the case of process carbon emissions (carbon that is released in the chemical process, rather than from burning fossil fuels):

Energy reduction is important for us. More importantly giving the teams the practical skills to do things differently and showing them how the production can be run more efficiently . . . to do things that seem like very radical steps towards alternative ways of energy consumption in production. (B-4)

We have some processes which produce carbon dioxide as a by-product of the chemical reaction. ...These so-called 'process emissions' cannot be addressed with energy efficiency measures only. We look at energy reduction rather holistically. (C-3)

While the participants explained that reducing carbon emissions requires holistic thinking (C-3), they also emphasised that the predominant alignment goal of the community of practice was to reduce costs, rather than carbon dioxide emissions. To them, this reflects the meaning (Wenger, 1998) to join the community routed in the current difficult economic situation in Belarus and achieving competitive price. This can be explained by the market changes and dependence on the energy supply from Russia, as a research participant explains:

We are small country that does not have a massive mineral resource base. Rather, we import a large amount of fuel and raw materials required for the production of polyester and other chemical products. Although there are some refineries in Belarus, we are dependent on Russian gas and energy. Therefore, the State pays a lot of attention to negotiating good prices with Russia. (C-3)

Our work on energy efficiency began to intensify in 2011 when Russia increased prices. We are keen to reduce the energy use, not to be dependent on Russia. (B-13)

As the research participants explained, the necessity to build expertise in energy efficient chemical production is due to the fact that the oil and gas are mainly

imported from Russia. The meaning is generated by gaining knowledge about energy reduction measures and, to a large degree, be able to compensate for these rising costs of energy through participation in the community.

As the front-line managers do not receive any designated role concerning responsibility for energy efficiency (as was the case in the previous community of practice), the identity of front-line managers within the energy efficiency community changes as they learn from the 'enerketiki' and through 'learning by doing' exercises when implementing energy saving projects. They become less peripheral as they learn how the community works, and also how they can reduce energy in their production:

I think that my mindset is 'green' now (smiles). When I joined the production of yarns I was not familiar with all the machines and where the options to reduce energy were. After several projects and observations, I learned that energy could be reduced through minor things, such as switching lights or plan batches properly so that no energy is used for changing shifts. (B-6)

As the research participant (B-6) highlights, energy reduction contributes to an individual participant's identity as someone who has a 'green mindset'. It also moves them further along the trajectory from being a legitimate peripheral participant who is unfamiliar with the techniques of energy reduction to becoming a knowledgeable agent who knows to reduce energy between shifts. Consequently, working on energy reduction equips members with practical skills to use activities to reduce energy in a large production. Here, it is not the knowledge of legal information that is relevant, as in the previous community of practice, but technical knowledge, such as changing appliance standards or having access to alternative heating.

However, their learning in the reduction of energy use in production is not without challenges. Front-line managers experience lack of understanding of changes in production by the community members who plan energy reduction centrally. Consequently, boundary across agendas on energy reduction which generates pressure to give up on production and reveals a difference in competency between them and their colleagues in the Department of Power Engineering, who

are considered experts. The following extract from the observed meeting in Case B indicates:

Power engineer: 'As you know we received additional targets for energy reduction. We have agreed with the Chief Engineer that we will exchange your air conditioner, which is in your fibre line. When can we start the work?'

One participant: 'Hold on, we have not agreed that the work will begin soon because we have to fulfil an important order by the end of this months'

Another participant: But also, we cannot leave people in a hot production room without an air-conditioner. It's just impossible.

Power engineer: Yes, we understand, however, we have some other goals to fulfil. If we do not fulfil them, our bonuses will be reduced, as you know. So, better we agree on some steps.

(Observed meeting, BM-1)

The discussion between the two front-line managers of fibre production and the power engineer demonstrate different and contrasting agendas which generate tension in their interaction (Wenger, 1998). Whereas the Department of Power Engineering pushed for the production to use less energy because of the annual plans for energy reduction, the agenda for production front-line managers is to ensure that the product is produced on time. In addition, the front-line managers think about their team members and their working conditions, instead of giving priority to the government targets communicated through the Department of Power Energy. As the example shows, boundaries, which are places of potential misunderstanding and confusion (Wenger et. al., 2017), between two departments may arise from different regimes or agendas; they might generate challenges, but they may also offer an opportunity for learning.

5.3. Environmental Innovation

This section focuses on the community which was initiated in the Soviet era and has developed, with a recent focus on environmental innovation, since 2011. Introduced in the Soviet Union in 1959, the so-called '*rationalisation and invention*' (in Russian: '*rationalizatorskaja dejatel'nost'*') programme was meant originally to promote innovative activity by staff, and an increase in the efficiency of all production stages (Ovchinnikov, 2014). During Soviet times, rationalisation proposals included changes in the design of products, the technology used in production, or changes in the composition of the materials. This section highlights knowledge necessary to participate in the community 'environmental innovation'. The section shows that the majority of the communication processes and the community's composition is inherited from the past. Therefore, the section gives a historical background first, following by presenting the view of front-line managers on how learning occurs in this community; identity changes, and the boundaries across different perspectives on traditional practices inherited from the Soviet Union (rewards) which prevent the community of practice from 'growing'.

The community of practice on environmental innovation is to develop and implement technology and solutions that solve the pressing environmental challenges internally. Below, the research participants explain when and why the rationalisation process in their organisations was initially welcomed as a standardised form for environmental aspects, and how it has changed over time:

The procedure for the Rationalisation Process was established by the Regulations on, Inventions and Rationalisation Proposals in 1973. I remember we had many organisational proposals such as streamlining the structure of the enterprise; improving accounting and reporting were rationalisations. Now, the proposals are more sophisticated technically for which you need to collect more technical information on how it will work, you also need to test and verify your result...it's a lot of work (smiles) (A-11)

Originally, when the rationalisation proposal process was introduced, we had all proposals of a technical nature. Now, the situation has changed. Well, first of all, all proposals that we receive, without exception, go through

and receive evaluation from the Department of Safety and Environmental Protection. That means that what is contradicting with ecology therefore will not be approved. Second, one of the criteria for rationalisation proposals is their usefulness. In terms of specific ecological aspects, for example, strictly impacting ecology, we send this for evaluation to the environmental protection unit. (C-5)

In the past, we had many proposals because the plant was not modernised ...now, if there are any ideas, [to] go through a formal process is too much trouble. Instead, we just work together on the solution and learn to calculate [the environmental effect] and then explain to senior management. ...anything contradicting with ecology is tracked through the evaluation criteria we have introduced with EMS. (B-7)

The quotations above illustrate the rationalisation process in Case A as one that was initiated during the Soviet times (i.e. in 1973) in response to the introduction of a legislative demand for optimisation activities in the large plants which had 24,000 employees or more. However, over time, the research participants felt that the area of rationalisation and invention became a good place for technical improvement and the integration of environmental aspects. In the case of Case C, the rationalisation process also focuses on a collaborative formal process which includes additional environmental-focused criteria. The research participant of Case B explained that the general changes towards taking a green initiative and the 'green' rationalisation proposals were particularly visible after Belarus signed several environmental conventions in 2007 (B-7). Despite some differences, environmental aspects have been integrated into the evaluation process of the rationalisation proposal in all three plants and have become a part of the learning environment for members of the community who require skills for integrating environmental issues in new technical solutions. The front-line managers found that knowledge associated with the reduction of the environmental impact through innovation in the technological process was important for their social interaction with other members of the community, for example the Department of Safety and Environmental Protection.

As front-line managers 'grow' with the community, they construct an identity as both commissioners for innovation and the authors of the proposals. A research participant pointed out:

The competition is high now and we need to be creative in our product development. As an ETR [Author: as discussed in Chapter 4, the term 'engineering technical staff' belongs to the HR terminology to distinguish between staff with high engineering education (ETR) and staff who have technical education such as technical college level only. In this case, a staff member is called a 'TR'], I need to fulfil a plan which includes one innovation annually. For some it is easy to be done, for some it is difficult. It costs additional time and energy to organise such initiatives, which requires being rather entrepreneurial, than just sitting and waiting until someone gives you a new product (A-13).

In the beginning, I was not familiar with the process. But with time, I learned how to write proposals and how to 'sell' by telling what would be improved. Now I have prepared two rationalisation proposals on wastewater, but they have not yet been registered. What is improving? In the first proposal, wastewater containing impurities after refining of fatty acid ethyl ester was sent for incineration. In the second proposal, a tour group suggested changing an existing sump, which would contribute to a deeper separation of oil and water phases, and enable the use of recycled water in the repeated production cycle. Both proposals involved many people, who helped me to go through the administrative process. These are some of my colleagues who were registered as authors, commissioners for innovation, and people from the bureau, but also our senior managers who needed to sign... It took me roughly six to eight months to get the initiative implemented. (C-6)

The research participants pointed out that they construct an identity as both commissioners for innovation and the authors of the proposals in the social learning process. They perform discussions and experiments together with the authors and 'proposal team', and share their knowledge about possible solutions gained sometimes from the internet or their own tests. This helps front-line managers who propose ideas to move from being a peripheral participant to an

expert in organising, to so-called '*being entrepreneurial*' (A-13). Front-line managers as authors and team members are mutually engaged in the practices that contribute to the experiments (holding discussions with internal or external experts, sharing documentation to monitor test results) and draw upon a shared repertoire of resources (such as agreed assessment criteria, application forms, unpaid time for tests) in the joint enterprise in order to bring a new 'green' technical solution from the initial phase to the phase of calculating economic and environmental impacts. The research participants in the community take different identities throughout the whole process, starting from a 'salesperson' for the proposal, e.g. to shorten the process through re-use of water in '*the repeated production cycle*' or as an 'evaluator of the proposal', or a 'project manager', to achieve its implementation. The research participants act as intellectual partners for their team members as C-6 highlighted, to support their learning by reflecting on the ideas or helping other members to articulate their ideas as official proposals, as well as reflecting on the possible rejection of their environmental proposals due to them being not 'implementable'.

However, front-line managers emphasise a need to 'grow' the community as there are a limited number of people who are engaged in environmental innovation, such as new authors or people who take the extra time to participate in the tests or implement the projects. They highlight the difficult economic situation in Belarus, which generates boundary across different employees' perspectives about the type of rewards for participation. Here are a few examples:

There are a lot of cuts in the personnel, so that many just fear becoming redundant. It is just easier not to participate in additional activities and sit passively. Nobody will value your [environmental] actions because you are on the list to be made redundant. Why bother with the awards if you will be redundant anyway? (A-17)

We just need to be aware of the current difficult economic situation. The company is conscious of giving payment for a successfully implemented project. The rewards will be given only if the usefulness of the project is evident. It is just bureaucratic hurdles. So, these rewards are distant, not for now. So, many people are not motivated by 'potential rewards' for

environmental innovation. We need other practices to motivate these people. (B-12)

The research participants mentioned that the traditional rewarding mechanisms are more '*bureaucratic hurdles*' (B-12) than motivational tools for environmental protection. The quotations above suggest that cutting personal and social inequality prevents many people from participating in the community of practice. The extracts above also illustrate that some employees experience the world very differently than the front-line managers, and feel that the current situation does not provide a sense of doing these activities voluntarily. Fear of being made redundant changes the perspective of an employee regarding participation in the community of environmental innovations, and prevents 'newcomers' from taking the initiative in proposing an environmental suggestion. Thus, the different perspectives on motivation and rewards (on a financial reward in particular) generate potential misunderstanding and confusion among people about someone who proposes an idea for improvement regularly and those who are not putting any effort into this because they lack motivation. This generates another opportunity for learning.

5.4. 'Greening' and cleaning

This section presents the findings on the community which involves people concerned with a greener and tidier workplace. Like other sections, it begins with the knowledge required to participate in the community and its alignment goal, the way in which the community is comprised, and how learning and boundaries across different perspective on the traditional practices inherited in the Soviet Union ('greening activities') occur in the community.

Like the previous community of practice, the fourth community of practice 'greening and cleaning' is inherited from the Soviet time, although it has changed and developed in the last two decades as part of the companies' environmental protection activities. Although only eight research participants mentioned their participation in this community of practice in their interviews, this does not necessarily indicate that the community is small. On the contrary, it may include a large number of workers who were not interviewed in this study as it is a community of practice in which any employees can participate regardless of their status in the company hierarchy. However, as supervisors of their teams, the

front-line managers considered it important to share their perceptions about the 'greening and cleaning' community. The research participants were clear that they are involved in a community of enthusiastic people who are concerned about waste, and the lack of plants in their working place.

Because we are enthusiastic about the environment, my colleagues and I love to make our unit greener. You can see here, it is clean and green (shows). 'Greening' means to start with yourself and make your place greener. We are a community of people which generates a small contribution to the environment. (A-11)

We have some enthusiastic people who have designed a little garden, and make interesting compositions from recyclables. I think this was initiated several years ago, and these people continue their work voluntarily. Nobody forces them to do so. This is for me engagement in greening. (C-12) (see Figure 6.3.)



Figure 6.3. A garden designed by enthusiastic workers in Case C (Author)

The extracts and Figure 6.3. above provide the evidence that the research participants understood 'ekologizatsiia' (translated in English: 'corporate greening') as something related specifically to making their surroundings, either their work or territory, greener, by means of plants and flowers. They feel that greening should begin in their own personal space. They proudly showed their contribution to the environment through planting flowers and tidying up,

demonstrating a clean and green workplace, and were mutually engaged in 'greening' together. As the quotations (A-12 and C-12) demonstrate, the knowledge required to participate in the community of practice is not wide, thus allowing workers of all levels to enjoy 'greenness', and enthusiastically engage with making the work surroundings green.

It is also important to note that whereas the previous three 'green' communities of practice were initiated by the government or organisational actors of the regulated chemical industry, these communities of practice have emerged from the existing Soviet practices, and are comprised of a group of enthusiastic people who have come together around a potentially shared enterprise and need for knowledge (Wenger, 1998). Historically, participation in the community associated with the alignment goal to make their territory clean has been inherited from Soviet times, and is still associated with greening and green activities. There are two practices reported by the research participants, *Subbotniki* and '*Culture of production*', which provide useful insights into the learning environment of the 'greening and cleaning' community.

The first practice is called *Subbotniki* (from the Russian word '*subbota*', meaning Saturday). Originally, the concept of *Subbotniki* refers to a day of unpaid labour, which usually falls on a Saturday, and was intended to unite the revolutionary-minded masses and promote the ideas of socialism through labour (Chase, 1989). In the post-Soviet context, the research participants view *Subbotniki* as an idea which is associated with enthusiasm and unpaid voluntary work, as one research participant explains:

We engage in voluntary work on greening plants and cleaning activities, called 'Subbotniki'. It is a day or two a year, when people come together for major spring cleaning at their workplaces or home neighbourhoods. This is a good activity and gives you the feeling you are doing something good for your surroundings. (B-3)

If we clean our working place and surrounding, we make the workplace green. Consequently, the air around us is fresher and cleaner. (C-8)

In this context, the workers participate in the 'greening' activities inherited from Soviet times and share a sense of belonging to the group. Identification with the

company and country are important features that make them engage in these greening activities. The research participants see meaning in the community as they learn not only how to make their places greener but, through the shared discourse about waste they have learnt, why they should plant plants if they want to have 'clean air'. Greening contributes to an individual participant's identity as someone who cares about their surroundings, and that it is 'green'. It also moves them further along the trajectory from being a legitimate peripheral participant; their identity in the association changes as they become someone who is knowledgeable. Here the word 'greening' seems to be taken literally 'to make the workplace green and clean', such as by planting flowers or trees in the grounds of the plant.

The second practice which has been inherited from the Soviet Union is participating in the 'culture of production' activities. The official definition of 'culture of production' is: '*a set of formal requirements for the technical, economic, organizational and aesthetic level of production. The concept of the culture of production also includes the degree of perfection of mastering a particular branch of knowledge or activity: labour, technology, production, management, environmental protection etc.*' (Pogoradze, 1990). The definition indicates a level of professionalism that the employees demonstrate in several areas of speciality. The research participants in this study view the culture of production as a way to mastery of their knowledge of technical discipline and cleanliness:

We have such a [common] understanding about environmental responsibility as the culture of production. The culture of production starts from [your] own workplace, your surroundings in the production line or office, and also the entire organisation...as we have chemical processes, you need to know the consequences associated with the changes in production and how they affect the environment. (A-13)

Well, the concept of culture or production is associated with technological discipline which includes environmental [protection]. Regular work and environmental protection cannot be divided. We have a record and knowledge of environmental indicators is part of the technological discipline and cleanness (B-4)

Checks within the culture of production are performed monthly and use the five-point system. Every unit gets marks according to the criteria. Every worker knows that if I have a piece of paper lying wrongly, dust on the food machinery, or in the surroundings of the shop, or if there are cigarette butts lying around, then it is even close to being an issue leading to the loss of our bonus (in Russian: 'premia'). Therefore, every employee, from the ordinary worker to the deputy director, knows what culture of production means and knows the consequences. (A-3)

This evidence highlights two main characteristics of the culture of production as a learning process to develop the values of common 'green and clean' culture in chemical plants. As the quotations present, the culture of production has meaning as the participants learned not only how to make their places cleaner but is used to develop an internal locus of control of an employee by getting them to take responsibility for their own workplace. There was a shared repertoire involved in this, such as the discourse about 'dustiness is a problem' and the norm that empty spaces are unacceptable. The 'greening and cleaning' exercise contributes to the community's joint enterprise and forms part of the community's response to the technical discipline and shared responsibility for flora, and is found through being a master of the production that is required for chemical production.

The main boundary perceived by the front-line managers relates to the limited motivation of non-participants to contribute to the national flora and fauna. Below, the research participants described different interpretations and how conflicts occurred between two groups of employees – people who have a concern for local flora and fauna as part of the environment and those who do not. The research participants felt that the measures were out-dated, and participation was not motivated:

I personally think that all the Soviet measures, to place someone's picture on the wall, are fake and outdated. Nobody feels motivated by these symbolic values. But I know some people feel it is important. (B-1)

Yes, some come because they pay respect to the past, but many just sabotage these activities. They come and discourage others. I feel that these activities are just out-dated and we need to have new forms. (B-8)

I feel that personnel are treated as a resource associated with productivity, efficiency, effectiveness, and more recently, competitiveness. However, there is a difference between the Western European HR and the HR function in Belarus. Whereas in Western European companies, it is expected that an employee can be engaged voluntarily and show their citizenship, in Belarus, voluntary work is not expected but it is 'participation on request' (in Russian: 'dobrovol'no-prinuditel'noe ushchastiia') (smiles). This means if we speak about Subbotniki, we speak about volunteering activities; however, today they look rather like 'on purpose' than really voluntarily. It generates additional stress for those who refuse to participate (A-3).

As the research participant mentioned, there is a conflict between Soviet-type activities that are supposed to create engagement (Gregory, Ohlson, & Arvai, 2006) being followed by active disengagement in environmental activities. The participant feels that the HR function in the case study companies represents rather a traditional personnel management, focusing on hiring, training activities and ideological work. The expected volunteering in green initiatives, for example *Subbotniki*, are seen as being 'on request' because they will be refused by many employees. The research participants highlight 'the loss of bonus' in the case of failing to fulfil all the criteria of the monthly checks, and the introduction of formal control mechanisms aimed at generating technological discipline, which is part of the professional discipline in chemical plants. Thus, the research participants perceive that their professionalism and mastery can control their area of responsibility and, consequently, engagement only partially.

5.5. Summary of the chapter

The purpose of this chapter is to understand how the learning of environmental responsibility occurs in the three organisations in Belarus, and what the role of the front-line managers is in this process. Unlike individual perspectives that focus on the acquisition of information and skills, the analysis of this chapter uses a community of practice concept (Wenger, 1998), which is relevant to this study in two ways. First, the challenge of identifying communities of practice helped us to analyse the data using four components of situated learning (community, practice, meaning, identity). Second, the use of communities of practice was beneficial for identifying boundaries which are places of potential

misunderstanding and confusion arising from the different regimes of competence: commitments, values, repertoires, and perspectives (Wenger, 1998). In this study, changes in shared histories of learning between the Soviet and post-Soviet eras inevitably create boundaries between those who have been participating and those who have not.

The findings present four communities of practice: '*reduction of hazardous substances*', '*energy efficiency*', '*environmental innovation*', and '*greening and cleaning*'. Front-line managers participate in different communities and take different identities. They act as either commissioners for environmental protection, 'green' energy users or good citizens. By adopting these different identities, they build a connection point for knowledge-sharing between the internal actors, as well as actors outside the chemical plants, and ultimately, develop and maintain communities of practice. The findings of the chapter suggest that the learning in three plants follows the traditional top-down method whereby the government is seen as imposing social and collaborative methods on the workforce, compelling chemical plants to share and collaborate, and then controlling and tracking what the businesses have achieved in terms of environmental performance. Given the context of situated learning in Belarusian government-controlled plants, learning for corporate greening occurs through a combination of both formal processes guided by established practices of environmental training, examination, punishment and control inherited from the Soviet Union, and the informal processes of observation, learning by doing, and discussion with colleagues. The chapter provides evidence that the practices regarding environmental responsibility in all three government-controlled chemical plants is a relatively new area of learning for front-line managers (since 2007, when EMS was introduced, or since 2011, when Russia increased its gas prices). Over this period, many front-line managers have moved from being a peripheral participant to being an expert who is approached by new members with questions. The analysis has found that engaging in routine practices is an important means for front-line managers of sharing and gaining skills and knowledge in the form of 'learning by doing'. Practices, such as discussions with colleagues, meetings, instructions, that lead to learning have involved the use of a range of formal processes created by the chemical plants, as well as by governmental bodies. In this regard, artefacts are not just background objects that represent past learning - they are devices that distribute work, regulate

activities and define norms of 'good' practice. front-line managers use these different artefacts, such as limits, costs, calculations, which represent continuous change, supported by everyday organisational practices of the administrative command institutional model inherited from the Soviet Union to achieve their ends.

The findings of this chapter provide evidence that changes in shared histories of learning about 'environmental protection' between Soviet and post-Soviet time have created 'greening' as a boundary 'maker' in the learning environment the experience. The legal, societal and legal challenges of the post-Soviet Belarussian model of environmental protection, in which social learning of front-line managers occurs, creates boundaries between those who have been participating and those who are disappointed and withdraw from participation. For some of the front-line managers, boundaries are a source of significant uncertainties between agendas; for others, they are related to unpredictable and complex legal changes, which at the same time provide both risks and opportunities for more 'green' initiatives; and still for others, they are out-dated practices inherited from the Soviet Union, now unattractive on the eyes of all participants. Three types of boundaries are significant to the 'green' community – boundaries: across societal values regarding the environment; across participant perspectives on shared environmental responsibility; and across different assumptions about organisational versus individual responsibility and agendas between departments. The implication is that front-line managers are involved in removing these boundaries and sustaining the communities of practice. This important finding builds a platform for exploring the use of boundary objects in their boundary work in the subsequent chapter.

CHAPTER 6: BOUNDARY OBJECTS

The purpose of this chapter is to explore learning for corporate greening that takes place around the boundary objects in the three Belarussian chemical plants. The data analysis in this chapter utilises the concept of the boundary object, which bridges individual learning practices with community practices (Lave & Wenger, 1991). The results of the analysis show that participants employ visionary, structural and market-based boundary objects as discourse constructed by socio-historical influences such as societal changes, law, and market. Wenger (2000) defines boundary objects as discourse as ‘the experience of a common language that allows people to communicate and negotiate meanings across boundaries’ (p. 236).

First, the section presents that learning around structural boundary object ‘law’ occurs by providing infrastructure for discussion, engagement and knowledge transfer among community members (Benn & Martin, 2010; Yakura, 2002). Next, visionary boundary object is a conceptual boundary object with ‘high level of legitimacy’ (Briers & Chua, 2001, p. 242) with which it is difficult to argue. Thus, learning around visionary boundary object ‘Rodina’ (homeland) occurs by motivating staff to engage in an informal and formal discussion around environmental protection and acting as good patriotic citizens. Finally, market-based boundary object underlies the analytical and reflective properties for learning of members in communities of practice about competitors, markets and demand-supply relationship in relation to environmental issues. The learning around boundary object ‘market’ occurs through discussions and meetings on how to balance the environmental responsibility of a company with its market position, in a transition economy which is a new skill for front-line managers, who have received their formal education as chemical engineers during Soviet time.

The findings of this chapter indicate places for new practices, in which these boundary objects facilitate learning by encouraging an affinity for the national environment, but also facilitate a transition from the Soviet type of thinking to a post-Soviet mindset towards ‘green’ practices. The section explains that these

boundary objects create both a potential for engagement in 'green' communities of practice, as well as new impulses for facilitating learning and practices.

This chapter is structured in three sections. The section 6.1. focuses on interactions around the structural boundary object 'law', which sets useful and less useful formal and informal mechanisms for environmental knowledge dissemination. The section 6.2. presents the results of research participants' interactions with the visionary boundary object '*Rodina*' (in English: *Homeland*), which is conceptual and evokes positive as well as negative emotive responses across diverse community members to the patriotic meaning of environmental responsibility. Finally, the section 6.3. shows the results from interactions concerning the market-related boundary object 'market', which establish new commercial ways to deal with environmental issues for the transition economy market-related relations within the local and international chemical industry. Section 6.4. provides a conclusion to the chapter.

6.1. Structural boundary object: Law

The most obvious area in which the 'green' communities in Belarus struggle with a boundary is the complexity of legal information, which generates conflicting agendas between the state actors who produce legislation and the chemical plants which execute environmental law. The research participants' perception is that the environmental laws have fluctuated in the course of the last 25 years. More complex and tougher ecological laws have been contingent upon the political agendas of the autocratic direction of the president, and other state actors. Rapid integration of the legislative changes is perceived by the research participants as a challenge, and brings out implementation issues. This section presents different interpretations of the structural boundary object 'law', which provides an infrastructure for discussion and a structured way to address the boundaries between community members. It includes interpretations of the boundary object 'law' as a symbol for the commitment of the plant to the State, which represents the traditional view of integrating changes. The law is perceived as a weapon to fight against state actors with, this being the view of the front-line managers who see value in creating knowledge to avoid punishment. Finally, law is seen as a means of collecting money for the government budget which presents a view of those employees who do not believe in a goodwill and social orientation of the current government. The section shows that the learning around

the structural boundary object 'law' occurs in developing of new skills and arguments in negotiating between different agendas of organisational and state actors across the boundary. The boundary object is, however, not used by the community members to resolve differences across boundaries between different agendas, but is used to allow participants to proceed together despite or even while, leveraging differences to create new practices.

Law as a symbol of commitment/loyalty to the State. The first interpretation relates to seeing changes in environmental 'law' in a positive light, as a 'commitment to the state'. In their interviews, the research participants speak about a natural growth of complexity of environmental legislation in comparison to the Soviet period, through an increased number of international conventions and the necessity to adapt to international requirements. In this way, front-line managers show an understanding of the State as compliance with the changes is perceived as a symbol for the commitment of the organisation to the State:

Our environmental legislation changes all the time and is very dynamic. Changes happen because Belarus has ratified a lot of international conventions. Each convention has its own requirements. So, Belarus should adjust their legal documents, which is understandable. (A-14)

We are in Europe and we have to perform [environmentally friendly operations]. We are connected with Europe: while the prevailing wind comes from Europe, rivers flow into the Baltic Sea...Therefore, legislation gives us structure which is adjusted to the European standards. It is sort of a symbol for our commitment to the State who knows what is right. (B-1).

You see, Belarus is recognised [as] a country with [a] well-developed legal system in the area of environmental law ..., some areas are even more developed in comparison to Western countries. If I am not mistaken, we have around 18 [environmental] legislative acts ...These acts give guidelines in difficult situations. Clever people have written these which we need to respect. (A-1)

The extracts from the interviews illustrate that the research participants perceive the boundary object 'law' as well-formed and advanced, something which gives

them guidelines and structure for discussion and interaction within the community. The research participants demonstrate knowledge of the legislation by giving the exact number of environmental laws in Belarus. They indicate awareness that the source of new changes relates to changes in international legislation due to Belarus joining international conventions. They show understanding for the growth of the number of laws and how more rigorous regulations have been introduced in national environmental laws in comparison to European regulations because of the shared natural landscapes, such as the flow of the wind and rivers between Europe and Belarus. Thus, the boundary object here is perceived as a helpful element which establishes an infrastructure for discussion between enterprises and the state.

The Law as a weapon. Although the first interpretation seems to be the view of the majority of front-line managers, another group of research participants see 'law' as a weapon. In this case, the structural boundary object 'law' explains the connections between people who know the formal processes (based on legislation) and beginners, who are unfamiliar with new environmental regulation. In particular, this interpretation of the boundary object concerns knowledge-sharing between disparate communities, such as the community of 'energy efficiency', with the strong expertise of the Department of Power Energy, or 'environmental innovation', with the expert-knowledge of necessary documentation for innovative proposals. Detailed knowledge of environmental law is considered as a 'weapon' which can be used for building a convincing argument, and creating an equal and meaningful two-way dialogue with experts:

We are rather generalists about legislation. Without learning the specifics [of the environmental law], it is impossible to achieve common results with 'energetiki' or people from the innovation department. Always something does not go to your satisfaction, they will not listen to your explanation, but then 'boom', they bring a fact from legislation to show that your idea is not viable. Better you learn to fight back and use law as a weapon. (C-1)

I have kept a record of all internal audits this year: I counted 153 checks which have been conducted by ourselves, according to the schedules of our target plans. We always need to have arguments and explanations according to the law. Knowledge [of legislation] is our weapon (A-19).

The state is the initiator of any [environmental] regulations...and we should know the changes... Knowing these changes is our strength and weapon at the same time. So, if you do not know how to integrate these changes in your innovative proposal – you are weak, the experts will not accept it. So, you need to constantly update your knowledge before you prepare a proposal. (C-11)

The research participants see the boundary object 'law' as a key that helps them to negotiate with the experts in different 'green' communities of practice. For this reason, they feel they need to have more than just general knowledge of legislation, but be familiar with the details of legislative documents. Therefore, learning occurs be 'constantly updating knowledge' through self-learning in order to be able to use the same language, like the experts from structural units.

The Law and residential areas. Another interpretation of the structural boundary object 'law' is related to residential areas. The research participants interpreted highlighted tensions between employees who live in residential areas close to the grounds of the chemical plant, and those who live far from it. In particular, it affects Case B and one division of a chemical-producing factory in Case A, which are located in the residential area of their cities:

You can clean everything in your home but then put all your waste in front of your house. This is the Belarusian mentality. Similar things happen sometimes in our plant. We produce fibre, which is very polluting. The production is inside the city. I am from the residential area and know that people are very, very concerned about this issue here, that residential areas are surrounded by the company, the chemical (emphasises) company. Although I know that we fulfil necessary legal parameters, I am asking myself: 'Is it enough'? Can the level of emissions thrown into the atmosphere be lowered to reduce all the illnesses of children living in the surrounding area? We are for them just 'Ivanov, Petrov, Sidorov'. But many do not understand my questions. Therefore, I keep asking the question to protect my people who live close to the company. That is, again, that the greening of the workplace that should be. (B-3)

In our production we use (emphasises) a large concentration of heat stabilizers. Heat stabilisers increase in the air in the area where I live. We

can even see the yellow smoke from the plant. Because of this, I appealed to the Nature Protection Department on emissions disposal but received the answer 'the company does everything aligned with the legislative framework'... I contacted a local newspaper and asked my neighbours to write letters to the company... well, it is probably a couple of years for me. Well, a couple of years . . . maybe five or six . . . so to speak in Russian, to "gouge" (in Russian: 'dolbala') the department. And in the end, the problem was resolved. They somewhere found the source of the yellow smoke and that it was possible to remove it or dispose of it in some way. I would say that because of collective effort of the neighbours, the problem was solved. (A-25)

The quotes highlight tensions between employees who live in residential areas close to the chemical plants, and are familiar with the health issues of the people from the area, and those who consider these people just as 'Ivanov, Petrov, Sidorov' (as an expression to demonstrate masses of unknown people). Here, the research participants highlight a distance concerning the existing environmental problems caused by unacceptable environmentally-unfriendly production practices. The research participants' description of the situation indicates that they recognise a lack of formal environmental measures aimed at ensuring a low level of emissions, and a level of uncertainty, or even anxiety, experienced by people living in residential areas, over their health. Furthermore, the research participants believe that it is not enough to adhere to legal emission limits. They seek to do justice for those who lack a voice, such as their neighbours in the residential areas. By taking on such a role, the research participants collaborate with similar ecologically-minded citizens outside the companies, local newspapers, and environmental departments, to facilitate the education of the organisation regarding new practices which would reduce the environmental burden on the local population.

'Punishing bodies'. The final interpretation of the structural boundary object 'law' is a way of describing external actors, such as inspectors. Some participants felt that such external actors were, at times, deliberately looking for mistakes and gaps in procedures in the chemical plants in order to impose fines, without understanding the business of the plants.

The controlling organisations have never helped us. They are punishing bodies, out to replenish the budget. If the regulatory documents and environmental standards are amended, you are normally given a few weeks or one month to adjust production. If a small company can implement these changes quickly, a large organisation [needs] additional time to adjust existing processes to a new procedure, not an easy task. So, the controlling organisations come just after any amendments to find any breaches (A-1).

Special state standardisation agencies check the [national] standards every four years. If we do not comply with the standards we lose the certificate which stops us from doing our business or applying for international certificates.... they are just looking to punish us. It's a pain....Better not to try not to comply with the ISO state standards (smiles). (B-12)

The research participants described negative interpretations of the controlling procedure for the boundary object 'law' by describing the environmental inspectors as 'punishing bodies', demonstrating more obvious boundaries between members and non-members of their respective communities of practice. The research participants use punishing artefacts such as regulatory documents, instructions, and directives, as well as consequences such as 'penalties', to express their emotional dissatisfaction with the current situation because the government authorities do not understand their production practices.

Considering the same external actors, the research participants specify and name exactly the actors which generate pressure. For example, in order to ensure that the companies' actions comply with legislation, the research participant from Case C explained the importance of the relationship between their company and the state organisations in monitoring water consumption from the Regional Committee:

We have nothing to help [us]. I did not work [on environmental protection] for the first year. We know where to fight, with whom to fight and how to fight, starting with the district inspections and ending with the regional committee and the Ministry...We have roughly 68 stations which need to be measured every day. It is a bouquet of [chemical] substances (smiles).

We need to know the limits and be prepared for this fight as they just punish to gain more budget ... (B-3)

A simple example: the company in the past employed 6,000 people; today there are 2,400 people working in the company. If we talk about the fact that every employee must take a shower after work, [...] the amount of water [from showering] disposed to sewage is lower than in the past. Correct? But the Regional Committee on water does not want to understand (laughs). We are left with the same limits. What does this mean? There are other items that produce some contaminated water. And all this we simply test, they are diluted, well, in the general sewage system. (C-9)

Another issue arose between Case B and the state standardisation agency which did not understand the processes of the company, and forced the company to comply:

Another issue, the product is different ... As a result, we have reduced the amount of inputs. Consequently, the amount of liquid waste has been also changed, as well as its concentration. However, the concentration limits have remained the same. Therefore, it is important that these people working in the standard agency understand our processes and not just read the statistics. For this purpose, we organise different meetings, or I even call to consult on specific issues (B-9).

The above examples show that the research participants feel pressured by the state and feel that the State regulations do not fully recognise the changes that have occurred in the company's production methods. The research participants perceive that, very often, compliance with the legal requirements conflicts with the successful running of chemical production.

To sum up, all three interpretations around the structural boundary object 'law' demonstrate that the object is a pivot between different agendas of organisational and state actors across the boundary: between legal executors and the law producers, who feel that the legal infrastructure helps them to communicate across the groups; between front-line managers and experts, who assess how the changing law requires additional effort to deepen their knowledge and to use

it as a weapon in communication across the communities; and front-line managers who do not feel that the boundary object provides sufficient infrastructure for discussion, in particular in the controlling phase, where the inspectors are seen as 'punishing bodies. In this way, learning occurs around navigating through unnecessary inspections, which build a window for development - another practice for learning facilitation.

6.2. Visionary boundary object: Rodina (homeland)

This section explores the boundaries across societal values regarding shared environmental responsibilities by analysing interactions around a visionary boundary object, which is a conceptual object, and which awakens emotive responses from interaction between people. It is perceived as carrying a 'high level of legitimacy', which is difficult to argue against (Briers & Chua, 2001, p. 242). In this study, the visionary boundary concept mobilizes the aspirations of all members of this community of practice on broad-ranging environmental concerns around 'Rodina' (in English: '*Homeland*'). Whereas existing research in the Western context broadly assigns boundary objects around the expression '*Homeland*' to emotional feelings of belonging linked with characteristics of the landscape and specific, experienced places, e.g. an area of conservation land in North Frisia in Germany (Döring & Ratter, 2015), the visionary boundary object 'Rodina' in this study represents the patriotic spirit, perseverance and emotional aspiration for an economically strong and prosperous Belarus. Although the key element of the boundary object emphasises the importance of the environment as a common shared good between citizens and government, which contributes to the sustainable economic development of post-Soviet Belarus, the research participants frequently attach other interpretations to it. The understanding of the boundary object ranges from seeing 'Rodina' as: traditional 'Motherland' over 'small Rodina', which describes a 'love' of the surroundings and family to a contemporary post-Soviet boundary object whereby 'it's not a Rodina, it's katorga', which generates disappointment about unfulfilled promises by government, and builds a larger concern for front-line managers as supervisors. learning around visionary boundary object 'Rodina' (homeland) occurs by motivating staff to engage in an informal and formal discussion around environmental protection and acting as good patriotic citizens. The findings of this chapter highlight a shift in the boundary object 'Rodina' from a traditional Soviet

patriotic notion, of working hard and devoting one's efforts to the country, on the one hand, and distrust and de-motivation towards government on the other. Differences in understanding around the boundary object 'Rodina' create the potential to engage or disengage in relationships associated with corporate greening in different communities.

'Motherland' The first interpretation relates to the understanding of visionary boundary object 'Rodina' as 'Motherland', which represents the traditional aspirations of some community members towards shared environmental responsibilities between all members of all communities, including governmental actors. Here, the research participants highlight the importance of their role as professionals, working hard for the benefit of their homeland, as the following quotes present:

I would like to see our Motherland in the image of a large family, where there are only compatriots - brothers and sisters, parents and children. The country takes care of you. Where all citizens follow the ideals of a better and clean Belarus, and its prosperity, by doing waste separation every day or looking at quality of water utilisation (C-10)

I feel that environmental responsibility is my call of duty. When I think about it more deeply, I come to the conclusion: this is connected with a feeling about a country as my Motherland, where you live, and there are different generations. Well, maybe it is from what I learned from my parents and grandfather who went through the whole of WWII. (B-8)

I think ecology is somehow in our blood. You will not see in Belarus any rubbish around. Well, it again, it turns out that, as children, are taught in their time: it is impossible to leave the garbage lying on the floor. We do it to keep our Motherland prosperous and clean. Now at work, we all put it in containers, that is where we collect it, that is to say, all this so as not to leave it on the floor, or on pallets. (C-4)

The quotations highlight important elements in their 'green' work that enables them to have conversations and social interaction between members of 'green' communities of practice and, in this way, generate a feeling of belonging to the homeland, Belarus. In these quotes, the research participants draw on a

multitude of aspects to explain what 'Homeland' means to them. Besides family references ('*a large family, where there are only native people*' of C-10), emphasis is put on learning the patriotic feeling of '*where you live and there are different generations*' (B-8). Furthermore, the research participants describe environmental duties as a moral obligation towards society, which can be framed as a symbolic identification that stimulates learning and engagement. The patriotic notion and devotion to their country in environmental protection is based on societal values perceived as something that has been learned from their parents or past experience during the Second World War. They feel that patriotism, developed by historical elements, has helped them to set an example and 'succeed with environmental protection'. Consequently, the visionary boundary object has allowed the Belarusian front-line managers to shape their own attitudes towards environmental protection, and thus influence their engagement in environmental activities in everyday life. As the quotations suggest, front-line managers have learnt to engage in environmental protection by internalising the empathy and care towards their homeland as an important element of their professional responsibility for the environment and their everyday duties. By recognising their role as citizens who contribute to a 'clean Belarus', the research participants invoke a greater emotional response toward environmental issues (Fineman, 1999; Russell & Griffiths, 2008). The term '*call of duty*', used often by the front-line managers, reflects enacting green commitment (Fineman, 1999), demonstrating pride in acting in a reliable way in their daily operational duties concerning any environmental issues. Thus, '*call of duty*' reflects similar thinking to '*ecology is in our blood*', which highlights the unspoken societal values of respect towards any skills which has been learnt from the past. It is around this theme that the diverse skills and capabilities of the community of practice, such as waste separation and energy use, are linked.

'Small Rodina' Other quotes present a different understanding of the expression 'Rodina'. This interpretation relates to 'small Rodina', which represents 'love' for surroundings and family as changing in relation to societal values that have prevailed since the collapse of the Soviet Union in 1991. Thus, one front-line manager commented:

Every person has two homelands: small and large. The small one is the city, the street, the house where you were born. The big one is the

Motherland of which you are a citizen. I think that the homeland is a place where a person returns with joy and pride... [This is] a place for which a person is a 'hero', and no matter who you are, the main thing is that he loves this place and cherishes it. A 'hero' is when one should 'consider in light of your own integrity' instead of believing that somebody else can protect the environment of their homeland. (A-15)

Most probably the concept of ecology is still on the ideological level, like it was from our childhood. I remember that during Soviet times, we developed a love for the natural environment of our country. We called our country 'Belarus blue eyes' (in Russian: 'Belarus-sinyeokaya') because of its beautiful rivers and forests. Now, of course, the complexity at the company is large. Still, if I see some issues and problems in this area and, reflecting on this, I think that I have done something right, it gives me the feeling that I have contributed to the beauty of the country. In contrast, if someone does not understand, those people still need to be shown and to be told. (C-3)

In the field of ecology, you should home in on your region or to the whole country rather than just follow orders. Broadly speaking, you imagine you are here on the mountain, and then you see your beloved place around, where you were born and where your kids are running around. If you go up the mountain, you will see other cities and the environment of the country. The phrase seems banal – but that's what you make dirty if you throw away any waste. You ask yourself what you did wrong. But maybe it does not result in some kind of global catastrophe, but out of these [actions], little things add up, so I think that people have understood this; well, you did a few steps, you have made a lot of effort and did not throw it in places which are not for waste. The main thing is that the man himself is aware of his involvement in this, [whether] small or large. (A-5)

Here, participants see priorities in the shared responsibility for local natural resources and relying on one's own integrity rather than following orders from the top. Moreover, the research participants present three 'soft' elements that are generated through changes from the Soviet ideology of 'conservation', with the unlimited environmental resources of USSR, to a new post-Soviet Belarussian

ideology, seeing the environment as a national asset. Because the government does not totally fulfil social benefits promises, the research participants felt they were not obliged to carry out mandatory environmental protection activities for the State. Instead they preoccupy themselves with environmental protection for their own family and surroundings. The quotations above suggest that the feeling of love and respect for your country, its history and traditions are perceived as one of the most important factors in the country's success, in terms of avoiding a '*global catastrophe*' or '*keeping the country beautiful*'. It seems that patriotism is perceived by the research participants as devotion to particular places and people, at the local as well as the national level. In particular, the second quotation makes a connection between the local aspect and the country level by 'zooming' the picture out like in a camera. By speaking about 'going up the mountain', the research participant seems to demonstrate that loving and caring about other places in the country allows them to focus on their efforts to do more good in the world (Tranter & Lester, 2015). A similar notion is reflected in other literature. Patriotic feelings, such as love of the country's environment, promote moral virtue associated with altruism, and help the research participants emotionally engage with the environment (Griskevicius et al., 2010).

It's not a Rodina, it's a 'katorga' (in English: prison). Although the opinions about positive responsibility were highlighted above, there were some thoughts that the young generation is not interested in environmental issues, and are unwilling to participate in 'green' communities of practice. In particular, it is related to community 'greening and cleaning', such as participation in *Subbotniki* and the activities associated with *culture of production*. The research participants see unwillingness to participate in volunteer activities as a change in society towards financial and economic matters instead of environmental matters. Additional duties are perceived as 'katorga' (Translation: 'prison') than a beloved 'Rodina':

Well, it probably evolved over the years. Even if we take the Soviet times, in which we were brought up, there was such a thing as Rodina. Now, at the moment, people have lost the sense of Rodina; they only have a sense of money. That is, if I am not paid for this time, I will not perform. All additional activities, such as cleaning at the Subbotniki, are perceived as katorga. Their motto is: 'It does not concern me, so I will not do that' (C-8).

Some other quotes suggest:

What remains, after the Soviet time, is responsibility and soul. Now, young people have become irresponsible for environmental issues or any additional duties.

Interviewer: what do you mean by 'irresponsible'?

Well, the main thing, first the main symbol of this now is material. Well, because of low salaries...this is the answer to all our problems. Well, what will you tell your team members? Will you push if he gets paid 3 million (Author: \$200 monthly). I do not think it is morally correct to let people do additional work for environmental protection. Then we can ask ourselves: how can the person be interested? Maybe I should not say it, but I'm telling the truth (A-19).

The research participant from Case B confirms:

'Now, there are people who would do all that is necessary for the environment as part of their job, and we work hard for our homeland... but believe me, Belarus has this Soviet mentality because we work and get always paid like in the Soviet Union...no initiative [for environmental protection] is expected. (B-5)

These interpretations of the visionary boundary object 'Rodina' suggest that participants feel people in Belarus have lost their patriotic vision towards a clean and prosperous country. The non-participants of the communities of practice are seen as ignorant and unwilling to participate due to the poor working conditions and low wages, which affect their view on shared environmental responsibility. The participants perceive changes from the traditional understanding of values towards the environment to disengagement in 'green' communities of practice. They explained that the initiative is a habit from the past. Participants think that working hard and beyond their contracted hours in the Soviet Union was possible because people were socially protected, and always got paid.

To summarise, the visionary boundary object 'Rodina' is used by the research participants to highlight different types of values that create boundaries in the communities of practice. The participants highlighted a shift in the boundary

object 'Rodina', from a traditional Soviet patriotic notion of working hard and devoting one's efforts to the country, to a contemporary post-Soviet boundary object. There are two perceptions: the Soviet legacy practices allowed managers to use approved methods to motivate and to reduce frustration about poor economic conditions in the country. However, economic uncertainty (in particular among the young employees) and distrust of the government regarding providing social security are seen as sources of a lack of motivation for some people to support environmental projects. In this learning environment, the boundary object has different meanings to and different uses for the range of actors engaged with it.

6.3. Market-related boundary object: Market

The third boundary object that emerges from the interviews is the conceptual connection between the environmentally-friendly chemical production and resources efficiency and costs reduction. This section focuses on a rational boundary object that establishes social relationships with customers and suppliers, and provides a venue for ongoing exchange of communication across communities. The market-related boundary object underlies the analytical properties of learning of the members of the community of practice for competitors, markets and the demand-supply relationship in relation to environmental issues. The learning occurs through discussions and meetings on how to balance environmental responsibility and the market position of their company, which is a new skill for front-line managers who have received their formal education as chemical engineers during the Soviet era. They need to learn the language they might use to design the process for a price agreement or customer specification for an environmentally-friendly product, or to build a convincing argument for the introduction of necessary equipment for the reduction of hazardous waste. It also addresses a third area where boundaries to area of concern of the 'green' communities of practice lie between the various perspectives about costs for environmental protection that are relevant to members' engagement or disengagement in the 'green' communities. The section shows that members of communities struggle with the changing mindset and knowledge of the market and customer. This change in relations has also facilitated the emergence of new interpretations of the boundary object 'market', and informed consequential actions of several groups of community members

who generate boundaries across perspectives on the price of ecology. This section first explains the perspective of production managers, who see value in improving quality and service delivery and handle valued customers (*'ecology is an area to satisfy customers'*). Then, it presents top-level managers, who emphasise the importance of resource efficiency activities, such as energy, resources and water, to achieve competitive pricing (*'ecology equals costs efficiency'*). Finally, the section explores the view of members of administrative units (experts), who think that investment in environment is costly and any investments in environmental protection require scientific (short-term) justification and should fulfil the central government's planning requirements (*'ecology is costly'*). The results of this section show that the communication around market-related boundary objects in the 'green' communities of practice involves more than one perspective on relationships with clients or suppliers, and the conversation about market relationships act as a boundary object between these perspectives, generating new windows for learning to negotiate the meaning of commercial/market-related benefits of activities within communities, which helps to extend the boundaries.

'Ecology is an area to satisfy customers'. According to the research participants, the Belarussian chemical products market has changed since the collapse of the Soviet Union, and customer requirements have become a much more important consideration for them.

Soviet Belarus was a planned economy, where investment and production decisions were an integrated part of our production. All production orders [In Russian: proizvodstvienniy zakaz] were received from Moscow. We were sort of an 'assembly line' for the Soviet Union, where we received the orders for the product, but then re-sold the products back to Soviet republics, with a stable demand [...] nobody thought about even asking customers about their environmental requirements, nobody even knew the word 'client' (smiles). We had partners and received orders from Moscow with certain specifications. (A-1)

The Belarussian [chemical] market, like the rest of the former Soviet Union republics, was just unprepared for the new market system of relations. After the Soviet Union collapsed, we saw a big potential in addressing clients' needs for environment [al protection] as this was the area about

which they asked us first – do you have an ecological certificate? Then they started to talk. (C-11)

Belarus was always a rich market. So, our products were an essential component for other plants in the Soviet Union. However, nobody thought about even asking customers about their environmental requirements, nobody even knew the word 'client' (smiles). We had [government] partners and received orders from Moscow with certain specifications. Now we have extended our clients base to Western countries, but it is not easy. They have totally different expectations, and the orders can be very small. But we need to accept them to survive. (B-11)

Here, the research participants explain that the chemical companies in Belarus were not prepared for new market relationships after the collapse of the Soviet Union, when customer needs with respect to the use of hazardous substances and more environmentally friendly production methods became more important. Thus, changes in the market and, more importantly, customer requirements for more environmental protection, created possibilities for organisations to learn about 'greener' ways of working. Thus, members of the community 'use of hazardous substances' selected and maintained the market-related boundary objects to link with other members of communities who saw the importance of customer' environmental requirements over government orders and legal compliance.

Importantly, the research participants in the production departments spoke about the organisational capabilities needed to establish new relationships with marketing and sales departments. This was new to production managers as it was not required during Soviet times.

We experienced the drop in effective demand from the traditional markets through cheaper prices from China and Russia. Now we try to conquer new export markets. In 2015, the external demand from Russia was rather weak. So, we needed to adjust to promote our products. We have a sales department, but they are not marketing. Here, we need to get more publicity to get new clients and tell them what we do on ecology. (A-12)

So, we had really good quality products, up to the environmental standards, which could not be sold to [international] countries other than

Russia and former Soviet republics. So, the introduction of the marketing function was one of the big changes in the operation, to establish good relations in the market with our clients. (C-11)

The research participants speak about establishing a new function – marketing – which is needed to take care of changes in product requirements, and to ensure the ecological standards are achieved and clearly communicated to the customers. Highlighting big changes for the plants, the research participant from Case C sees value in establishing marketing as a member of the community which helps to create good market relationships and ‘market’ the ecological content of their products. The research participants from Case A, have not spoken about marketing activities in the organisation because they work mainly with Belarussian clients, who do not have particular environmental requirements or work with the Belarussian ecological standards. This echoes findings from the case study in Russia (Crotty, 2016), that businesses in Russia which seek access to international clients integrate environmental criteria into their marketing activities.

‘Ecology equals cost efficiency’. The next interpretation reflects how participants perceive the views of top managers who were seen to emphasise resource efficiency in terms of energy, water and other natural resources to achieve competitive pricing (‘ecology equals costs efficiency’). While Belarus represented steady demand and industrial development during the Soviet Union era, after the dissolution of the Soviet Union, the Belarussian chemical products market was reduced due to the destruction of the supply chain, the loss of the export market from former Soviet republics, and the dependence on Russia in terms of energy and other raw materials. Therefore, achieving competitive costs of goods through efficiency activities was an important perspective in communication between production managers and top-managers:

Due to rapid growth in prices for raw materials and energy resources after the dissolution of the Soviet Union, and the fact that we used and still use mainly gas from Russia, which is very resource-intensive and also polluting, we need to watch our costs. When discussing ecology with our Chief Engineer, the first thing he says - ecology equals costs reduction. So, first we need to reduce costs if we implement environmental activities, then we think about long-term effects (A-19)

Due to rapid growth in prices for raw materials and energy resources after the dissolution of the Soviet Union, and the fact that we used and still use mainly gas from Russia. The main message from the [top] management - we need to watch our costs when producing in an environmentally-friendly manner. (B-9)

When talk [with the Chief Engineer] turns to the effect of the implementation of any ecological activities, the first question asked is 'will this reduce our costs?' So, you always need to be prepared for the question. Otherwise, you will not get support for your activities (C-7)

The research participants from Case A highlighted that during Soviet times, Belarus was a planned economy; large batch production was a symbol of the Belarusian economy. Nowadays, the great threat is from China and Russia, who practice the dumping of cheap products, thus driving the prices down. As the Belarusian market has remained in government control, the research participants from other plants – B-9 and C-7 – have pointed out that the loss of the main supplier – Russia – has generated new perspectives on ecology as a source of cost reduction. Mainly presented by participants as a view of the top managers, the possibility of reducing costs exists through the reduction of energy use, water consumption, and also the reduction of penalties for non-compliance with regulation. Thus, when implementing environmental activities, the front-line managers feel they need to be prepared for a discussion with the top management about costs minimisation in order to maintain a conversation around environmental responsibility in the communities. In this way, different perspectives between production managers and senior managers may generate the potential for establishing new practices, which stimulates conversation among community members around the boundary object 'market'.

'Ecology is costly'. This final interpretation of the market reflects the participant's perceptions of how members of the administrative unit see market forces and costs. Participants feel that technical or other experts in various administrative units of their company see investment in environmental protection as costly and needed only to fulfil the central government's planning requirements.

During the Soviet time, natural resources were always considered as unlimited. Therefore, natural resources should be profitable and be utilised, not because the market is poorly developed but as we are state-owned, we needed to set new contracts where the government negotiates the prices with new clients who change their preferences toward less polluting operations. So, we will not invest if the effect is minimal (A-5)

Ecology is costly and we invest enough in ecology because the reduction of the environmental impact can only be done through massive technological change [...] Although we have invested in some small equipment, you need government support for massive technological change as we are a joint-stock company, with the majority of shares held by [Concern] Belneftekhim. (B-11)

All decisions about investment in ecology or energy savings go through Concern 'Belneftekhim' because we belong to the Concern. Like in Soviet times, they set the targets, suggest what is suitable for us to be modernised, surely with the consultation with our director, and then, they evaluate [the environmental impact]. I cannot imagine how we could do this without their support. (C-5)

Since the organisations are under state ownership, where the state enterprises are organised as joint-stock companies, both research participants above perceived it was obvious that the government would be involved in investment decisions. The research participant C-5 also highlighted that centralised decision-making includes setting economic targets for ecological matters, the use of resources, and timing, and then helps to evaluate the impact. Consequently, there are perceived differences in opinion between the production managers, who would like to invest in environmental protection, and administrative units. Thus, boundaries between the two perspectives on the reduction of energy and water consumption generate interactions between production and administrative units, which for some members of the community of practice are important and relevant to their work.

In sum, the research participants perceive that the boundary object 'Market' has changed over time, from stable and well-planned, large-batch, polluting chemical products during Soviet times to an emerging market with more of a focus on

chemical products that use less hazardous substances, which requires adjustments to customer needs. Specifically, the changes include: changes in demand and the supply of raw materials from former Soviet republics, which led to the absence of a technological basis and the risk of being dependent on raw resources from Russia; a shift towards international markets, which led to a necessity to increase the competitiveness of Belarusian chemical products in terms of the economic and environmental requirements of their international clients. Consequently, the weak competitiveness of their chemical products prevented Belarusian organisations from immediately entering into international markets due to their lack of international standards, confirming the focus on environmentally friendly operations, and marketing management skills to communicate the benefits of the 'green' products clearly. These changes have generated 'learning objectives' in the form of a wish to better understand the requirements of the clients for environmentally-friendly operations, and to be able to market or communicate the benefits of their 'green' products, but also to justify the environmental projects in order to gain support from top-management and structural units. For this purpose, the research participants have introduced certain practice around the market-related boundary object 'market' to facilitate the learning process in their organisations towards being an environmentally responsible business.

6.4. Summary of the chapter

The purpose of this chapter was to explore three types of boundaries across different agendas between internal and external actors, across different societal values, towards a shared environmental responsibility, and across participant perspectives arising from changes in the understanding of three boundary objects moving from Soviet to post-Soviet interpretations. In this data analysis, the concept of boundary object is used to better understand the dynamics of the interactions between members of communities of practice across boundaries, and their changing interpretations moving from Soviet to post-Soviet times. By looking at the different interpretations of environmental responsibility as it seen by the research participants, it allows the researcher to identify the potential for the development of new practices which may facilitate the growth of 'green' communities of practice. The results of the chapter are twofold.

First, the chapter has shown that three boundary objects – the structural

boundary object 'law', the visionary boundary object 'Rodina', and the market-related boundary object 'market' - prompt different responses from community members, and are used for negotiating meaning across boundaries. Whereas the visionary object 'Rodina' encourages discussion and learning about an environmental and prosperous future for Belarus, the meaning around structural object 'law' provided the research participants with an infrastructure for engagement, but also for disengagement, in knowledge transfer. In addition to both visionary and structural boundary objects, this study provided evidence for use of the market-related boundary object 'market' that encourages the front-line managers to develop arguments and search for new ways to 'sell' environmental issues to senior management and their customers on the competitive market.

Secondly, the findings of the chapter present evidence that the front-line managers, in the context of this study, engage with environmental issues across multiple communities and multiple boundaries. While three types of boundaries are places of potential misunderstanding and confusion, the front-line managers see that these also provide opportunities for further learning. The connections across three types of boundaries which are rooted in established organisational practices mainly inherited from the Soviet Union and which are now not attractive to all participants (e.g. rewarding practice). The front-line managers also see a source of disengagement in the distrust of non-community members in government promises. Finally, changing market relations on one hand and still depending on decisions from the government on ecological investment on the other prevents the communities from growing. As a result, additional learning potential for actively involving staff and stakeholders in developing and adapting everyday 'green' practices needs to be generated. Trying to foster learning beyond single practices has led front-line managers to engage with serious boundaries among communities whose members experience the world very differently. Consequently, front-line managers have developed their own facilitating practices, which are discussed in the next chapter.

CHAPTER 7: Practices facilitating learning for corporate greening

This chapter examines the practices through which Belarussian front-line managers seek to facilitate learning for corporate greening in their 'green' communities. According to Wenger (2000) learning facilitation in communities occurs through connecting the members through new practices with the help of 'community coordinators' (p.231) or people who work across the boundaries (Wenger, 1998). This chapter shows that front-line managers act as boundary spanners to facilitate learning in their organisation through boundary spanning activities. In this study, the front-line managers are seen as boundary spanning agents because they formally and informally interact with members of communities of practice which are located inside and outside their organisations. Utilising Wenger's three moods of belonging, i.e. engaging, imaging, aligning (Wenger, 1998), this chapter reveals that front-line managers foster learning of environmental responsibility through several boundary spanning facilitating practices to achieve a mood of belonging in their four 'green' communities of practice:

- *Engaging boundary spanning practices:* engaging is invoked through awareness-raising activities around the structural object 'law' ('sensitisation practices), and creative incentives around the visionary object 'Rodina' ('moral encouragement' practices);
- *Imaging boundary spanning practices:* imaging is facilitated around the boundary object 'Rodina' through maintaining patriotic images of the environmental responsibilities through participating in big commemorative events, and acting as a 'life teacher'; and finally,
- *Aligning boundary spanning practices:* using the structural boundary object 'law' aligning through fostering diverse networks connecting staff with external government actors (consultations with inspectors), and the market-related boundary object 'market' actively encouraging employees' involvement in designing 'green' projects and approaches, and promoting everyday improvisation ('product design teams).

The main argument from the data analysis is that front-line managers use two forms of creating boundary spanning practices (Wenger, 2000): (1) either by re-purposing practices which originated in the Soviet Union, originally not aimed at addressing environmental protection, or (2) by creating new practices that break the old hierarchical structures for more informal interaction, enabling situated learning.

This chapter is structured in the following way. First, the practices of engagement, enacted through awareness-raising and incentives, are presented. Second, imagining practice aimed at maintaining a patriotic image of the shared environmental responsibility is explored. Third, alignment practices for coordination, collaboration, and negotiation with external actors are explained. Section 7.4. provides a conclusion of the chapter.

7.1. Engaging through awareness raising and incentives

According to Wenger (1998), the work for the 'engagement' mode of belonging focuses on (among others) the management of boundaries which allows engagement at peripheries. In this study, the participants engage in the boundary processes that enable newcomers or former communities' members (disengaged employees) to develop the necessary competence to participate in 'green' communities of practice. In order to facilitate a continuous conversation around environmental responsibilities in four of the 'green' communities of practice, front-line managers accommodate two types of practice which are created around the boundary objects 'law' and 'Rodina': sensitisation practices, aimed at finding common ground in interests and needs for shared environmental responsibility; and 'moral encouragement' practices, aimed at recognising the efforts of existing members, and rewarding newcomers' for their willingness to engage.

7.1.1. Sensitisation practices

This section describes how the front-line managers facilitate learning towards more environmentally responsible ways of working by addressing a learning gap in their communities of practice of insufficient legal knowledge. The section first provides briefly the historical background to the practice, and shows how it has been re-purposed by front-line managers to learning needs in the community for the 'use of hazardous substances', and describes the process of facilitation and

their challenges.

In Western sustainability literature, sensitisation practices are used as an umbrella term for a variety of activities for community engagement to ensure sustainability messages are understood by wider society (Domegan, 2007; Holt, 2004). In this study, sensitisation practice (in Russian: *razjasnitenaja rabota*), which in Soviet times was used to change the opinion of an employee who behaved undesirably, is perceived by front-line managers as one of the important means of disseminating changes in environmental information to their team members, and ensuring meaningful participation in both the communities of practice of 'use of hazardous substance' and 'energy efficiency'. The research participants indicated that the content of such activities usually relates to new technological instructions, legal parameters, or modes associated with emissions in the chemical process, which are artefacts of the boundary object 'law'. The research participants use practices around the structural object 'law' to ensure that new changes are properly understood by the workers in their unit, as well as in their neighbouring departments. Front-line managers build a new structure around the legal information by holding either informal briefings, in-the-shop training, or a meeting (in Russian: '*planiorka*') to generate learning among and between communities of practice. They also sacrifice their own time for additional activities as front-line managers have the freedom to design the sensitisation practice. This approach serves as a good example of the re-purposing of a practice inherited from the Soviet Union to fit a new condition in the transition economy

The research participants explained that the concept of 'sensitisation practice' is known from Soviet times as part of ideological work to change the opinion of an employee who behaved undesirably, and is used now to disseminate changes in environmental information:

I believe that this is down to ideological work that we have done in the past. People who failed to follow the [chemical] procedure and safety regulation properly were asked to come on a 'carpet' [Author: In the Soviet past, this expression originally referred to a servant called to the master for reprimand] and a lecture [Author: In the Soviet past, a term 'lecture' is also used here in ironic way, i.e. a monolog rather than a dialog is conducted

between line manager and a worker.] about the necessity of 'right action' was held by an ideological worker. Nowadays, sensitisation practice for environmental matters is more informal than sensitisation practice for safety and security. If someone does not follow safety instructions, they will be punished immediately; here you are given a chance (smiles). If someone does not understand the importance of changes [in environmental matters], my role is to explain it to people by showing [them] how to do it or telling [them] several times'. (A-7)

Informing my own staff about changes in legislation plays a significant role in my work. I need to pass [information] to my team so that they execute it properly. After these activities [Author: official information days about new regulation], I use my own briefings to explain and sensitize staff about the consequences. Certainly, people have been already taught legal information but [...] after having another briefing in an informal atmosphere, they may ask questions and start to think how it might be relevant for them [...] so that they come to the right conclusions. (A-3)

Recently, we got a new piece of information about the limit for the landfill, so we should separate waste more thoroughly to reduce the amount sent to landfill [...] I always discuss new information with my team first because it makes no sense to start any instructions without them having understood the reason behind the change. It is important for me that they really understand and think about how we can implement it. (A-22)

The research participants noted the importance of further dissemination of environmental information to their team as part of their supervisory responsibilities, and a way to encourage their workers to think about ecology and consequences. Legal education is primarily associated with knowledge about new regulations, but it is also about the legal consequences of non-compliance (Sahlas & Chastenay, 1998). The extracts above provide evidence for a mediating role for the first-line managers at the chemical plants in this study. Because of the complexity of information, the front-line managers are required to do sensitisation practice aimed at keeping their team members environmentally conscious and knowledgeable enough to run production.

The sensitisation practice is normally done in an informal atmosphere, which generates a comfortable environment for asking questions and providing feedback (Figure 7.1.).



Figure 7.1: A first-line manager (left) provides sensitisation with the technical operator (right) during a shift

Figure 7.1. presents the work-based but informal atmosphere where a front-line manager provides explanations to a worker. The content of such activities usually relates to new technological instructions, legal parameters or modes associated with emissions in the chemical process which produces boundaries between members of community and non-members. Below, there is an example of an awareness-raising activity involving the line manager and the workers, related to the adjustment of the production as described by the first-line manager presented in the picture:

All our parameters are spelt out in the technological instructions: parameters, modes – all. If, for example, the norm for the technological regime is for the temperature to be at 10C, then everything above 10-15 degrees will cause an alarm or a lock. Well, basically, we have a lot of alarms and lockings all the time, and our workers – technicians – should watch that impact. If a parameter of gas emissions has been changed, we watch for a possibility; for example, if we can reduce the temperature from 80 degrees to 12, that could influence the final emissions. The process is complex, you know. (A-17)

As the quotation presents, the first-line manager (A-17) takes a key role, and engage in the process of translating complex information from senior managers to their team members. In these cases, first-line managers in state-owned enterprises, similar to those in market-based companies, use an informal atmosphere for the creation, transfer and retention of tacit knowledge associated with environmental information (Boiral, 2005). At the same time, the first-line manager receives immediate feedback about the environmental knowledge of the worker, which enables them to take corrective measures, if necessary. In this way, the boundary spanning work occurs around structural boundary object 'law' by re-purposing the existing Soviet practices to new purpose – generating discussion about environmental protection.

Other front-line managers use sensitising their team members and non-participants about new environmental information and procedures which they conduct after they have identified (learning) gaps in the understanding of their workers:

During the shift...there are many questions asked by the workers because they want to understand the reasons behind new [environmental protection] processes. If they do not understand the new processes, conflicts and misunderstandings may happen among team members as a result. Here, again it is my responsibility to solve the conflicts between workers by providing a reasonable argument. (A-18)

I think that we have more people who are not appropriately educated in terms of environmental protection. For example, if the box for recyclables has a name "glass" then only glass should be collected here. If the box is named "paper", then paper is allowed to be collected because we sell paper as a secondary resource. However, I see often that in this box we find plastic bottles. This means that people are not aware of the difference between paper and plastic. The people just throw things away and do not ask questions about how to do separation. What to do in this case? Yes, I explain the situation. But if people do not understand, I ask them to re-do the rubbish and separate properly once again. When I practiced this exercise for the first time, many were not happy with this. However, next

time nobody threw everything in the one place and not in the right cells. Then the contract ended, the cells were taken. (A-22).

It is interesting that the participant here attributes lack of engagement in 'green' practice, i.e. waste separation to lack of understanding of information and knowledge and use sensitising practice to explain the rationale behind the procedure. Here, front-line managers take the identity of an experts who behave in the desired 'lawful' way if only they have the right information or understanding. In their boundary work, front-line managers facilitate learning through demonstrating understanding that the peripheral participants lacking on basics information. They use their knowledge to correct the situation and increase level of participation of the people who are seen to be environmentally disengaged.

In addition to addressing the learning potential of the team members/workers, the research participants do boundary spanning activities with their neighbouring departments to engage them in closer collaboration for cleaner production in their surroundings. Here they were not simply prepared to adjust their own practices, but also to take action to challenge the unsustainable production patterns of other actors:

Our environmental protection area is regularly developed as we grow (I mean production), then it involves the implementation of environmental measures between departments and shifts. For example, we have recently introduced a new waste management system in which we need to share recycling bins between shifts. The bins are large and are full only after some period of time; but some shifts do not empty the waste if the bins are almost full. They just put their rubbish to the end without thinking that another shift will have to organise removal first, and so lose production time. My team has done it several times. Another shift has not even done it once. This is because the instruction does not say that you should empty the bin after your shift. But is it so difficult to understand? You should remember that your 'family' does not end with your team, but you need to establish a good relationship with your neighbours. I tried to talk about this joint area and sit down to find a solution. However, it took me a long time to convince my colleagues. They mainly say 'why does it bother you?' You can put the waste next to the bins. I personally find it not fair. It makes our

surroundings dirty. Why should I look at this? And in particular for my team, I care about them because they are able to go and talk to my colleagues. So, I pushed the peers so far until we established a process to empty the bins. (B-2)

What is interesting in this quote is the front-line manager's view that the joint area is as an extension of their 'family' if it comes to the point that someone 'makes the surroundings dirty'. He explained that many environmental issues require collaboration between departments, such as managing containers between workshops. By taking on the role of 'ecological citizen' the managers facilitate a closer collaboration for cleaner production in their surroundings, thus reducing the footprint of the production. In this case, the research participant was able to adjust existing practices and force his colleagues from other shifts to challenge the behaviour patterns of other actors. The extract indicates that, despite the fact he received discouraging words such as 'why does it bother you?', he used the concept of 'family' to convince other front-line managers who run other shifts to organise the waste separation differently. In this way, the managers were able to use personal qualities or skills to convince their colleagues to collaborate, and take on the role of guardians of their ordinary workers, who do not have such a voice in the situation.

Despite being enthusiastic about their role in facilitating learning using sensitisation practice in 'green' communities, the research participants experience a feeling of insecurity about their own knowledge that highlights again the stressful nature of the role of front-line managers within a hierarchy of large chemical plants, and affects the state of their emotions when engaging in sensitisation practice as boundary spanners:

Sometimes I consider myself a one-man show – I am the main organiser of the work and need to juggle between my people, the old production plant, and legal requirements, which is not easy to achieve. (A-10)

Sometimes it does not work and I cannot do anything about these technocratic activities because I cannot fight here like Don Quixote. You can tell them what you need, but at the end you are accountable for everything. Maybe it is my local problem. (B-1)

The workshop is built in such a way that we have a massive [amount of] technology and obligations toward all the buildings and facilities in the plant. In addition, our plant has old equipment which is difficult to repair or to change the parameters on. Therefore, I need to take time myself to understand how to integrate a new legal requirement. If I do not understand some environmental information, the environmental department is my first point of contact. But you can always rely on environmental managers, so you need to consult with technicians how to implement new change. It costs additional time. (A-15)

The research participants have spoken about stressful and time-consuming legal education activities which require additional time resources to gain additional clarification for themselves, and to solve conflicts between team members. Sources of stress are the perceived lack of time for additional facilitation boundary spanning activities as well as self-learning. Interpretation of quotations may relate to the fact that the front-line managers take the time to change and create positive culture for new environmental practices (Liebowitz, 2010).

7.1.2. 'Moral' encouragement practices

This section presents another type of practice which helps front-line managers to manage boundaries and engagement in 'green' communities at peripheries. In order to facilitate continuous conversation around shared environmental responsibilities between citizens and the government, front-line managers use 'moral encouragement' practice in order to recognise the effort of existing members, and reward newcomers for their willingness to engage.

The research participants explained that the '*moral encouragement*' activities include a range of measures which were used in the past as part of the ideological work at their plants, and which they now also use to encourage people to participate in greening:

'Moral encouragement' measures were mainly used by HR and the Ideological Work Department for good work because they do not deal with financial rewards. This is done by the salary department. But now we liaise with them for moral encouragement for good work in the area of environmental protection, of course...(A-11)

We do not have many options for motivating people for greening which does not involve financial rewards. I normally do [for example] the announcement of gratitude, the issuance of personal awards on the results of special achievements, a certificate of honour, entry in the book of honour, displaying the photograph on the honours board, and awarding honorary titles for exceptional work. (C-9)

Although we have used 'moral encouragement' for normal work, now we use it also for greening activities. For example, some proposed good ideas for reduction of water consumption. For many [people], a publication in [the company internal] journal ... is a good incentive for the soul (in Russian: 'dusha'). (B-6)

We tell a lot of stories about people who do greening activities in the company. The [internal] newspaper is used in the company to show the life of the company and many people read it. It also forms the overall life position, patriotism and faith in themselves and more importantly because some of our people write articles about themselves, how they decided to do these actions. It is also helps to form public opinion of environmental issues that help to show their significance by the dissemination of the stories. (A-4)

These examples address the conversations around the community of practice on 'reduction of hazardous substances' or 'greening and cleaning'. In this case, the front-line managers addressing the boundary different perceptions towards water consumption. The research participant indicates different types of incentives for special success for the company, which spans from a simple expression of gratitude, which may be publicly expressed in a small team, to a public display of a photograph on the honours board, and the award of honorary titles before larger audiences. Such reward items are called '*incentives for the soul*', which highlights the fact that these are not financial benefits, but expressions of moral encouragement and intrinsic motivation through visibility. Thus, when observing the grounds of plants, the researcher noted that the honour board was put in front of the outside wall of the main building of each of the three companies (Figure 7.2.).



Figure 7.2: Desk of awarded employees with Labour Glory Employees

The observation illustrates the perceived importance of work. A measure used to encourage competition during Soviet times is still valued in current times. The research participants from Case A and Case C showed the researcher very proudly who were their best people. Thus, artefacts of reward for successes in the organisation are used by the first-line managers in different ways, as described below. Furthermore, the extracts above also illustrate that the HR departments expect that this voluntary participation will be a source of inspiration for other colleagues. However, some employees feel that the current situation does not merit a sense of this involvement being done voluntarily.

The research participants described how the 'moral encouragement' practices motivate and inspire colleagues to participate in the environmental activities which are actively trying to increase awareness by addressing the people's 'soul' by bringing them together:

If people actually did everything with their own resources, they cleared the fields, removed all the trash, planted trees, and grass, why not encourage people morally, and inspire others, by these examples in our press? That is, I see, an individual and also a team moral development. (B-3)

Some of our team members receive the award of an honorary title, which is the highest mark for anybody in our company. It is also a sort of recognition for demonstrating personal responsibility and commitment to

work for the country. In my role, I assess if he or she can be nominated. I normally seek to recognise personal effort and commitment to work (C-4)

We have many practices from the past which are rather outdated. ...The reward needs to inspire other workers to get the same award. It is part of labour education for young people (A-8)

As the formal reward policy is part of Belarus's Soviet heritage, the research participants use special practices to commit their staff to environmental activities through 'non-financial' motivational efforts. They also show an understanding of the difficult financial situation. While the traditional view on patriotism, presented in the previous chapter, has equated the boundary object 'Rodina' with hard work, a duty and a right to contribute to the prosperity of the country even while knowing some of its political decisions are not coming from below, some other research participants view patriotism in the traditional Soviet understanding as 'outdated', as stated by (B-3) in the quote above. They consider the controlling approach as pressing, which seeks to discipline workers within the autocratic and highly bureaucratic system of their country, as stated by C-4 in the quote above. The research participants highlighted the reason for nomination for an award as an instrument to motivate and inspire colleagues to participate in the environmental activities, actively trying to educate, in particular, young people. The role of the front-line managers is to identify such workers and nominate an employee for specific incentives. Thus, the 'rewarding document' becomes a new artefact around the visionary boundary object 'Rodina'.

By using 'moral encouragement' practices, inherited from the Soviet Union, that were previously used for the general motivation of staff, in order to commit their employees to environmental activities, the research participants address financial challenges in a crisis. Some research participants mentioned:

There are a lot of cuts in personnel, so that we fear to be redundant. It is just easier not to propose and sit passively. Nobody will value your [environmental] actions because you are on the list to be made redundant. (A-17)

The research participants highlighted that a lot of people fear losing their jobs and are so grateful to still be employed that they hesitate to say anything until they feel they cannot cope with their job. Therefore, any additional effort and green

engagement which does not bring any material benefits is less valued. Consequently, front-line managers try to use moral encouragement practices to help their co-workers relate their interests to the broader common good. As a result, the research participants spoke about examples where they and their co-workers acted in the public interest, and connected today's environmental actions with the future of their country.

7.2. Maintaining the patriotic image of the environmentally responsible citizen

This section explores imagining practice aimed at maintaining the patriotic image of shared environmental responsibility. According to Wenger (1998), imagination is a mood of belonging that involves boundary work in which brokers see themselves in others, or locate themselves in a community, by extending their identity, which allows them to develop new trajectories of participation outside of the community. In this study, front-line managers use practices around the visionary boundary object 'Rodina' to make connections between a patriotic spirit and environmentally friendly production, including the reduced use of hazardous substances, energy efficiency, and environmental innovation. Here, front-line managers see themselves as educators or mentors. They develop and use practices such as big commemorative events and mentoring (in Russian: '*nastavnik proizvodstva*') around the visionary boundary object Rodina to try to focus the aspirations of the members of the four 'green' communities of practices on broad-ranging and environmental concerns which address their motherland and the planet. In this way, front-line managers aim to maintain the image of being a patriot as an environmentally responsible and knowledgeable professional who loves their Motherland, and to facilitate the learning and development of their co-workers' mental and emotional posture towards environmentally-friendly chemical production as a patriotic act. Similar to the engaging practices described in the previous section, the imaging practices in this study also originated in the Soviet Union, and were not initially meant to address environmental protection. However, front-line managers have re-purposed them now to be influences in environmental engagement and the education of their community's members, who are concerned about the environmental protection measures that are seen as bureaucratic or are associated with institutional pressure. In order to achieve this, front-line managers state they use two types of practice: organising and

participating in big commemorative events aimed at creating a sense of belonging for environmental issues as a shared issue; and mentoring and apprenticeship practice aiming to generate a sense of life for young people who do not see themselves as valued in society. Participants feel that both approaches help to facilitate collaboration and learning in cross-departmental and personal negotiations with other citizens (all generations) from their surroundings.

7.2.1. Participating in historical and commemorative events

This section explains how front-line managers use practices to encourage non-participants to participating in historical and commemorative events as a mean to facilitate learning for corporate greening. This is not a topic much explored in the existing business and sustainability literature. However, one previous case study from Japan shows managers participating in commemorative events which are used to recognise their and others' efforts as best 'corporate citizens' with an honorary citizenship (Lewin et al., 1995). In the present study, using the historical and commemorative events around the boundary object 'Rodina', front-line managers aim to maintain a patriotic image of duties and work for environmental responsibility to overcome the perception of many workers that environmental issues are a job for the government, not themselves. By linking environmental efforts to the remembrance of historical victories on Victory Day (9 May) or Independence Day (11 July) and to other important dates for the chemical industry, such as Chemist's Day (the last Sunday of May), as well as acknowledging environmental efforts through the Honorary Awards, front-line managers aim to connect the country's history with responsible work on environmental protection. They aim to highlight to workers that environmental issues remain a priority during the current economic crisis, and to encourage their team members to participate and to generate a feeling of belonging.

I think it is important that we pay respect to older people, veterans of wars and people who contribute to our society. It is our history. If you do not pay respect to people, you can hardly pay respect to the environment and the place where you live. (B-11)

We are constantly holding events dedicated to various important celebrations, for example, Independence Day [Author: 3 July]. The role of our team [is to] to organise, invite, report... also to inform. People should

know our history and heroes to form their own attitude toward [environmentally] responsible work (C-5)

In our country, Chemist's Day is named after the followers of Lomonosov and Mendeleev and it always has been celebrated noisily and cheerfully. This holiday is in my view a tribute to people who linked their destiny with one of the most complex and [ecologically] difficult and pollutant sectors such as chemical industry in our country is. (C-8)

Here, the research participants link historical events and being proud of their history and country with a deeper significance of work, including environmental responsibilities. The research participants describe the professional event of Chemist Day as an artefact that demonstrates the significance of the occupation 'chemist' as a 'destiny'. They use this sense of their profession as a destiny to give more meaning to people's work for environmentally-friendly chemical production. They call themselves 'followers of Lomonosov¹⁶ and Mendeleev¹⁷', who made major discoveries in chemistry, thus underlining the significance of their work for current and future generations. Consequently, the research participants perceive *The Chemist's Day* as a connector between generations, which is clearly displayed in the quotation saying that all generations are invited to celebrate this day, and they all have fun. By using emotional language such as 'fun', 'celebrate noisily and cheerfully', the research participants stress the accessibility for potential participants in the event, and may aim to reduce the pressure which employees may normally experience in connection with officially organised occasions.

Furthermore, the research participants view historical and professional events as a helpful means to acknowledge the devotion of people who work in hazardous production and who perform environmental duties with precision and reliability:

Rewarding is carried out on condition of long-term work in the relevant fields of activity, such as technical expertise. (B-4)

¹⁶ Lomonosov, Mikhail Vasilyevich (1711–1765) was a Russian polymath, scientist and writer, who made important contributions to literature, education, and science. Among his discoveries were the atmosphere of Venus and the Law of Mass Conservation in chemical reactions.

¹⁷ Mendeleev, Dmitri Ivanovich (1834–1907) was a Russian chemist and inventor. He formulated the Periodic Law, created a farsighted version of the periodic table of elements, and used it to correct the properties of some already discovered elements and also to predict the properties of eight elements yet to be discovered.

Some of our team members receive the awarding honorary title, which is the highest mark for anybody in our company. It is also a sort of recognition for demonstrating personal responsibility and commitment to work. In my role, I assess if he or she can be nominated. I normally seek to recognise personal effort and commitment to work (C-4)

You see like our grandfathers fought in the Great War II, I would say proudly that we contributed to the prosperity of our city and the whole country when we go the extra mile to improve the environmental performance of our country because the production itself is such that it damages the ecology. (A-26)

We get that every year – we try to minimise waste that is formed, something to process at the company. But we know this from the past. I remember at school [during Soviet times, we learned that] ...we need to protect the places we know and love for our children and grandchildren, like our grandfathers did ...if we develop these feelings, we can succeed with environmental protection much better. So, I use these events to show especially those who ignore environmental issues that it is important to be together to protect our homes (B-5)

The quotes above would suggest that the research participants believe that a good citizen is a person who can work hard not only for their own well-being, but also for the benefit of society and the motherland, like their parents did before them. Consequently, they use historical events to facilitate the personal attitude of their workers towards work for environmental protection as something important 'to protect the places we know and love for our children and grandchildren, like our grandfathers did'. By linking a sense of patriotic and professional pride to environmental protection activities, the participants aim to encourage more environmental activity from those workers who are currently peripheral participants in Wenger's (1998) terminology, i.e. not fully engaged in the green communities of practice. This echoes findings by Rees and Miazhevich (2009), who emphasised that the Belarusian national identity is characterised by patriotism. The concept of the 'people of Belarus', which depicts a patriotic person who is devoted to hard work and proud of living in Belarus (Rees & Miazhevich, 2009), is also visible in the study.

During the events, the research participants take on the role of an 'educator' to shape the character of their team members by nominating people who deserve it. For example,

You know that a chemical plant is a hazardous production...many do not live long...but nobody speaks about this. But they always remember when we meet during the Chemist's Day. You just work to build a good future without high polluting production because you remember these people. (A-13)

We are constantly holding events dedicated to various important celebrations, for example, Independence Day [3 July]. The role of our team [is to] to organise, invite, report... also to inform. People should know our history and heroes to form their own attitude toward responsible work (C-5)

The Chemist's Day is a professional celebration of workers in the chemical and petrochemical industry – and is celebrated annually on the last Sunday in May. It brings together employees who work currently in the chemical industry, students and teachers from higher education institutes in our city. Also, retired people who worked in our company previously are invited. So, people of all generations attend the event. This day is always lively and we all have fun. It is important to show appreciation to people who work hard in their professional duties. (A-12)

As the quotations suggest, by internalising the empathy and care towards the country as an important boundary object, the research participants invoke a greater emotional response toward environmental issues (Fineman, 2009). They feel that patriotism developed by historical elements helped them to set an example and 'succeed with environmental protection'.

The data presents that the learning processes around visionary boundary object 'Rodina' have been focused on generating emotional response to a need for more engagement in environmental aspects such as water management and the use of hazardous substances, which harm water resources (Benn & Martin, 2010). Thus, the research participants take on the identity of 'educator' to develop their team members' pride in their profession and motherland, as well as their green

commitment for more 'green' ways of working. Encouraging non-participants to participate in historical and commemorative events, front-line managers facilitating learning of peripheral participants of communities of practice by focusing their aspirations on environmental concerns as a responsibility for every citizen in the country.

7.2.2. Mentoring and apprenticeship

This section presents another practice that the front-line managers develop to address the boundary of reluctant young professionals towards greater collaboration in environmental matters and self-learning by developing mentoring and apprenticeships for environmental protection. Current literature highlights an important role of formal mentoring as a way in which mentees learn new perspectives and are inspired, challenged, and taught how to deal with the environmental challenges (Liebowitz, 2010) and encouraged to look towards career development (Jabbour & Santos, 2008). Some other literature highlights the role of environmental champions who help other less experienced workers to get more valuable insights about how to deal with environmental issues (Anderson & Bateman, 2000; Taylor et al., 2012; Schaefer & Harvey, 2002). This section presents a semi-formal way of mentoring and apprenticeship in the three Belarusian case companies, which is modified by informal interactions between experienced mentors and less experienced mentees. The section is also connected to the previous section as the best people who receive The Award for Labour Glory receive the role of mentor or teacher for apprentices (In Russian: '*nastavnik proizvodstava*'). The front-line managers who are mentors feel that they have an additional role in encouraging their mentees to engage with environmental protection as it is the future of the chemical industry. Using the notion of the visionary boundary object 'Rodina', front-line managers act as 'life teachers' who give the young employees hope and reasons why they should stay in their country, instead of emigrating. In this way, front-line managers maintain the patriotic image of environmental responsibility for the country of the future.

While the societal changes highlighted by the research participants indicated major problems involving young people, an existing traditional apprenticeship as a Soviet practice no longer seems like a satisfactory answer to the problem. In particular, the research participants from the Case A and Case C located in the low-wage east and east-south region of Belarus mentioned that many young

engineers move to Russia for better opportunities for work. Another issue highlighted the acute shortage of skilled workers which meets a much greater demand for environmental management for the company with a higher technological basis as well as tough environmental legislation. Therefore, the Soviet concept of mentoring and apprenticeship is perceived by the front-line managers as a good way to boost the morale of young workers:

The best of our team members receive the award for Labour Glory, which is the highest mark for everybody. The awarded people are seen as 'life teachers' (in Russian: 'nastavniki'). They show the young workers how to collaborate on environmental protect and also coach those who need help (A-15)

As a professional mentor, I think engaging in environmental protection is...for career development, why not? It is no secret that environmental protection is a complex area and there is plenty information to learn. Sometimes you need to push people to learn it. I tell my staff 'Learn more, because it is the future.' (C-7)

I have coached so many young people, I can see who, so to speak, want to work on [environmental information, and can. I promote those who want to learn...complex things (A-21)

The individual effort is developed using concepts inherited from Soviet times such as a '*nastivnik proizvodstava*' – the practice where an experienced coach is assigned to each young worker and helps trainees to consolidate theoretical knowledge directly at the place of production – is used to adjust organisation to the new circumstances. The concept of 'professional life teachers' (in Russian '*nastavniki*') is inherited from the Soviet Union, as is the Award for Labour Glory as a high-level acknowledgement of their work to celebrate heroes and valued contributions, including to environmental work. When viewing the grounds of plants, The Award for Labour Glory was found in front of all three companies (Figure 8.4).

Many research participants hold the title of 'professional life teachers' and use it as a good way to 'correct' the morale of workers. The use of 'professional life teachers' is the practice whereby an experienced mentor is assigned to each

young worker. The practice focuses on facilitating the learning of the trainees to consolidate theoretical knowledge directly at the place of production with the help of an experienced professional, like a front-line manager. Whereas the traditional apprenticeship model described earlier includes a combination of formal off-the-job learning delivered in specialist educational institutes, such as chemical technical schools, and processes involved in on-the-job learning coached by a 'professional teachers' the contemporary 'life teachers' are a combination of the informal and formal learning processes. This is important for the quality of the teaching of young employees involving greater collaboration on environmental matters and self-learning. The research participants use the contemporary apprenticeship concept of 'life teacher' to take a counselling role and go beyond just transferring knowledge, which often takes them beyond the boundaries of the workplace. They provide counselling and encourage the young to grow towards new career opportunities, such as environmental management, and stay in the country.

As a 'professional teacher, I think that environmental protection is not in the focus of the technical training. Therefore, I coached young people. I can see who, so to speak, wants to work on [environmental information], and who can. We have extra training on environmental management. I promote those who want to learn...complex things. It is no secret that environmental protection is a complex area and there is plenty information to learn. We need well-rounded 'experts' who need to understand complex chemical process, but also how to integrate environmental legal information. Sometimes you need to push people to learn it. I tell my staff: 'Learn more, because it is the future.' (A-7)

The company is highly modernised, we upgraded our operations in 2012. Therefore, we are short of high specialists of machine operators who are able to run the machines. Although we do not have much potential to reduce emissions, after downsizing and modernisation, we need to have someone who can organise other environmental matters such as waste separation or incineration. Therefore, I mentor a few young engineers who would like to broaden their responsibilities in the area of environmental protection. (B-12)

Yes, we have several programmes for young workers. We draw up these programmes together with the environmental department. They are experts at this, you see, and we need an expert with broad spectrum, including safety, environmental protection and quality management system. Therefore, we work very closely with these departments, where people are experts in the field, they know better, they take young engineers for a few weeks. This is very helpful as they not only get knowledge but know the processes of the integrated system. (C-9)

The quotations above indicate three approaches to apprenticeship taken in the three companies. For example, Case A – the largest company, with 16,000 employees – has its established system and processes into which environmental issues have been integrated formally, to meet the requirements of a contemporary apprenticeship, with a focus on environmental management. The research participants of Case A spoke about the development of well-rounded ‘experts’ who understand chemical processes, how the business works, and how the activities of the various departments fit together and can be developed. In contrast, Company B – from the company with 2,000 employees and highly modernised fibre production - has used the contemporary apprenticeship as an opportunity to address problematic recruitment for posts requiring specific qualifications, such as machine operators for modern technological process. The research participant from Case B highlighted how the aim of their apprenticeship programme is to create narrow experts in the role of machine operators who can contribute to the smooth execution of production. Environmental aspects, such as waste separation and incineration, receive rather marginal attention. In Case C – with the number of 4,100 employees and a very diverse product range, the aim of the apprenticeship was to develop ‘*experts with a broad spectrum*’. The activities included exchanging the young workers in the departments of environmental protection, quality and safety. The research participants of Case C described the efforts of providing personalised support to the young workers in collaboration with the environmental managers. The collaboration enables the middle- and first-line managers in Case C to access to appropriate experts and increase networking. By creating collaboration with other departments, the first-line managers push boundaries and challenge the existing traditional concept of apprenticeship.

In order to achieve positive 'learning outcomes' for environmental protection activities, the research participants extend their role as a 'traditional teacher who is just transferring the knowledge'. The front-line managers who are mentors provide counselling and encourage the young to grow towards environmental management, and stay in the country:

I always tell my girls [the majority of the ordinary workers of the synthetic fibre spinning and weaving factories are women] who have low qualifications [beginners] to be employed in another role, if it comes to redundancies. If I see a girl who is smart and young: 'Learn. Nobody knows where this knowledge might be useful...However, what you do now, will stay, so learn!' (B-11)

When I worked there, three or four persons had received higher education, and three of them were already in responsible [positions]. So, learning and getting higher qualifications is an incentive. I, myself, am still pushing some of the trainees to use the apprenticeship more widely, participate in meetings. Only through increasing the expertise you can get promoted. It gives strength to continue working here instead of looking for better opportunities in Russia, like some of the young people. Many return and are unemployed. (A-21)

Nobody will touch the collective areas. You need to teach the young people that everything belongs to our responsibility. We cannot say that for the current generation of the poor. The generation is always the one that we educate. And each new generation must be better than the last. However, sometimes this is not the case. Otherwise, there will be development forward and a higher level of payment. Right? (B-4)

The research participants in all three companies facilitate learning towards corporate greening by talking to mentees about the importance of further education in the area of environmental protection, and use the framework of their role to develop appropriate words to convince young people. For example, the words: 'nobody knows where this knowledge might be useful' and 'strength to continue working here' highlight the need to go further and study to avoid disappointment with the government because proper education does not bring much financial reward. Consequently, the mentors take on the role of an

'occupational' parent. Although all three case studies indicate different approaches to apprenticeship, the three examples indicate the relevance of the concept of 'life teacher' as an opportunity for the personal development of disappointed young employees. So, life teachers encourage young people and build a learning infrastructure that effectively leverages both formal and informal learning (Ellinger, & Cseh, 2007).

7.3. Aligning through fostering diverse networks

This section presents aligning practices with broader environmental goals through fostering diverse networks. Wenger describes alignment as 'socially organised action' that 'bridges time and space to form broader enterprises so that participants become connected through the coordination of their energies, actions, and practices' (Wenger, 1998, p. 179). Wenger views alignment as the members' ability to engage and imagine, which helps them to understand the practices and perspectives of participants from another community (Wenger, 1998). This requires communities of practice to achieve a certain level of maturity in which the boundary work of the brokers involves negotiating and creating structures that can be used across boundaries. Existing literature shows a well-documented set of aligning practices within organisations, such as: 'fragmented practice', which generates one potential benefit of sharing knowledge between communities of practice (Roberts, 2006, p. 625); the spanning of community boundaries through transferring knowledge via a common language, translating it via negotiation between communities, and transforming it via collaboration (Carlile, 2004); specific types of interactions, such as identification, coordination, reflection and transformation, that can occur when trying to stimulate learning between communities (Akkerman & Bakker, 2011); and extending the initial decision to structurally align, demonstrating an open culture for dynamic learning (Weller, 2017). In this study, front-line managers use practices around the structural boundary object 'law' and the market-related boundary object 'market', especially considering the environmental responsibility aspects of their products, to respond to external pressure, from government inspectors to local and international clients, to innovate and to sell, through building trust and relationships with these actors. These practices include consultations with inspectors, collaborative practice for environmental innovation in 'green' cross-community projects, and practices with a focus on negotiation access to

international clients. As discussed in the Chapter 7, in the time of slow transition from a planned to a market economy, managers of Belarussian chemical plants see the need to be more competitive and gain a reputation in local and international chemical markets, while still experiencing strong influence from the government due to the combination of a high rate of government-initiated investment in the strategically important industry in Belarus, and administrative control. Therefore, participants aim to align the organisational goals with respect to an environmentally and economically sustainable business with what they perceive to be the government's vision of effectively managing their organisations and environmental matters. Evolving existing practices of the communities to more collaborative ones, which involve the actors beyond the organisation, helps front-line managers to create social action through the coordination of their aligning practices that form a broader sense of belonging for more peripheral participation (Wenger, 1998). Three aligning practices are described below.

7.3.1. Coordinating practice with inspectors and city council

This section shows how front-line managers link their supervisory experience and formal responsibility for environmental protection to the professional knowledge of environmental managers and power engineers, who play the role of brokers between chemical plants and external actors such as inspectors of the Regional Committees and managers of the city council. The facilitation of learning for corporate greening occurs in the community of practice 'use of hazardous substances' by making explicit to new members the model of coordination between the division, environmental manager and external actors that underpins their practices.

As discussed in Chapter 6, the communities of practice 'use of hazardous substances' and 'energy efficiency' include external actors. However, as also discussed in Chapter 7, some of the actors, such as inspectors and city council employees, are perceived as 'punishing bodies' which have a limited understanding of the business and operation of the chemical plants. Enabling alignment between responsible business practices at all three plants requires the organisations to extend their structurally organised reporting from their environmental division to the Chief Engineer, to the Regional Committee, and to the city council, by establishing an informal consultation mechanism by which the legal information is clarified, and common ground can be established. The

quotations below explain the importance of such consultations in order to ensure that the organisation is not punished:

If the controlling organisation comes and records [emissions], and finds out that we have exceeded the limit of some substance, we pay penalties, and massive ones...if there is any discrepancy it is better to call the Regional Committee for consultation. It's quite new. We have good relationship with the Committee because it is better to pre-inform them than explain why you have not taken any measures (B-13)

We all know that it is impossible to achieve the exact number of substances for all stations. It is sometimes very difficult, but when a new amendment comes, we tend to attend information meetings organised by the Regional Committee. Some inspectors are approachable and explain the background of the amendments, some others just go through the slides. So, I try to build a conversation with an approachable inspector. Sometimes it works, sometimes it does not (smiles). (C-1)

We normally call a hotline of our local Regional Committee if we have any questions, or we use our regular meeting, where we can sometimes agree their inspection schedule. It helps a lot to plan our work (A-11)

As the quotation above suggests, the research participants use different means to contact local Regional Committees (each regional centre has their subunit of the Ministry of Environmental Protection). Whereas Case B has developed a personal contact with the inspectors of the local Regional Committee, the environmental managers of Case A and Case B assess the connection more formally, for example using a hotline or attending a formal meeting. Still, they felt that building a network around the monitoring phase of the plants' environmental performance helps in their boundary work in environmental protection through establishing informal relationships with the Regional Committees of the Ministry for Environmental Protection, and prevents punishment from government bodies. As the government exercises tight control over a whole chain of environmental laws, the research participants felt that consultation about the new relevant regulatory documents, instructions, and directives issued by the state authorities, and the consequences of non-compliance monitored by the Regional Committees' inspectors, are important for their work; they enable the managers

to 'micro-manage' compliance with the environmental laws in their organisations.

Similar practices are applied to establish a network with the city council. The research participants stated that the more the changes in environmental standards, the more the penalties which can be collected by the city council for non-compliance with environmental legislation. The council takes care of sewerage and water consumption, as well as flora and fauna, of the chemical plants because two of them (Case A and Case B) are located in residential areas. For example:

The city council is our important partner because our production is in a residential area. If we change anything in our operations, and we know it affects the city, we need to consult beforehand. We are a city-forming company, and you know, people like that understand: what we are going to implement, what will be improved, and how it will affect our natural environment and rivers. Before these changes – better we consult the city council before we get penalties. (A-13)

If there are any violations or an accident related to the emissions around our plant, the city council will know first because someone from our plant will contact them. Why make our lives difficult? Better to call and inform what will be changed. Until now, we only have positive experience. For example, we have changed the design of part of the plant. After I contacted them to ask if they have any objections, they even sent us a garden designer. I think he was just looking for some new projects (smiles) (B-4).

As the examples above highlight, the chemical plants are city-forming organisations which generate working places and contribute to the economic development of the city. They felt that consultation or informing the city council was important because the council could punish the organisations for non-compliance. Another interpretation of quotations may relate to the fact that the front-line managers act as mediators between planned environmental activities and improvements and the government actors, exercising a form of 'accidental' politics, opening a space for members of the communities outside the chemical plants, and enabling the workers of the city council to reduce the boundaries between the residents of the residential areas and the chemical plants. A further observation is that, although the Belarussian managers use additional efforts to

consult with the city council, which is not prescribed by law, the structural boundary object allows them to build a new network of community of practice which is directly related to the issue of concern.

Given each chemical plant has its own structure and processes, the boundary work around the structural boundary object 'law' occurs differently in each plant. According to the research participants in Case A, the boundary work with external actors occurs within ongoing administrative and technical measures on improvement. However, due to financial constraints, it is impossible to implement. Therefore, the Case A participants highlighted that it is hard to motivate themselves and how on some days they felt more motivated than others:

With all external organisations you need to find a common language. We all work on one thing: the end result. Regardless of whether you work for the department of environmental protection, or the Regional Committee, it bears its own responsibilities... If something environmental issues occur, for example, that we would either have increased emissions, waste to the landfill, or what. We immediately phoning to achieve transparency. (A-17)

Well, we have more familial relationship. People liked each other ... I do not know such an atmosphere, perhaps because it is less than the smaller team, perhaps, the once close all these ... (A7)

The research participants report that extending the network is creating common understanding and meaning. However, as the research participants acknowledge, the challenge of implementing a holistic approach to environmental responsibility within changing the learning landscape prompted front-line managers to contact inspectors for help. Within the framework of administrative and technical measures, these practices include communicating not only with external actors but also increasing the coordination of measures with other departments to find a solution through 'structural' functions, such as the Environmental Management Department, the Power Engineering Department or the Department for Innovation. Case A participants also reported that the deterioration in the financial situation is one of the most difficult aspects of engagement in environmental protection and, as a result, they need to be more realistic with the choices which they make. Some other participants felt the economic situation of the region and low wages had a huge negative impact on

their decisions on environmental projects. The new coordination practice builds an infrastructure for communication between the state actors, such as the Ministry of Environmental Protection and inspectors from the Regional Committees, and need to maintain and change the boundary between their organisations and state actors to comply with national-level legislative.

Whereas in Case A, the facilitation processes of networking are rather formal, based on a lot of meetings and discussions, people in Case B decide on a more ad-hoc approach, using informal connections, as highlighted by the participants in Case B.

I can tell you that there are people that think 'if I help someone today, he/she will help me tomorrow'. This is the motto of many people here. Environmental protection is an area where not many people would help. Therefore, many just help because they know you will be helped tomorrow in return. (B-7)

The research participant in Case B reflects on the informal connection between the willingness of a person to help, which indicates a willingness to cooperate in the future, and build a network. For example, one participant mentioned how he manages to recycle the computers, after seeking help from the city council, illustrated by the quote below:

After we separated computer waste, we did not know where to take away (or bring away) plastic materials remaining from the computers. I found out from the environmental department that, normally, the company has a form to fill in to bring the recycled waste to a certified company. There was a special procedure how the material should be separated, transported and handled by the certified company. However, I felt that all these steps took a lot of time and organisation, which could be allocated for other things. Therefore, I decided to avoid the formal process and rather to call the city council for help from whoever was responsible for recyclables. The employee of the city council suggested picking up the recyclables when he had time and bringing the waste to the certified company on his way. (B-4)

The example from Case B suggests that the facilitation of learning is achieved

not by abandoning the formal side of environmental legislation for the informal, but rather by taking into account both formal and informal elements. Making things happen in environmental protection, e.g. the coordination of recyclables, originates both with formal processes and a policy at the city council, and with issues which arise informally from the 'green' community of practice. City council workers respond to requests and take account of both of these: they then continue to use both formal and informal routes to get things done and exert influence. Both actors use formal meetings, sector representation, and local authority systems, alongside informal backstage working relationships, to make things happen and make a difference to the residential areas.

Although the research participants assess the relationship with the city council and Regional Committee in Case C as difficult, the environmental manager sees potential for greater learning in this area by addressing the main boundary – pressure from inspectors and high levels of bureaucracy:

'When we meet Regional Committee's inspectors, we have a rather formal relationship. However, recently I noticed new positive signs - both sides know that we need to achieve two main objectives; first, fulfil the annual plan for emissions, recyclables and all other parameters, and secondly - less bureaucracy....no one would like to sit long hours to write reports...the inspectors know that.' (C-1)

For the environmental manager in Case A, experiencing 'positive signs' from 'punishing bodies' was a new stage of learning, and it took him a few months of engagement with the regional committee for the connection between the company's efficient manufacturing and its monitoring practices by the inspectors to be understood and integrated. However, once that happened, the environmental manager and the inspectors leveraged efficiency language and practices more purposefully in their work. Environmental managers moved from having a central focus on punishment and risk management to looking at the needs of the inspectors, i.e. avoiding bureaucracy. In this example, the inspectors also wanted to eliminate unnecessary or redundant internal requirements to make their practices as efficient as possible, which addresses the obvious boundary between these two actors. This may show that the trust between the authorities and the company can be developed through the coordination of tasks

and objectives. It also generates a common 'understanding' of a need to help each other against any inspection which might lead to network building within the organisation.

7.3.2. Collaborating environmental innovations

This section describes a boundary processes in the community of practice 'environmental innovation' that facilitates mutual learning between front-line managers of different departments, the Environmental Management Department, the Bureau for Innovation, senior management and external actors - universities. As discussed in Chapter 6, the community on 'environmental innovation' includes the people who care about integrating environmental issues in product and process innovation. However, (as showed in Chapter 7) the community experiences misunderstandings between actors who feel that plants invest enough in ecology, and an additional expertise is necessary to convey a commercial necessity to include environmental aspects in technical projects which prevent the community from growing. Therefore, using the market-related boundary object 'market', front-line managers organise collaborative practices between different departments, senior management and universities to enable the community members to generate market-related evidence for environmental impact, and develop relations between departments with different knowledge along with external institutions. In this way, collaborative practices generate specific in-house knowledge which focuses on the environmental impact that the community develops, shares and maintains, through a website and an online library. The facilitation of learning occurs through discussions and meetings on how to balance environmental responsibility and market the position of their company, which is a new skill for front-line managers who have received their formal education as chemical engineers during the Soviet time. They acquire the language they might use to design the process for price agreement, or customer specification for an environmentally-friendly product, or to build a convincing argument for the introduction of necessary equipment for reduction of hazardous waste.

The research participants mentioned that since environmental aspects in technical projects are difficult to 'sell', it requires them to collaborate with other actors:

'If you have any idea related to improvement in the area of environmental protection, before I submit my proposal, I do my own research and think carefully whom you can contact among those colleagues who have done similar measurements because environmental impact is difficult to calculate and prove. (A-3)

You need to link all criteria to your proposal. For example, just recently, I had an idea to propose to improve a process in the production of chemical fibres by exchanging some ingredients (I took new information from the internet). Although we had a plan, it was impossible to propose. I felt that I would be looked down upon by colleagues, as if I was a 'stupid man' who had decided to show off my knowledge. I decided to contact the environmental manager to check if the idea made sense. (A-23)

Knowledge about environment is not standing alone, it constantly develops. When we began to build our incineration, we contacted many specialists in different universities in Belarus and in Russia to check how the project would impact the environment. In the end, we started to collaborate with the university and the Institute of Knowledge in Minsk, who helped us to build environmentally friendly incineration and reduce consumption of energy (B-5)

The research participants above recognise the importance of external connections and intra-developmental relations within the chemical plants. Whereas A-3 felt that competition is an important part of the innovation process because it allows the learning process to 'speed up', research participant A-23, viewed the collaboration under such conditions as stressful. Therefore, the additional elements of pressure which may enhance the use of a learning object, such as competition, may create resistance to learning. As a result, some research participants felt that they could not give any suggestions because they may say something incorrect or out-dated. Among relations with external stakeholders, active cultivation of diverse networks helped generate new ideas, questions and perspectives. In particular, the fostering of personal encounters and relationships among regular workers helped to generate new practices, raise useful questions, and motivate employees' commitment.

The research participants describe how learning is facilitated across knowledge boundaries, which highlights the differences between the boundary processes in all three plants:

We do have collaborative activities, but just two proposals have been submitted this year. It is not a lot, but the environment is taken seriously by the leadership of the enterprise. So, every proposal is welcome that will achieve the environmental aspect particularly those focused on production and cost benefits. (A-6)

Thus, I would say that my proposal was accepted by the 'technical department' who took my proposal forward because everybody wins; the business wins because of cost reduction and the environmental impact will be reduced. So, it is easier to go directly to the expert and discuss the proposal than go through the formal process (B-10)

I think that the proposals are good but they are left with the expert. In our production workshop it is different. The problem at the facility that I saw during the production was associated with production of waste, which stops the machine. My team members lose their time to clean the machine from the waste in order to start their work again. In order to eliminate the issue and loss of time, I discussed with them to re-use some raw materials. Thus, they initiated a small study and found that with the new system the pressure in the machine does not grow rapidly and captures polymeric essences through filtration. As a result, they experience fewer stops, which means less waste. Thus, our team have developed the use of a new raw material for the polymer and a work programme which was later approved by the chief engineer. In this way, they improved card processing and reduced the consumption of resources by four kilograms of waste per shift. Thus, the proposal at the end was prepared to be discussed at the higher level and we were able to take a decision about changing a process which is seemingly a technical competence. (C-10)

From the interviews it is clear that whereas the rationalisation process is very formalised in Case A, and is designed in a way that the collaborative activities between departments and the material item 'rationalisation proposal' (a document which gathers all the relevant information) ensure learning in the

organisation about the integration of green aspects in technical specifications, in the other two plants, where the technological process was modernised in 2012, the innovation planning process uses formal criteria which are less visible to research participants. The research participants from Case B and C explain how they see that developed technological bases reduce the number of proposals using a formal rationalisation process, but they facilitate learning regarding greening for technical improvement in collaboration with the 'technical department' directly, using an informal 'rationalisation proposal' as the learning object. The rationalisation process in Cases B and C was inherited from the Soviet Union, but it is used less for integration of environmental aspects, like it is in Case A. Rather, the research participants in Cases B and C consider issues in production as priorities, which helps proposals move forward faster or saves time. Thus, a problem and formulation of an informal 'rationalisation proposal' within the team generates collaboration to keep the production line intact. Both research participants above mentioned that the top management of their enterprises are interested in win-win proposals. Therefore, based on the consultation with the 'technical department', research participant B-10 could create a proposal to improve the tendering procedure. Similarly, the research participant C-10 indicated that an informal 'proposal' was an agency to start testing, and then get an approval from the top management to change the technological process. In both cases, the research participants were involved in debating and discussion with their peers, but also in the 'creation' of win-win argumentation for top management, generating an understanding through which the activity can bring value in both aspects – cost reduction and an environmental impact. In this case, both front-line managers recognise the importance of operational issues facing their firm, and see a need to minimise such impacts (Banerjee, 2001) through cost savings by increasing efficiency, reducing compliance costs, and minimising future liabilities (Porter and van der Linde 1995; Reinhardt 1999). Although the research participants are aware of the environmental issues that their plants are facing, the environmental issues were perceived in the light of cost reductions. Consequently, through the facilitation of collaboration, the research participants opened up possibilities of questioning current 'dirty' operations, which are linked to assessing and discussing ideas related to energy efficiency, and responding to the ideas and new technical innovations and inventions, all acting as a kind of material/pragmatic language to communicate with top managers to build

argumentation and follow the standardised process. In this way they generate learning towards 'green' practices associated with technical innovation proposals reducing emission, waste and energy use in their organisations, using collaborative informal activities.

In sum, the research participants felt that the use of collaborative practices have been dependent upon the government notion that science should bring commercial benefit, underpinning the relationships between the members of the community of practice related to the benefits of reducing water consumption and energy use, which may modify the price competitiveness of chemical products on the market. Thus, based on the centrally planned type of activities inherited from the Soviet Union, the collaboration practices facilitated learning through open discussion and, after discussion, a consolidated understanding about the value and relevance of practices that reduce environmental impact through resource consumption. In this way, the research participants facilitated learning about 'green' practices associated with innovation and large investment projects supporting action on emission reduction, waste and energy use in their organisations, then substituting the large projects with smaller ones which require less financial support from the government.

7.3.3. Negotiating practices with international clients

This section focuses on negotiating practices which coordinate alignment of the community of practice leading to broader and more clear structures between members and non-members (Wenger, 1998). In this study, two chemical plants - Case B and Case C - introduce different international standards to prove that the companies use less dangerous ingredients in their products, which creates negotiation practices in order to gain access to export markets. The research participants from Case A, however, indicated that the international standards are not the focus of their operations because their customers, who are predominantly from the former Soviet Union, do not require such evidence. However, the research participants from Cases B and C consider the international environmental certificates as a practical roadmap to consolidation of their understanding of the standards for the exclusion of environmentally harmful technologies, and to the creation of a common language shared with their international clients during negotiation meetings to fulfil EU policies regarding

chemical product ingredients (the REACH regulation¹⁸). In contrast, the research participants from Case A justify the absence of international certificates as an additional bureaucratic measure which, when introduced, could distract from their production process.

Below, the research participants from Case B and C explain why international standards as a learning object are important for their organisational learning, after their enterprises have acquired the state environmental certificate:

The requirements of our clients have changed. Earlier, we focused on national clients. It was sufficient to have a national STB ISO certificate. Now, we export to European countries, such as Germany, Italy, and Poland. Currently the share of international clients is growing. Therefore, we ensure that we meet the international standards in addition to the national to secure contracts and get more Western clients. (B-7)

We must react to the demands of our buyers. Our main buyers are European firms who are aware of raw materials that are used for chemical products because of new EU regulations (Author: REACH regulations). For example, basic inorganic chemicals were used in relatively large amounts in our products, but since we have enquired about international standards, these are not permitted in Western chemical products. Therefore, the international ISO 9000 standard helps to 'detect' and replace additional toxic chemicals for high-quality nonwoven fabric which maybe are not part of the national STB ISO/IEC standard. (C-11)

Some of our fabric textiles that are exported to Germany require Oeko-Tex® Standard 100. Because we do not want to lose the clients, we adhere to the standards. Also, the standards enhance the image of the company. (C-3)

The research participants from Case B and Case C specified that the pressure of contracts from European markets such as Germany, Italy and other countries

¹⁸ REACH (EC 1907/2006) aims to improve the protection of human health and the environment through better and earlier identification of the intrinsic properties of chemical substances. This is done by the four processes of REACH, namely the registration, evaluation, authorisation and restriction of chemicals. REACH also aims to enhance innovation and competitiveness of the EU chemical industry.

provide proof that the companies fulfil the REACH regulations and force the organisations to adhere to international quality standards ISO 90001 and ISO 14001. Research participants B-7 and C-11, both middle managers, acknowledged that changes in clients' expectations in the Russian and European markets and declining national markets are quickly raising the bar for the chemical industry's B2B practices in Belarus. Consequently, introducing different international standards is necessary to provide proof to Western companies that the plants use less dangerous ingredients and reflect how the international clients are addressing changes in consumer demand for 'ethical' products (Freidberg, 2004) and EU policies regarding chemical product ingredients, such as the REACH regulations (Dalhammar, 2016). In addition to international ISO certificates, C-3, a first-line manager, explained that company C adopted a German *Oeko-Tex® Standard 100*, which is an independent certification system for textile products from all stages of production (fibres, yarns, fabrics, and ready-to-use end products, including accessories) along the textile value chain¹⁹. According to the participants' view, the ability of the company to demonstrate environmental responsibility credentials was seen as essential not just for the ongoing legitimacy of the firm, regarding its customers, but also to gain access to and secure contracts from customers located in developed economies where such things are viewed as standard. Thus, the work in this mode helps the front-line managers, through agreements and disagreements across boundaries, to coordinate their activities to fit within the broader structures. This observation reveals a new tendency in the literature, which mainly highlights that firms in countries in transition use the ISO 14001 certification for overseas markets (Crotty, 2016). This study demonstrates that Belarusian chemical plants use other Eco standards to facilitate learning about 'green' practices associated with using less toxic chemicals in their products and eco redesign (Dalhammar, 2016).

The facilitating process occurs using 'international certificates' as an explanatory roadmap that consolidates understanding of the standards amongst supply chains of both plants – Case B and C - as highlighted by the research participants below:

¹⁹ The test criteria of Oeko-Tex Standard 1000 include, among others: exclusion of environmentally harmful technologies, chemicals and auxiliary materials (e.g., ban of chlorine bleach), compliance with guide values for waste water and exhaust air treatment, economical use of energy resources, avoidance of noise and dust pollution.

The international standard ISO 9001-2009 enhanced our understanding of purchasing raw materials. We use it as road mapping in our work. For example, we use the contract from an oil refinery when buying important direct materials. The quality of oil in Belarus is such that it is different than oil from Russia. Thus, we have renegotiated supply agreements that suggest a higher quality of oil – the raw material for our products – which could enable us to fulfil the international standards. (B-4)

European countries are very cautious about the substances we use and how the processes of our production are organised. Environmental compliance, in accordance with the standards ISO 14001-2005 and Oeko-Tex® Standard 100, is not the only way to reduce the environmental impact of our organisation but, also, we use communication tools that allow us all – production managers, purchasing managers, sales managers, as well as the representatives of the client – to speak the same language when reacting to products or processes. For example, all the time when meeting the clients, they ask if we have Oeko-Tex®. If so, they use the characteristics of their product, process, and performance requirements which are used in the standard. Without knowing the standard, it would be difficult for us to agree. (C-8)

The comments above make it clear that the middle and first-line managers use international standards as explanatory learning objects, which afford possibilities for actions associated with the successful running of the business. Thus, a research participant from Case B acknowledged the use of international standards as a 'road-map' for the implementation of 'green' practices in operations on the procurement side. In contrast, a research participant in Case C pointed out that international standards are used as 'a communication tool' to bring all users onto the same page. Although these benefits have a performative effect, meaning 'fulfilment of international standards', the reason for using the integrational standards is different in each context. Whereas the research participant from Case B focused on the international environmental standard ISO 14001 to legitimate their actions with the supplier of raw-materials when negotiating the final agreement, research participant C-8 highlighted that knowledge of international standards creates a better understanding of the client's expectations. Thus, certificate Oeko-Tex® Standard 100, and other

international environmental standards, precipitate learning within both chemical plants – Case B and Case C – in the form of a new awareness about the benefits of reducing toxic raw materials and production optimisation, by acting as a practical roadmap to implement environmental practices and create a common language with international clients during negotiation meetings, and fulfil the EU policies regarding chemical product ingredients.

However, the research participants from Case A suggested that they did not obtain the international quality standard certifications ISO 9000, ISO 14001 because their customers are predominantly from the former Soviet Union, so they focused just on Belarusian certificates:

We have adopted the national ISO 9000 system only because it works well. For our clients in Russia, Ukraine, and Kazakhstan, this is the most important thing. They are not so worried about international standards. (A-24)

Maybe we will acquire international certificates, but it is additional time and bureaucracy and additional unnecessary checks [In Russian: 'proverka'], which we cannot afford. We have other things to do. (A-5)

This example indicates that the use of negotiation activities that go 'beyond compliance' activities is very limited in post-Soviet countries (Crotty J. , 2016). The reason for the slow development may be a different configuration of learning objects. In Case A, the learning object '*international environmental standards*' is rather associated with additional bureaucratic paperwork, which the company cannot afford. The need to deliver chemical products to their clients in Russia, Ukraine, and Kazakhstan, who have less preference for these certificates, is crucial, and applying for additional certificates to go beyond compliance is not in Case A's interest. Thus, research participant A-5 sees the potential for action to attain international standards, but it is not necessary because their customers, predominantly from the former Soviet Union, do not require it. Research participant A-5 suggested that the international certificate is not their learning artefact because it is not demanded by their customers. Thus, the learning object '*international environmental standard*' is configured differently in Case A, and the managers' understanding of an environmentally friendly operation is substituted by another similar learning artefact – the national ISO certificate. In this way,

front-line managers take the role of the broker to negotiate the process of access to international clients.

7.4. Summary of the chapter

The findings of this chapter present a set of practices which front-line managers have developed around boundary objects to maintain existing, and 'recruit' new, members within and across different 'green' communities of practice. The chapter shows how the managerial agency and their practices provide awareness-raising, incentives, create patriotic feelings, coordinate, collaborate and negotiate to create the potential to engage in relationships with existing and new members of communities. The evidence of this section shows the importance of engaging, imaging and aligning practices to facilitate learning in the area of environmental protection by front-line managers that bring the members of communities together. These include: the practice for working with other departments, their teams and HR departments (engagement); for constructing an image of themselves as educators and making environmental education part of the country's mission (imagining); and for ensuring that 'green' activities are sufficiently aligned with the both the organisation's and the government view of shared responsibility for environmental protection (alignment). The main argument from the data analysis is that, rather than sustaining or imagining particular community boundaries enabling situated learning (Wenger, 2000), front-line managers see opportunities for further growth of the communities in generating new practices by re-purposing former Soviet practices or adapting new bottom-up practices.

Using the practices helps the front-line managers to maintain communities of practice in the ambiguous nature of situated learning in Belarus, and to facilitate 'conversations' around environmental responsibility. The facilitation practices are used to mitigate the boundaries between the citizens of their home country working for the state-owned organisations on the one hand, and the state expecting active participation of their citizens in the positive development of the country in return for social care and pensions from the state, on the other. This chapter provides evidence that new facilitating practice helps the front-line managers to create conversations in the communities around everyday 'green' practices, and attract new members to 'green' communities. The front-line managers do this by finding common ground in interests and needs for shared

interests around 'green' business practices, approaching other members to address their lack of environmental understanding, and recognising and rewarding the competence of others. Furthermore, this chapter provides evidence that front-line managers negotiate access to new international clients to continue conversations and actions around environmental innovation. Thus, these front-line managers act as boundary spanning agents and facilitate learning for corporate greening by transforming practices inherited from the Soviet Union around boundary objects, and developing new practices to address challenges across the knowledge boundaries (different values, agendas and perspectives) between peripheral members and experts. In this way, new facilitation practices used by front-line managers around boundary objects are more meaningful and compatible with the contemporary requirements for environmental protection in the post-Soviet learning environment.

CHAPTER 8: CONCLUDING DISCUSSION AND IMPLICATIONS

This chapter concludes the current study. It summarises the main arguments presented in the three findings chapters, and how these have addressed the research question. The theoretical and practical contributions of the thesis are discussed next, before ending with implications for further research, and a discussion of the limitations of the research.

This study set out to address the research question '*How do front-line managers in Belarus facilitate learning for corporate greening in their organisations?*' In this regard, one of its objectives has been to explore the learning environment of communities of practice in which front-line managers in the Belarussian chemical industry operate, and to identify boundaries across values, agendas and perspective on environmental practices which generate trade-offs and tension in organisations. Previously such boundaries have often been investigated in an a-historical fashion, without involving socio-historical contexts (Pyrko et al., 2010; Roberts, 2006), whereas learning represents anchoring history in social practice (Wenger, 2010). Therefore, a second objective has been set: to explore learning across boundaries within the socio-historical setting, using boundary objects. The third objective has been to examine the practices that front-line managers in Belarus use to manage the boundaries and facilitate learning for corporate greening. The findings show that the front-line managers in the three case-study companies aim to facilitate mutual relationships among participants and create the feeling of belonging of the 'green' communities in their traditionally hierarchical and governmental-controlled organisations. The boundary-spanning activities are generated by re-purposing former Soviet practices or adopting new practices which were previously not meant to have an environmental protection focus. Through applying facilitation practices for engagement, imagining and aligning (Wenger, 2000), front-line managers help new members to identify with the 'green' communities, and transform their communities towards 'greener' ways of working.

The chapter is structured as follows. Section 8.1. of this chapter provides a general overview of the main findings and a discussion of this thesis, outlining the objectives and presenting answers to the research questions set out in chapter one. Section 8.2. discusses the theoretical and practical contributions of the study. Section 8.3. acknowledges the limitations encountered in executing this study, while section 8.4. suggests areas for and the direction of future research. Finally, section 8.5. provides a concluding summary of this chapter.

8.1. Main findings and discussion

This thesis presents a qualitative study with the findings, which are based mainly on inductive analysis of interview data, observations of meetings, and photographs. The main research question was:

‘How do front-line managers in Belarus facilitate learning for corporate greening in their organisations?’

In addition, the analysis has been guided by three sub-questions:

1. What are green communities of practice in the three case study companies and how does learning occur in them?
2. How does learning for corporate greening take place around the boundary objects in the three companies?
3. What are the practices through which front-line managers seek to facilitate learning for corporate greening?

Informed by Chapters 5, 6 and 7, the key findings are summarised as follows.

8.1.1. Green communities of practice

The first sub-question concerns the green communities of practice of which participants spoke and in which they saw learning for corporate greening taking place. Unlike some literature that does not see a focus on communities of practice fitting easily within traditional hierarchical organisations (Wenger, 2010), the findings of this study suggest that participants did perceive four ‘green’ communities within their otherwise largely hierarchical organisations and which were maintained through practices inherited from Soviet times. The societal and

historical context of post-Soviet Belarus makes the findings from this research valuable as it reveals aspects of situated learning that are not as easily visible in a Western context.

The Belarussian chemical industry faces environmental issues typical for chemical plants, such as the use of hazardous products, the use of large amounts of water, and the production of contaminated wastewater, hazardous wastes and air pollution, which have been causing health issues for local communities, threatening the existence of local flora and fauna, and damaging the productivity of the land. Furthermore, the chemical industry in Belarus has been subjected to several changes in environmental protection regulation since the collapse of the Soviet Union in 1991. The research participants reported on transformed relationships between institutions and businesses, businesses and their customers, and the society and the environment. The biggest change was a reduction in the number of chemical plants in Belarus (involving massive downsizing of personnel), accompanied by increased control of environmental limits by government organisations, such as Belneftkhim and the Ministry of Environmental Protection. Consequently, a limited number of 'high cost' personnel, such as engineering staff, have taken over wider supervisory tasks, as well as the responsibility (as commissioners) of safeguarding the environment, which is a new domain for the chemical plants, along with front-line managers. Furthermore, the chemical plants have been facing considerable pressure from the main stakeholders, such as regulatory authorities, but also from the local and international customers and residents of the area where the plants are located, to reduce their pollution load (Section 6.3). In response, chemical plants have started to take measures to reduce their environmental footprints, and introduce environmental protection activities (Section 6.1).

As noted in Chapter 6, in order to better understand how learning for corporate greening occurs in three Belarussian plants, Lave and Wenger's (Lave & Wenger 1991, Wenger, 1998) theory of community of practice, and Wenger's (1998) five concepts related to learning in communities of practice (meaning, community, practice, identity and boundaries) have been used to analysis the data for this thesis.

Participants identified four 'green' communities of practice ('use of hazardous substances', 'energy efficiency', 'environmental innovation' and 'greening and cleaning'). The '*use of hazardous substances*' '*energy efficiency*' communities of practice are described as engaging in activities that seem similar to the environmental protection activities of chemical businesses in a Western context (Delmas & Blass, 2010; Hoffman, 1999; Schot, 1992), and in in developing countries (Roy & Khastagir, 2016) and transition economies (Dixon et al., 2007). It is important to note that these two communities were described as being strongly dominated by experts such as environmental managers and 'energetiki' (specialists from department of energy). These experts were perceived as an important source of environmental information, as well as a conduit for communication between front-line managers and other members of the 'green' communities'. They were also seen to have different agendas (whereas front-line managers focused on production, the expert departments paid particular attention to compliance with environmental legislation) which has played an important role in generating trade-offs and tensions between the different actors.

The two '*environmental innovation*', and '*greening and cleaning*' communities were described as having a different relationship to environmental issues, which is less obvious in existing literature on greening, and which suggests a considerable socio-historical influence on emerging 'green' communities of practice. Both communities were established during the Soviet era, and have become a part of the learning environment for members who require skills for integrating environmental issues into work practices, despite the fact that the original alignment goals for the communities were different. The environmental activities within the '*environmental innovation*', and '*greening and cleaning*' communities are seen to have been influenced by the socio-historical influences of both the Soviet Union and the transition period of Belarus. This echoes findings from some other studies on corporate greening in the Russian Federation, which found that firms that pre-date the collapse of the Soviet Union are likely to exhibit characteristics, or the cultural legacy, of central planning (Crotty, 2016; Crotty & Rogers, 2012a; Crotty & Rogers, 2012b).

The communities of practice are spaces where members can learn how to respond to existing and new environmental requirements. Front-line managers see themselves as playing a pivotal role in these communities, in terms of

disseminating and interpreting environmental legislation and the requirements of State actors, and as being someone that other members of the community of practice could turn to for advice. In all three plants, research participants also signed up to additional environmental training and regular annual examinations, ensuring their knowledge was upgraded. Front-line managers saw themselves as inhabiting multiple identities as 'commissioners for the environment', a lawful citizen of their country, and personally concerned 'green' individuals. In Wenger's (1998) terms, they felt able to facilitate the learning of other participants, the utilisation of resources and the building of a 'shared repertoire' in pursuit of a 'joint enterprise' within the communities. The human resources (HR) and environmental management (EM) departments also contributed to the building and maintenance of the communities by offering weekly environmental briefings, which enabled participants to come together regularly as a community of practice at least once a week. This shows a different picture in comparison to the variety of Green HRM practices identified in the Western context.

The study provides evidence that learning in the communities regarding the production of 'green' practice creates boundaries, not because participants are trying to exclude others but because sharing a history of learning ends up distinguishing those who were involved from those who were not (Wenger, 2010). For some of the front-line managers, boundaries were a source of significant uncertainties between different agendas issuing from different 'structural units' (e.g. administrative departments such as HR and EM). For others, boundaries were related to unpredictable and complex legal changes, which at the same time provided both risks and opportunities for more 'green' initiatives. Still for others, boundaries arose out of out-dated practices inherited from the Soviet Union which were now not attractive to all the participants. Thus, three types of boundaries (across different agendas between internal and external actors, across different societal values regarding the environment, and across participant perspectives on the traditional learning mechanisms inherited from the Soviet Union) showed the areas of main conversation and interaction around environmental sustainability, with the consequence of potential different interpretations (due to the lack of a common understanding). The literature in this field has shown how contested understandings of environmental sustainability generate trade-offs and tension in organisations (Banerjee, 2001; Hahn et al., 2015). The implication is

that front-line managers are involved in the boundary work to address these boundaries and sustain the communities of practice. These different types of uncertainties also imply different strategies for addressing uncertainties in their work as facilitators.

In summary, the analysis of the data is based on the concepts around the community of practice developed by Wenger (1998), which is relevant to this study in two ways. First, the challenge of identifying communities of practice has helped to analyse the data using four components of situated learning (community, practice, meaning, identity). Second, the use of ideas around communities of practice has been beneficial for identifying boundaries, which are places of potential misunderstanding and confusion arising from different regimes of competence, commitments, values, repertoires, and perspectives (Wenger, 1998). In this study, changes in shared histories of learning about 'environmental protection' between Soviet and post-Soviet time have created 'greening' as a boundary 'maker' in the learning environment. Different interpretations of 'greening' between those who have been participating in green communities, and others, have helped to identify places for further learning around boundaries.

8.1.2. Boundary objects

The second sub-research question of the thesis sought to highlight how learning for corporate greening is generated around the boundary objects in the three companies. In order to address the research question, this study uses the concept of boundary objects (Wenger, 2000). The literature considers boundary objects as important to sustainability learning because they help to identify a 'shared focus' across boundaries of practice which is crucial to the successful implementation of green business practices in organisations (Fenwick, 2007; Hawkins et al., 2017). Participants in this study seemed to employ three boundary objects that enabled them to shape conversations about environmental protection and to make sense of tensions and misunderstandings, as well as different interpretations of environmental responsibility by different actors inside and on the peripheries of the green communities of practice. The three boundary objects create places for potential engagement in 'green' communities of practice as well, as new impulses for facilitating learning and practices.

Chapter 7 presents three boundary objects, and shows how they serve as a focus for negotiations across boundaries and provide the 'green' communities with a shared language around corporate greening. Three boundary objects – a structural boundary object 'law', a visionary boundary object 'Rodina' (homeland); and a market-related boundary object 'market' - prompt different responses from community members.

The concept of boundary objects is used to study a diverse range of interactions (Floor, 2018). A commonly identified boundary is between the science and policy worlds (Star, 2010; Turnhout, 2009). In this study, the main boundaries seemed to lie between different hierarchical levels, as well as between different functions of the organisations, who had different perspectives on issues such as the commercialisation of 'environmental' aspects (Figure 8.1.).

The structural boundary object 'law' was seen to act as a pivot between different agendas and interpretations of organisational and state actors with respect to understandings of and compliance with environmental legislation (section 7.1.). The visionary boundary object 'Rodina' was seen to have shifted from a traditional Soviet patriotic notion of working hard for and devoting one's efforts to the country to a new understanding of the environment as a common good. Tensions around this boundary object arose in terms of the respective responsibilities of citizens and government. The communication around the relational boundary object 'market' in the 'green' communities of practice involved different perspectives on relations with clients or suppliers and the commercial benefits of corporate greening, instead of relying on governmental-organised planned orders. Considering the findings of all three sections, the case study highlights various forms of boundary objects enabling interactions and communication between multiple communities' members - local, county, national and international - and across a range of approaches through which sustainability could be understood (Porter & Córdoba, 2009).

Some existing literature suggests that formal restructuring (downsizing of the chemical plants) represents the blurring of traditional boundaries by creating new functions, objectives, and scope for an organisation (Ofori & Hinson, 2007; Karake, 1998). Changing organisational and market structures in the organisations in this case study seem to have had a similar effect. Other

boundary objects, particularly the visionary boundary object Rodina, seem to be particular to the Belarussian context, and have not been described in relation to greening in existing literature. Conversations around all three boundary objects could be seen to be rooted in the socio-historical and ideological background of a post-Soviet economy in transition. The boundary objects also served as a focus for front-line managers to articulate what they saw as the main sources of disengagement with corporate greening: (1) non-community members' distrust of government promises and motivations for environmental legislation; (2) a lack of attraction to some organisational members of established organisational practices inherited from the Soviet Union; and (3) businesses still having to depend on decisions from the government on ecological investment and the marketisation of environmental aspects, like it is possible in the capitalist's economies, thus preventing the communities from growing. As a result, front-line managers felt that additional learning potential for actively involving staff and stakeholders in developing and adapting everyday 'green' practices needed to be generated. In this way, the theoretical lens of Wenger (2000) concept 'boundary objects' was suitable for analysing and understanding environmental responsibility in contemporary post-Soviet society. Furthermore, the concept shed light on the transformation processes within the important sector in Belarus (chemical industry), in which front-line managers engage with serious boundaries among communities. These boundaries they experience differently than their colleagues in Anglo-Saxon countries.

8.1.3. Practices for facilitating learning for corporate greening

The third research sub-question has been to examine the practices front-line managers in the case study companies employed to facilitate learning for corporate greening. Chapter 8 presents these practices which front-line managers said they used regularly and repeatedly to address day-to-day communication challenges on environmental responsibility, with their team members, peer colleagues, senior management or external actors, to improve their skills, knowledge and awareness with respect to corporate greening, and create a notion of togetherness through fostering greening activities.

Wenger's (2000, 2010) modes of identification (engagement, imagination, alignment) provide a useful conceptual tool to help understand how Front-line managers facilitate learning for corporate greening. The study identified three

sets of practices that facilitate learning in the landscape of four 'green' communities of practice, including: engagement practices for working with different departments such as HR and environmental departments (section 8.1); imagining practices for constructing an image of themselves as educators, and making learning for corporate greening part of the organisation's mission (section 8.2); and alignment practices for ensuring that 'greening' activities are sufficiently aligned with the organisation's and country's intersection of needs (section 8.3). Below, each set of practices is briefly discussed.

The engaging practices refer to boundary work through awareness-raising and incentives. Examples included outreach activities and 'moral encouragement' processes to help encourage disengaged non-participants in green communities of practice. Both practices - outreach activities and 'moral encouragement' activities - originated in Soviet times, and have been re-purposed by the research participants to encourage employees to engage with corporate greening. These practices are used to ensure meaningful participation in 'green' communities, particularly in relation to the development of virtues in both young and mature workers, in line with current moral models in society. This echoes the findings of Glanzer (2005), which see the act of taking responsibility for the environment the moral duty of every citizen.

Imagining practices were aimed at leveraging positive feelings towards the homeland to engender a sense of shared environmental responsibility. These practices included the use of big commemorative events to bring out pride in the environmental achievements of individuals, and mentoring around the visionary boundary object 'Rodina' to help develop a sense of belonging and togetherness for environmental protection. In their boundary work involving these imagining practices, front-line managers aimed to focus the aspirations of the members of the four 'green' communities of practices on broad-ranging environmental concerns which address their motherland and the planet.

Alignment practices were used by front-line managers to coordinate, collaborate, and negotiate with external actors. These practices included consultations with inspectors, collaborative practices for environmental innovation in 'green' cross-community projects, and practices with a focus on negotiating access to international clients. Through these practices, front-line managers aimed to align

the organisation's environmental and economic goals with government requirements regarding effective management of their organisations and environmental matters.

Unlike some existing literature, which suggests that first line managers tend to have only a limited involvement in learning and development activities in comparison to the main role of HR practitioners in Green HRM practices (Jabbour & Santos, 2008; Jabbour & Jabbour, 2016), the front-line managers in this study were found to have an important role in facilitating learning for corporate greening in their organisations. In this respect, front-line managers could be seen to take an environmental learning journey, along with other members of the green communities of practice (Wenger, 2010), as well as trying to 'recruit' new members by encouraging lower order learning, which includes explaining ideas or concepts, recalling, and applying the ideas, and which are necessary for higher order learning (Berta, et al., 2015). When front-line managers develop engaging practices, such as outreach activities, they see themselves as taking the role of a teacher who personally feels that the complex environmental information is not sufficiently explained at the centrally planned events for their team members. By using outreach activities, front-line managers aim to reduce knowledge uncertainties and bridge knowledge boundaries across communities of practice. Similarly, acting as a facilitator, the front-line manager provides awareness-raising and incentives, which they do not see as being sufficiently covered by HR practices in their organisations.

The findings of this study are in line with the findings of studies of Benn (2014) and Hawkins et al. (2017) which indicate that the facilitator provides ongoing support, tailored to local circumstances through motivation, collaboration, and establishing effective communication channels among those making the change. In this way, the facilitator influences the organisational climate and promotes a culture for corporate greening (Benn & Martin, 2010; Crane, 2000). Thus, the study demonstrates that cultivating communities of practice in the hierarchical organisations to encourage learning can be a difficult experience. Furthermore, the research also showed that not all front-line managers had the necessary time or abilities to facilitate learning for corporate greening. Some front-line managers were lacking time for activities, as well as a group of people who could have helped them to acquire additional expert knowledge (e.g. about a particular

hazardous material). The research participants felt that they had been left alone, and they had to rely solely on their own knowledge and competence to manage people. Crucially, the study has shown the role of front-line managers in motivating non-participants to adopt environmental practices, despite the fact the non-participants perceive less meaning in environmental protection, this as a result of socio-historical circumstances. The Belarussian front-line managers have largely mediated the imbalance by employing educational and awareness-raising activities, and offering a justified rationale for the potential commercial benefits of environmental responsibility. While such an active role of managers in transforming environmental organisational behaviour has been observed in some other studies in advanced economies (Boiral, 2007; Boiral, et.al. 2016), the managers there were found to have been financially supported by organisations through the allocation of an extra budget for environmental activities. In contrast, the front-line managers in Belarus experience difficulties in supporting their efforts financially. Therefore, their effort to facilitate learning for corporate greening was aimed at using more passionate and knowledgeable community members to solve complex environmental issues, which require additional measures in large-scale chemical production, such as testing, experimentation and evaluation.

8.2. Contributions of the study

This research makes a number of contributions to the literature on corporate greening and on situated learning, as well as to practice. First, by applying an established theoretical framework, i.e. situated learning theory as proposed by Wenger and co-authors (Wenger, 1998; 2000; 2010; Lave & Wenger, 1991), to a field where it has rarely been applied before, i.e. corporate greening, this thesis provides a more in-depth and detailed view of learning for corporate greening, and thus makes a theoretical contribution to the corporate greening literature. Second, by situating the research in a country in transition, Belarus, this study makes visible aspects of corporate greening, as well as of situated learning, that are often seen only in other contexts, i.e. mainly Western contexts, and therefore not covered by the existing literature. Third, by focusing on first-line managers, the study looks at a group of actors who are under-researched in both the corporate greening and the situated learning literature, and whose role in facilitating learning for corporate greening turns out to be significant and distinct.

The research findings offer some practical insights into the possibilities of facilitating learning for corporate greening and green engagement in organisations beyond the specific context of the present study.

8.2.1. Theoretical contribution

The thesis draws on community of practice and boundary objects under a situated learning perspective, which is viewed as a version of social learning theory (Wenger, 1998, 2000, 2010). Recently, the application of these theories has been identified as an effective way forward for a stronger theoretical debate in sustainability learning research (Benn et al., 2013; Benn & Martin, 2010; Madsen & Noe, 2012; Reed, et.al., 2014; Weller, 2017). This study hence addresses the need identified in the literature regarding the theoretical advancement of how learning for environmental responsibility in communities of practice is facilitated by low-tier employees, such as front-line managers (Allen et al., 2017; Morrow & Mowatt, 2015). Situated learning theory aims to anchor social practice in socio-historic contexts (Wenger, 2010), and the context of Belarusian chemical plants has helped to uncover aspects of learning for corporate greening that would not have been easily visible in a different context, thus adding to the literature. Therefore, there are two main contributions to theory in this study.

First, the study highlights the importance of socio-historical influences, particularly the role of the Soviet legacy, for situated learning for corporate greening in the context of Belarusian chemical plants. There is a common critique of research on communities of practice where those communities are introduced in an ahistorical fashion (Pyrko et al., 2010; Roberts, 2006). Fueller (2013) noted that one of the limitations of present work on communities of practice is that its application has only been offered in the site of the contemporary workplace in advanced industrial society and environment. Similarly, the studies on sustainability learning acknowledge their limitation, that the notion of a community of practice may manifest itself differently as societal contexts evolve (Nurse-Bray et al., 2016; Orsato et.al, 2018). The findings of this thesis link these arguments by presenting 'green' communities of practice in Belarus, which have been organised based on different assumptions. Whereas the Wenger focus is on the process of meaning-making that takes place horizontally, i.e. between people on similar hierarchical levels, within communities of practice (Wenger, 2010), the present study highlights the importance of vertical transmission of

knowledge, from top to bottom and vice versa, in communities of practice that contain members at higher levels of the hierarchy within and beyond organisations. Furthermore, the findings also highlight boundaries in Belarusian governmental-controlled companies that do not only emanate from conflicts between senior management and external actors, as has been discussed in some existing literature (Benn & Martin, 2010; Orsato et.al., 2018; Weller, 2017), but also internally, amongst the various administrative and production units, where experts, peers and team members can show different interests and perspectives with respect to the importance of the environment. Post-Soviet structures and cultural assumptions have shaped the way in which communities of practice have been formed and operate, for example in terms of the greater importance of State bodies such as the Ministry of Environment and the State-owned concern Belneftekhim, in setting environmental agendas, and directly influencing company decisions. Some of these insights may also be applicable in other contexts. For example, a closer look at green communities of practice in Western companies might also reveal boundaries across functional and administrative divisions within an organisation, e.g. between the marketing function and the environmental function. This echoes the findings of Hahn et al. (2015), who distinguish between tensions: among personal and organisational agendas; corporate short-term versus long-term orientation (financial objective versus long-term investment); isomorphism versus structural and technological change (demands for fundamentally-changed products and business models); and efficiency of organisations and resilience of socioeconomic systems. Therefore, the findings of this study provide evidence that the multiple tensions are necessary to improve green business practices (Gao & Bansal, 2013; Hahn et al., 2015; Smith & Lewis, 2011).

The second theoretical contribution concerns boundary objects as a useful theory to uncover socio-historical interpretations of boundaries across environmental practices. In social learning theory, the concept of the boundary object was adopted to refer to artefacts, discourses and processes that function at the boundaries between communities of practice (Wenger, 1998). These boundary objects allow members of different communities to interact productively, from enabling coordination (e.g., a set of instructions) to providing windows into another practice (e.g., a documentary). However, the main critique of the

boundary object theory is that it is too mechanical, and it ignores the effect of intergroup politics and local conditions (Hawkins et al., 2017). In this study, boundary objects theory is introduced as a tool to identify and study how interactions and interpretation between different actors take place around boundaries across 'green' communities, generating, in this way, a new space for learning. The study has shown that several 'green' communities of practice share the same boundary object. It has also demonstrated the importance of three boundary objects as discourses which had been shaped by the socio-historical context. Thus, when interpreting environmental responsibility, the members of the Belarussian 'green' communities filter the relevant environmental information differently, which is based on their past experiences, values and identities (professional or societal). In this case, the use of boundary object theory has shown that without taking a broader view of what environmental responsibility is for a range of different actors in the community of practice, and how it is enacted by structural, visionary and market-related boundary objects – 'law', 'Rodina' and 'market' – embedded on the socio-historical context of contemporary post-Soviet Belarus, the understanding of practices used by the front-line managers to facilitate learning for environmental responsibility is not complete. For example, as the result of a lawful citizen that was dominated by the data, in Belarus it appeared to be not only about going beyond compliance (Davis, 1973), but also about being able to demonstrate that you were compliant with the environmental law and the view of the government. Therefore, this study illustrates that environmental responsibility in a transition economy is both open to interpretation within local contexts, and is not always limited to conventional interrelations about the term. In contrast, new non-Western interrelations of environmental responsibility, which are currently limited in their representation in the boundary work literature, can enhance the debates on boundary objects theory.

8.2.2. Empirical contribution

There is academic value in exploring new contexts, the transition economies, in order to advance the nascent field of research on environmental sustainability in a non-Western context (Chapter 1). Previously, research on the environmental engagement of employees has been largely undertaken in the context of developed economies, which have distinct institutional structures compared to developing countries. Therefore, findings from these countries cannot be

generalised globally. The research in contextual settings of countries in transition economies is thus important, mainly because the post-Soviet transition period has proven to be one of those rare historical eras in which both culture and economy have undergone fundamental changes simultaneously (Kuznetsov & Kuznetsova, 2005). New processes of liberalisation have forced these countries to learn how to manage their organisations differently (Havrylyshyn & Van Rooden, 2003), and Western theoretical concepts of the state, nation, democracy, and market are not applicable to post-Soviet countries (Titarenko, 2007). All of these contextual factors can have a bearing on the environmental behaviour of employees. By generating rich data about learning for environmental sustainability in chemical plants in Belarus, this study offers an empirical contribution to knowledge as it responds to the widespread calls in the literature that research should pay greater attention to investigating non-Western country contexts, and transition economies in particular, if we are to fully understand environmental organisational behaviour globally (Crotty, 2016).

Second, the study fills the research gap of limited empirical studies on situated practices and learning for environmental responsibility. Benn et al. (2013) argue that empirical studies examining the situated practices by which members of organisations co-develop and enact new ways of being sustainable remain rare. The findings of this study provide evidence of four 'green' communities which are maintained, in part, through practices inherited from the Soviet Union. The societal and historical context of post-Soviet Belarus makes the findings on the learning environment unique as it shows different aspects that are unknown from the Western literature. In particular, the study illustrates communities of practice with traditional hierarchical organisations and government-controlled organisations. Thus, front-line managers do not have financial support to create practices, such as expensive platforms for discussion, nor the authority to organise regular large meetings as the study has demonstrated. They would rather use existing practices inherited from the Soviet Union, or create new informal practices, which may create a better meaning for 'greening' and a sense of belonging among community members (as already mentioned in section 8.2.1). These practices have helped to develop an organisational culture aimed at integrating new sets of data, and external and internal communication strategies (Hibbert & Cunliffe, 2015).

Finally, another important contribution to the literature is its extension of the role of front-line managers in facilitating learning for a greater engagement of employees in corporate greening. A few studies have highlighted the crucial role of middle-managers in developing unique organisational capabilities of employees (Sharma & Vredenburg, 1998). Also, the role of the first-line managers is crucial for corporate greening (Rothenberg, 2003). This study has found that the front-line managers of chemical plants in Belarus indeed possess contextual environmental knowledge about production processes, and how to reduce energy, water, or resource consumption at the workplace in a most effective way. At the same time, Belarussian front-line managers in this study are team leaders and supervisors, who take their marching orders from middle-level managers, top managers, and other 'structural units' which, as discussed earlier in this chapter, may hold agendas contradictory to those held by the production team. Therefore, the importance of this study is in it providing evidence that front-line managers ensure that their team members understand their roles, the expectations attached to every click of a mouse on the chemical production system, and the necessity of discussion with internal and external actors on how to achieve significant reductions in the use of resources. The study supports the findings of Goulden & Spence (2015) and Aguinas & Glavas (2015), who found that first-line managers are an interface between senior management, who are the source of the organisation's environmental strategy, and the employees (concerning their work and infrastructure) and other stakeholders. Therefore, while corporate greening takes place at the organisational level, the study provides a deeper understanding of the role of front-line managers who do not just execute tasks from the senior management. This study demonstrates the importance of front-line managers in motivating and engaging staff in social learning within often-complex organisational dynamics.

8.2.3. Practical contribution

The findings of this study also carry value for practice.

The study offers a practical contribution by showing how boundary objects might be used in human resources (HR) processes to support environmental sustainability. In the scholarly literature, there have been several attempts at describing the relationship between the HR function and boundaries. This study shows how boundary objects have been used by front-line managers to facilitate

learning for more sustainable organisations at individual, team and organisational levels. This resonates with arguments made by other scholars (e.g. Jabbour & Santos, 2008) that the HR function should be integrated with organisational sustainability by formulating human resource management (HRM) policies and practices that stimulate the environmental strategies of the organisation. However, there are limited attempts to demonstrate how boundary objects can be used in generating and supporting learning in underpinning the formation of a community of practice around sustainability (Benn & Martin, 2010). Therefore, the study has provided a better understanding of the perceptions of the front-line managers about boundaries that prevent engagement of the actors in green business practices. Consequently, knowing more about challenges allows HR practitioners (and researchers) to better assess organisational settings for 'green' learning, as well as design appropriate developmental HR interventions to help front-line managers build their capabilities as facilitators. Without information on these issues, the organisational GHRM policy fails to design a holistic approach to employee engagement in corporate greening.

The study also shows the importance of considering the socio-historical influences of a country when designing HR learning and development activities for environmental responsibility. The HR specialists' ability to: affect the structure of HR policies through considering environmental regulations, societal changes and market conditions were all clearly present in the research participants' minds when they talked about how they generated new facilitating practices to encourage learning for corporate greening in their organisations. Being sensitive to this socio-historic context would seem to be highly important for all members of HR functions, including HR and EM specialists and low tier management, in deciding which measures to support learning for corporate greening and what practices could be acceptable across organisation. The results of this study do not only apply in Belarus and other economies in transition, but in all types of socio-historical contexts. Moreover, the thesis shows that front-line managers have an important role in facilitating participation and learning in the 'green' communities of practice. This role of front-line managers is likely to also apply in different organisational, industrial, and possibly national contexts, and is something that could be explicitly encouraged and supported by the HR function. Front-line managers in this study often felt that they had insufficient support from

their organisations, suggesting that organisations might improve participation and learning in green communities of practice by more explicitly supporting the facilitation role of front-line managers, echoing Alan et al.'s (2017) comments on the importance of providing critical organisational resources for corporate greening. In this sense, the research helps to better understand how firms are able to engage their employees in environmental practices and achieve better environmental performance by supporting the facilitating role of front-line managers.

8.3. Limitations of the study

While this study offers important insights about 'green' communities of practice (Chapter 6), boundary objects (Chapter 7) and facilitation practices (Chapter 8) in three chemical plants in Belarus, and thus fills some important research gaps (Section 1.5) in the greening business literature, it has some limitations.

First, the study has adopted a qualitative methodological approach. While this is a recommended approach for a study like this, which examines a new research context (Dyer & Wilkins, 1991; Eisenhardt, 1989), unlike the results of a survey-based study that can be generalised, the findings of this research might not be regarded as generalisable. However, the study provides interesting findings of the contextualising of managers' actions towards corporate greening which 'greening' literature may find useful. The findings of this study permit a comparison with the findings of other studies where the facilitation of learning in corporate greening as a phenomenon is observed. Furthermore, this phenomenon can be observed in similar post-Soviet countries which have similar institutional, cultural and transitional structures to Belarus, for example other low-speed countries in transition. These theoretical generalisations can meet the quality parameters of 'transferability' and 'dependability'; i.e. they can be applicable in other contexts at different times (Lincoln & Guba, 1985).

Second, the study does not present a comparative analysis of industry sectors. The insights from the study about the organisational behaviour of chemical plants towards corporate greening may not be regarded as conclusive for firms of similar size in other industry sectors of Belarus. However, examining the environmental behaviour of plants in other sectors in Belarus, such as textile, agriculture and food processing, which have considerable export concerns as well as

environmental issues, has been identified as an opportunity for future studies (Section 8.5).

Finally, the findings of this study refer to considerable environmental pressures coming from different sources. However, this conclusion is based on the responses of front-line managers and other stakeholders of the chemical industry from within Belarus. Thus, perceptions of other actors who may have different perceptions remain under-explored. Future research can therefore also consider interviewing inspectors, senior managers, workers and international buyers, for example, from the European region, while examining the environmental behaviour of chemical plants in Belarus.

8.4. Future research

In light of this thesis, future research should concentrate on finding communities promoting corporate greening and apply the community of practice framework in the same way that it has been applied here to build up a repertoire of case studies. Building on its findings, this study makes some suggestions for future research.

One of the main findings from this research is that front-line managers have a potentially very significant role in facilitating learning and engagement with green communities of practice in their workplace. The understanding in this research is that front-line managers use their managerial agency to develop their facilitation practices associated with engagement in joint activities, negotiation of mutual relevance, peer recognition, identity and reputation, and commitment to collective learning. However, research studies on involving front-line managers in GHRM remain rare. The majority of the HRM literature, including GHRM focuses on line managers who could be both – middle and first line managers (Hales, 2005). Therefore, more research into front-line managers' role and their ability to influence organisational learning processes for corporate greening would be useful in order to build up a more comprehensive picture of employee green engagement. As the findings of the study presented, front-line managers are applying these practices to those employees who felt they did not care about the environment anymore (non-participates). More research into 'informal' practices for learning for corporate greening, which the front-line managers are able to customise their practices in a free form would help generate more knowledge

how to re-engage such employees to feel more sense in green practices in a systematic way. These unplanned and emerging motivational actions of front-line managers are different from HRM interventions, which are normally planned in advance and address a large number of employees (Govindarajulu & Daily, 2004). Furthermore, as the study presented front-line managers consider their limited resources of time, attention, and sometimes environmental knowledge, and make decisions about how they and also others participate in landscapes of environmental practice. Further research could focus on the personal agency of front-line managers as particular learning citizens (Wenger, 2010) who take a unique position in their communities of practice. Wenger (2010) suggested future questions on how do these individuals manage their own membership in existing communities full of community but also personal boundaries (e.g. a research question on how do front-line managers contribute to communities they belong to and manage themselves)? Thus, the research of this study agrees that more research is needed to study the other possible ways of seeing a boundary as a bridge, and how brokers can use such a bridge across practices. By doing this, hopefully organisations will be more inclined to acknowledge personal initiatives for self-learning for corporate greening that encourages employees (not only front-line managers) to initiate and facilitate green engagement in their work.

Another possibility, multi-country studies can be another avenue for future research, taking one community of practice into consideration. For example, such studies can compare and contrast the dynamics of the '*environmental innovations*' community of practice in other transition (which as this study presented has a long history in Belarussian companies), as well as Western and/or developing, economies. A possible research project could be exploring the dynamics of environmental innovations for reducing environmental footprints of businesses: a comparative study of Ukraine, Russia and other transition countries. Such studies could bring useful insights for senior managers, but also international large organisations which look forward to supporting businesses in transition economies to adopt environmental practices.

8.5. Conclusion

This study addresses the gap of limited understanding of how front-line managers in a transition economy facilitate learning for more 'green' ways of working because explanations based on individual learning perspectives have been

incomplete (Chenven & Copeland, 2013). Using a qualitative multiple case study design, the study has demonstrated that front-line managers in Belarussian chemical plants have developed practices which facilitate learning for corporate greening. The findings suggest that rather than sustaining or imagining particular community boundaries enabling situated learning (Wenger, 2000), front-line managers see opportunities for the further growth of 'green' communities through the generation of practices by re-purposing former Soviet practices, which were previously not meant to have an environmental protection focus, or adapting new facilitation practices, which foster horizontal ways of communication. This study demonstrates that the front-line managers, through three sets of facilitation practices, encourage mutual relationships among participants in their traditionally hierarchical organisations. These include the practice: of working with other departments, their teams and HR departments (engagement); of constructing an image of themselves as educators, and making environmental education part of the country's mission (imagining); and of ensuring that 'green' activities are sufficiently aligned with not only the organisation's, but also the government's, view of shared responsibility for environmental protection (alignment). In this way, the front-line managers act as facilitators based on the assumption that the differences (boundaries) will disappear, and a constructive conflict can be avoided by making different perspectives explicit, and adjusting values and agendas to new circumstances. Through applying facilitation practices for engagement, imagining and aligning (Wenger, 2000), front-line managers help new members to identify with 'green' communities, and transform their communities towards more 'green' ways of working. Future research on how to overcome internal politics and hierarchical power needs to look beyond identified explanations, in order to gain a deeper understanding of learning mechanisms in post-Soviet contexts.

LIST OF REFERENCES

- Aguilera-Caracuel, J., Hurtado-Torres, N., & Aragón-Correa, J. (2012b). Does international experience help firms to be green? A knowledge-based view of how international experience and organisational learning influence proactive environmental strategies. *International Business Review*, 21(5), 847-861.
- Aguinis, H., & Glavas, A. (2017). On corporate social responsibility, sensemaking, and the search for meaningfulness through work. *Journal of Management*, 0149206317691575.
- Akkerman, S., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of educational research*, 81(2), 132-169.
- Albertini, E. (2013). Does environmental management improve financial performance? A meta-analytical review. *Organization & Environment*, 26(4), 431-457.
- Aldrich, H., & Herker, D. (1977). Boundary spanning roles and organization structure. *Academy of management review*, 2(2), 217-230., 2(2), 217-230.
- Allen, S., Cunliffe, A., & Easterby-Smith, M. (2017). Understanding Sustainability Through the Lens of Ecocentric Radical-Reflexivity: Implications for Management Education. *Journal of Business Ethics*, 1-15.
- Amable, B. (2003). *The diversity of modern capitalism*. Oxford: Oxford University Press.
- Ambec, S., Cohen, M., Elgie, S., & Lanoie, P. (2013). The Porter hypothesis at 20: can environmental regulation enhance innovation and competitiveness?. *Review of environmental economics and policy*, 7(1), 2-22.
- Ancona, D., & Caldwell, D. (1992). Bridging the boundary: External activity and performance in organizational teams. *Administrative science quarterly*, 634-665.
- Anderson, L., & Bateman, T. (2000). Individual environmental initiative: Championing natural environmental issues in US business organizations. *Academy of Management journal*, 43(4), 548-570.

- Andersson, L., Jackson, S., & Russell, S. (2013). Greening organizational behavior: An introduction to the special issue. *Journal of Organizational Behavior*, 34(2), 151-155.
- Ángel del Brío, J., Junquera, B., & Ordiz, M. (2008). Human resources in advanced environmental approaches—a case analysis. *International Journal of Production Research*, 46(21), 6029-6053.
- Antal, A., & Sobczak, A. (2004). Beyond CSR: Organisational learning for global responsibility. *Journal of general management*, 30(2), 77-98.
- Antonacopoulou, E. (2006). The relationship between individual and organizational learning: New evidence from managerial learning practices. *Management learning*, 37(4), 455-473.
- Antonacopoulou, E. (2009). Impact and scholarship: Unlearning and practising to co-create actionable knowledge. *Management learning*, 40(4), 421-430.
- Anttonen, M. (2010). Greening from the front to the back door? A typology of chemical and resource management services. *Business Strategy and the Environment*, 19(3), 199-215.
- Apostol, O., & Näsi, S. (2014). Firm-Employee Relationships from a Social Responsibility Perspective: Developments from Communist Thinking to Market Ideology in Romania. A Mass Media Story. *Journal of Business Ethics*, 119(3), 301.
- Aragon-Correa, J., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *Academy of management review*, 28(1), 71-88.
- Aristov, Y., Vasiliev, L., & Nakoryakov, V. (2008). Chemical and sorption heat engines: State of the art and development prospects in the Russian Federation and the Republic of Belarus. *Journal of Engineering Physics and Thermophysics*, 81(1), 17-.
- Armitage, D., Marschke, M., & Plummer, R. (2008). Adaptive co-management and the paradox of learning. *Global environmental change*, 18(1), 86-98., 18(1), 86-98.
- Atroshko, M., & Luchina, B. (2015). Практическая реализация задач по охране животного и растительного мира в Республике Беларусь.
- Azot. (2018). *Concern*. Von <http://www.azot.by/ru/about/concern> abgerufen
- Banaszak, I., & Beckmann, V. (2008). The incentive structure in public policies—The example of the law on producer groups in Poland. *Society and Economy*, 30(1), 79-92.

- Banerjee, S. (1998). Corporate environmentalism: Perspectives from organizational learning. *Management Learning*, 29(2), 147-164.
- Banerjee, S. (2001). Managerial perceptions of corporate environmentalism: Interpretations from industry and strategic implications for organizations. *Journal of management studies*, 38(4), 489-513.
- Banerjee, S. (2002). Corporate environmentalism: the construct and its measurement. *Journal of Business Research*, 55(3), 177-191.
- Banerjee, S. (2012). A climate for change? Critical reflections on the Durban United Nations climate change conference. . *Organization Studies*, 33(12), 1761-1786.
- Bansal, P. (2003). From issues to actions: The importance of individual concerns and organizational values in responding to natural environmental issues. *Organization Science*, 14(5), 510-527.
- Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic management journal*, 26(3), 197-218.
- Bansal, P., & Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of Management Journal*, 47(1), 93-103.
- Bansal, P., & Roth, K. (2000). Why companies go green: a model of ecological responsiveness. *Academy of management journal*, 43(4), 717-736.
- Barbier, E. (1987). The concept of sustainable economic development. Environmental conservation. *Environmental conservation*, 14(2), 101-110.
- Barrett, M., & Oborn, E. (2010). Boundary object use in cross-cultural software development teams. *Human Relations*, 63(8), 1199-1221.
- Baskin, J. (2006). Corporate responsibility in emerging markets. *Journal of corporate citizenship*, 24(1), 29-47.
- Baughn, C., & McIntosh, J. (2007). Corporate social and environmental responsibility in Asian countries and other geographical regions. *Corporate Social Responsibility and Environmental Management*, 14(4), 189-205.
- Baxter, P., & Jack, S. (2008). Qualitative case study methodology: Study design and implementation for novice researchers. *The qualitative report*, 13(4), 544-559.
- Bechky, B. (2003). Sharing meaning across occupational communities: The transformation of understanding on a production floor. *Organization science*, 14(3), 312-330.

- Belarusfacts. (2017). *www.belarus.by*. Von <http://www.belarus.by/en/government/constitution> abgerufen
- Bell, J. (1993). *Doing your research project*. Buckingham: Open University Press.
- Belneftechim. (2016). Official site. <http://www.belneftekhim.by/en/> (access on 1 July 2016).
- Belstat. (2016). *The sector economy*. <http://www.belstat.gov.by/en/ofitsialnaya-statistika/real-sector-of-the-economy/promyshlennost/statistika-innovatsii/the-structure-of-manufacturing-in-2000-2005-2010-and-2013/> (accessed on 1 July 2016): Belstat.
- Benn, S., & Martin, A. (2010). Learning and change for sustainability reconsidered: A role for boundary objects. *Academy of Management Learning & Education*, 9(3), 397-412.
- Benn, S., Edwards, M., & Angus-Leppan, T. (2013). Organizational learning and the sustainability community of practice: The role of boundary objects. *Organization & Environment*, 26(2), 184-202.
- Bento, R., Mertins, L., & White, L. (2017). Ideology and the balanced scorecard: An empirical exploration of the tension between shareholder value maximization and corporate social responsibility. *Journal of Business Ethics*, 142(4), 769.
- Berkes, F. (2009). Evolution of co-management: role of knowledge generation, bridging organizations and social learning. *Journal of environmental management*, 90(5), 1692-1702.
- Berkhout, F., Hertin, J., & Gann, D. (2006). Learning to adapt: organisational adaptation to climate change impacts. *Climatic change*, 78(1), 135-156.
- Berkhout, F., Hertin, J., & Jordan, A. (2002). Socio-economic futures in climate change impact assessment: using scenarios as 'learning machines'. *Global Environmental Change*, 12(2), 83-95.
- Berry, M., & Rondinelli, D. (1998). Proactive corporate environmental management: A new industrial revolution. *The Academy of Management Executive*, 12(2), 38-50.
- Berta, W., Cranley, L., Dearing, J., Dogherty, E., Squires, J., & Estabrooks, C. (2015). Why (we think) facilitation works: insights from organizational learning theory. *Implementation Science*, 10(1), .
- BIFM. (2015). *Annual Sustainability in Facilities Management (FM) survey*. http://www.sustainabilityexchange.ac.uk/files/sustainability-survey-2015-web_1.pdf: The Professional Body for Facility Management, UK.

- Birkinshaw, J., Ambos, T., & Bouquet, C. (2017). Boundary spanning activities of corporate HQ executives insights from a longitudinal study. *Journal of Management Studies*, 54(4), 422-454.
- Blackmore, C. (2007). What kinds of knowledge, knowing and learning are required for addressing resource dilemmas?: a theoretical overview. *Environmental Science & Policy*, 10(6), 512-525.
- Boiral, O. (2002). Tacit knowledge and environmental management. *Long Range Planning*, 35(3), 291-317.
- Boiral, O. (2005). The impact of operator involvement in pollution reduction: case studies in Canadian chemical companies. *Business Strategy and the Environment*, 14(6), 339-360.
- Boiral, O. (2009). Greening the corporation through organizational citizenship behaviors. *Journal of Business Ethics*, 87(2), 221-236.
- Boiral, O., Cayer, M., & Baron, C. (2009). The action logics of environmental leadership: A developmental perspective. *Journal of Business Ethics*, 85(4), 479-499.
- Boiral, O., Raineri, N., & Talbot, D. (2016). Managers' citizenship behaviors for the environment: a developmental perspective. *Journal of Business Ethics*, 1-15.
- Boudreau, M., & Robey, D. (2005). Enacting integrated information technology: A human agency perspective. *Organization science*, 16(1), 3-18., 16(1), 3-18.
- Brand, F., & Jax, K. (2007). Focusing the meaning (s) of resilience: resilience as a descriptive concept and a boundary object. *Ecology and society*, 12(1).
- Branzei, O., Ursacki-Bryant, T., Vertinsky, I., & Zhang, W. (2004). The formation of green strategies in Chinese firms: Matching corporate environmental responses and individual principles. *Strategic Management Journal*, 25(11), 1075-1095.
- Briers, M., & Chua, W. (2001). The role of actor-networks and boundary objects in management accounting change: a field study of an implementation of activity-based costing. *Accounting, organizations and society*, 26(3), 237-269.
- Brown, M., Treviño, L., & Harrison, D. (2005). Ethical leadership: A social learning perspective for construct development and testing. *Organizational behavior and human decision processes*, 97(2), 117-134.

- Brunton, M., Eweje, G., & Taskin, N. (2017). Communicating corporate social responsibility to internal stakeholders: walking the walk or just talking the talk? *Business Strategy and the Environment*, 26(1), 31-48.
- Bryan, F. (2006). *Fragmenting Work: Blurring Organisational Boundaries and Disordering Hierarchies*. Management Learning; Thousand Oaks Bd. 37, Aug. 2, 252-255.
- Bryman, A., & Bell, E. (2015). *Business research methods*. Oxford University Press, USA.
- Budhwar, P. (2000). Evaluating levels of strategic integration and devolvement of human resource management in the UK. *Personnel Review*, 29(2), 141-157.
- Budhwar, P., Pereira, V., Mellahi, K., & Singh, S. (2018). The state of HRM in the Middle East: Challenges and future research agenda. *Asia Pacific Journal of Management*, 1-29.
- Burström von Malmberg, P. (2002). Environmental management systems, communicative action and organizational learning. *Business Strategy and the Environment*, 11(5), 312-323., 11(5), 312-323.
- Butko, E. (1999). Бутко Е.Я. Особенности функционирования и развития системы профессионального образования России в условиях перехода к рыночной экономике. *Профтехобразование России: Итоги XX века и прогнозы.*, В 2 т. Т. 1.М.
- Cafaro, P. (2010). Patriotism as an environmental virtue. *Journal of agricultural and environmental ethics*, 23(1), 185-206.
- Caldwell, R. (2003). Models of change agency: a fourfold classification. *British Journal of Management*, 14(2), 131-142.
- Cantor, D., Morrow, P., & Montabon, F. (2012). Engagement in environmental behaviors among supply chain management employees: An organizational support theoretical perspective. *Journal of Supply Chain Management*, 48(3), 33-51.
- Carlile, P. (2002). A pragmatic view of knowledge and boundaries: Boundary objects in new product development. *Organization science*, 13(4), 442-455.
- Carlile, P. (2004). Transferring, Translating and Transforming: An Integrative Framework for Managing Knowledge across Boundaries. *Organization Science*, 15(5): 555-568.
- Carmeli, A., Brammer, S., Gomes, E., & Tarba, S. (2017). An organizational ethic of care and employee involvement in sustainability-related

- behaviors: A social identity perspective. *Journal of Organizational Behavior*, 38(9), 1380-1395.
- Carroll, A. B. (2000). Ethical challenges for business in the new millennium: Corporate social responsibility and models of management morality. *Business Ethics Quarterly*, 10(1), 33-42.
- Carroll, A., & Shabana, K. (2010). The business case for corporate social responsibility: A review of concepts, research and practice. *International journal of management reviews*, 12(1), 85-105.
- Čekanavičius, L., Bazytė, R., & Dičmonaitė, A. (2014). Green business: challenges and practices. *Ekonomika*, 93., 93.
- Cetina, K. (1997). Sociality with objects: Social relations in postsocial knowledge societies. *Theory, culture & society*, 14(4), 1-30., 14(4), 1-30.
- Chase, W. (1989). Voluntarism, mobilisation and coercion: Subbotniki 1919–1921. . *Soviet Studies*, 41(1), 111-128., 41(1), 111-128.
- Chenven, L., & Copeland, D. (2013). Front-line worker engagement: Greening health care, improving worker and patient health, and building better jobs. *A Journal of Environmental and Occupational Health Policy*, 23(2), 327-345.
- Cherian, J., & Jacob, J. (2012). A study of green HR practices and its effective implementation in the organization: a review. *International Journal of Business and Management*, 7(21), p25.
- Cherp, A. (2001). Environmental assessment in countries in transition: Evolution in a changing context. *Journal of environmental management*, 62(4), 357-374.
- Chia, R. (2017). A process-philosophical understanding of organizational learning as “wayfinding” Process, practices and sensitivity to environmental affordances. *The Learning Organization*, 24(2), 107-118.
- Chia, R. (2017). A process-philosophical understanding of organizational learning as “wayfinding” Process, practices and sensitivity to environmental affordances. *The Learning Organization*, 24(2), 107-118.
- Christmann, P. (2000). Effects of “best practices” of environmental management on cost advantage: The role of complementary assets. *Academy of Management journal*, 43(4), 663-680.
- CHSH. (2017). *Doing Business in Belarus*.
http://turkey.mfa.gov.by/docs/doing_business_in_belarus_2017_chsh_eng.pdf: CHSH.

- Cohen, J. (2013). The nature of learning being facilitated by frontline managers. *Human Resource Development International*, 16(5), 502-518.
- Collings, D., Wood, G., & Szamosi, L. (2018). Human resource management: A critical approach. In *Human Resource Management* (pp. 1-23), Routledge.
- Collis, J., & Hussay, R. (2003). *Business Research: A practical guide for undergraduate and postgraduate students*. Second eds. : Palgrave Macmillan.
- COMMIN. (4. December 2017). Von <http://commin.org/en/bsr-countries/belarus/1.-constitutional-system/1.5.-division-and-interrelation-of-the-political-and-the-administrative-system.html> abgerufen
- Cooke, F. (2018). Concepts, contexts, and mindsets: Putting human resource management research in perspectives. *Human Resource Management Journal*, 28(1), 1-13.
- Crane, A. (2000). Corporate greening as amoralization. *Organization Studies*, 21(4), 673-696.
- Crane, A., & Matten, D. (2016). *Business ethics: Managing corporate citizenship and sustainability in the age of globalization*. Oxford University Press.
- Crespo, A., & del Bosque, I. (2005). Influence of corporate social responsibility on loyalty and valuation of services. *Journal of business ethics*, 61(4), 369-385.
- Creswell, J. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Crotty. (2016). Corporate Social Responsibility in the Russian Federation A Contextualized Approach. *Business & Society*, 0007650314561965.
- Crotty, J., & Hall, S. (2013). Environmental responsibility in a transition context: Russian NGO perception and response. *Environment and Planning C: Government and Policy*, 31(4), 667-681.
- Crotty, J., & Rodgers, P. (2012a). Sustainable development in the Russia Federation: the limits of greening within industrial firms. *Corporate Social Responsibility and Environmental Management*, 19(3), 178-190.
- Crotty, J., & Rodgers, P. (2012b). The continuing re-organisation of Russia's environmental bureaucracy: Regional interpretation and stakeholder response. *Problems of Post-Communism*, 59(4), 15-26.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Sage.

- Daily, B., & Huang, S. (2001). Achieving sustainability through attention to human resource factors in environmental management. *International Journal of operations & production management*, 21(12), 1539-1552.
- Daily, B., Bishop, J., & Massoud, J. (2012). The role of training and empowerment in environmental performance: A study of the Mexican maquiladora industry. *International Journal of Operations & Production Management*, 32(5), 631-647.
- Daily, B., Bishop, J., & Steiner, R. (2007). The mediating role of EMS teamwork as it pertains to HR factors and perceived environmental performance. *Journal of applied business research*, 23(1), 95.
- Dajneko, A. (2017). *Геоэкономические приоритеты Республики Беларусь*. Litres. Litres.
- Dalal, R., Lam, H., Weiss, H., Welch, E., & Hulin, C. (2009). A dynamic approach to organizational citizenship behavior and counterproductive work behavior: Behavioral co-occurrence and switching, and dynamic relationships with mood and overall job performance. *Academy of Management Journal*, 52(5), 1051-1066.
- Dalhammar, C. (2016). Industry attitudes towards ecodesign standards for improved resource efficiency. *Journal of Cleaner Production*, 123, 155-166.
- d'Arjuzon, R. (20. October 2012). *The Guardian*. Von We're all in this together: engaging employees on sustainability:
<https://www.theguardian.com/sustainable-business/employees-engaged-sustainability-how-abgerufen>
- Davis, K. (1973). The case for and against business assumption of social responsibilities. *Academy of Management journal*, 16(2), 312-322.
- Delbridge, R., & Keenoy, T. (2010). Beyond managerialism?. *The international journal of human resource management*, 21(6), 799-817.
- Delmas, M., & Blass, V. (2010). Measuring corporate environmental performance: the trade-offs of sustainability ratings. *Business Strategy and the Environment*, 19(4), 245-260.
- Delmas, M., & Montiel, I. (2008). The diffusion of voluntary international management standards: Responsible Care, ISO 9000, and ISO 14001 in the chemical industry. *Policy Studies Journal*, 36(1), 65-93., 36(1), 65-93.
- Denscombe, M. (2008). Communities of practice: A research paradigm for the mixed methods approach. *Journal of mixed methods research*, 2(3), 270-283.

- Dewe, M., & Coyle, A. (2014). Reflections on a study of responses to research on smoking: A pragmatic, pluralist variation on a qualitative psychological theme. *Review of Social Studies: Methodological Choices and Challenges*, 1(1), 21-36.
- Dewey, J. (1938). *Experience and education*. New York: Collier Books.
- Dewey, J. (1956). *Philosophy of education*.
- Dixon, S., Day, M., & Brewster, C. (2014). Changing HRM systems in two Russian oil companies: Western hegemony or Russian spetsifika? *The International Journal of Human Resource Management*, 25(22), 3134-3156.
- Dixon, S., Meyer, K., & Day, M. (2007). Exploitation and exploration learning and the development of organizational capabilities: A cross-case analysis of the Russian oil industry. *Human relations*, 60(10), 1493-1523.
- Dixon, S., Meyer, K., & Day, M. (2010). Stages of organizational transformation in transition economies: A dynamic capabilities approach. *Journal of Management Studies*, 47(3), 416-436.
- Domegan, C. (2007). The use of social marketing for science outreach activities in Ireland. *Irish Journal of Management*, 28(1), 103.
- Döring, M., & Ratter, B. (2015). 'Heimat' as a boundary object? Exploring the potentialities of a boundary object to instigate productive science-stakeholder interaction in North Frisia (Germany). *Environmental Science & Policy*, 54, 448-455.
- Dovers, S. (2005). Clarifying the imperative of integration research for sustainable environmental management. *Journal of Research Practice*, 1(2), 2.
- Down, S., & Reveley, J. (2009). Between narration and interaction: Situating first-line supervisor identity work. *Human Relations*, 62(3), 379-401.
- Dwiartama, A., & Rosin, C. (2014). Exploring agency beyond humans: the compatibility of Actor-Network Theory (ANT) and resilience thinking. *Ecology and Society*, 19(3)., *Ecology and Society*, 19(3).
- Dyer, W., & Wilkins, A. (1991). Better stories, not better constructs, to generate better theory: A rejoinder to Eisenhardt. *Academy of management review*, 16(3), 613-619.
- Easterby-Smith, M., Thorpe, R., & Jackson, P. (2012). *Management research*. Sage.
- EBRD. (2017). *Transition Report 2017-18*. <https://www.ebrd.com/transition-report-2017-18>: EBRD.

- Eichholtz, P., Kok, N., & Quigley, J. (2016). Ecological responsiveness and corporate real estate. *Business & Society*, 55(3), 330-360.
- Eisenhardt, K. (1989). Building theories from case study research. *Academy of management review*, 14(4), 532-550.
- Eke, S., & Kuzio, T. (2000). Sultanism in Eastern Europe: the socio-political roots of authoritarian populism in Belarus. *Europe-Asia Studies*, 52(3), 523-547.
- Ellinger, A., & Bostrom, R. (2002). An examination of managers' beliefs about their roles as facilitators of learning. *Management Learning*, 33(2), 147-179.
- Ellinger, A., & Cseh, M. (2007). Contextual factors influencing the facilitation of others' learning through everyday work experiences. *Journal of Workplace Learning*, Vol. 19 Issue: 7, pp.435-452,.
- Ellinger, A., Watkins, K., & Bostrom, R. (1999). Managers as facilitators of learning in learning organizations. *Human Resource Development Quarterly*, 10(2), 105-125.
- Engeström, Y., & Blackler, F. (2005). *On the life of the object*.
- Eriksson, P., & Kovalainen, A. (2015). *Qualitative methods in business research: A practical guide to social research*. Sage.
- Erkelens, R., van den Hooff, B., Huysman, M., & Vlaar, P. (2015). Learning from locally embedded knowledge: facilitating organizational learning in geographically dispersed settings. *Global Strategy Journal*, 5(2), 177-197.
- Espinosa, A., & Porter, T. (2011). Sustainability, complexity and learning: insights from complex systems approaches. *The Learning Organization*, 18(1), 54-72.
- Ewenstein, B., & Whyte, J. (2009). Knowledge practices in design: the role of visual representations asepistemic objects'. *Organization studies*, 30(1), 07-30.
- Expert. (2017). Von expert.ru/siberia/2011/27/deologiya-chistogo-goroda/abgerufen
- EY. (2013). *Role of HR in driving sustainable business practices*. available at <https://www.ey.com/Publication/vwLUAssets/EY-role-of-hr-in-driving-sustainable-business-practices/%24FILE/EY-Role-of-HR-in-driving-sustainable-business-practices.pdf>: NHRM.(accessed on 12 November 2018)

- Falaleeva, M., & Rauschmayer, F. (2012). Evaluating environmental governance in a Belarusian World Bank biodiversity project. *Environmental conservation*, 40(2), 147-156.
- Farnsworth, V., Kleanthous, I., & Wenger-Trayner, E. (2016). Communities of practice as a social theory of learning: A conversation with Etienne Wenger. *British Journal of Educational Studies*, 64(2), 139-160.
- Fenton-O'Creevy, M. (2001). Employee involvement and the middle manager: saboteur or scapegoat?. *Human Resource Management Journal*, 11(1), 24-40.
- Fenwick, T. (2007). Developing organizational practices of ecological sustainability: A learning perspective. *Leadership & Organization Development Journal*, 28(7): 632–645.
- Fenwick, T. (2008). Understanding relations of individual—collective learning in work: A review of research. *Management Learning*, 39(3), 227-243.
- Fernández, E., Junquera, B., & Ordiz, M. (2003). Organizational culture and human resources in the environmental issue: a review of the literature. *Journal of Human Resource Management*, 4(4), 634-656.
- Filstad, C., Simeonova, B., & Visser, M. (2018). Crossing power and knowledge boundaries in learning and knowledge sharing: the role of ESM. *The Learning Organization*, 25(3), 159-168.
- Fineman, S. (1997). Constructing the green manager. *British Journal of Management*, 8(1), 31-38.
- Fineman, S. (1999). Emotion and organizing. . *Studying organization: Theory and method*, 289-310.
- Fineman, S. (2009). *The emotional organization: Passions and power*. John Wiley & Sons.
- Fineman, S., & Clarke, K. (1996). Green stakeholders: Industry interpretations and response. *Journal of Management studies*, 33(6), 715-730.
- Fitzgerald, J. (2012). The Messy Politics of “Clean Coal” The Shaping of a Contested Term in Appalachia’s Energy Debate. *Organization & Environment*, 25(4), 437-451.
- Floor, J. (2018). *Knowledge uncertainties in nature conservation*. Wageningen University: (Doctoral dissertation, Wageningen University).
- Florea, L., Cheung, Y., & Herndon, N. (2013). For all good reasons: Role of values in organizational sustainability. *Journal of Business Ethics*, 114(3), 393-408.

- Fox, S. (1997). Situated learning theory versus traditional cognitive learning theory: why management education should not ignore management learning. *Systems practice*, 10(6), 727-747.
- Freeman, C., & Soete, L. (1997). *The economics of industrial innovation*. Psychology Press.
- Freidberg, S. (2004). The ethical complex of corporate food power. *Environment and Planning D: Society and Space*, 22(4), 513-531.
- Friedman, M. (1970). The social responsibility of business is to increase its profits. *The New York Times Magazine*, September 13, 1970.
- Fuller, A. (2013). *Critiquing theories of learning and communities of practice*. In Communities of practice (pp. 27-39). Routledge.
- Gao, J., & Bansal, P. (2013). Instrumental and integrative logics in business sustainability. *Journal of Business Ethics*, 112(2), 241-255.
- Garrety, K., Robertson, P., & Badham, R. (2004). Integrating communities of practice in technology development projects. *International Journal of Project Management*, 22(5), 351-358.
- Garud, R., Gehman, J., & Karunakaran, A. (2014). Boundaries, breaches, and bridges: The case of Climategate. *Research Policy*, 43(1), 60-73.
- Gatzweiler, F., & Hagedorn, K. (2002). The evolution of institutions in transition. *International Journal of Agricultural Resources, Governance and Ecology*, 2(1), 37-58.
- Gherardi, S. (2009). *Organizational knowledge: The texture of workplace learning*. John Wiley & Sons.
- Gherardi, S., Nicolini, D., & Odella, F. (1998). Toward a social understanding of how people learn in organizations: The notion of situated curriculum. *Management learning*, 29(3), 273-297.
- Gil, A., & Mataveli, M. (2017). Learning opportunities for group learning: An empirical assessment from the learning organization perspective. *Journal of Workplace Learning*, 29(1), 65-78.
- Gill, J., & Johnson, P. (2010). *Research methods for managers*. Sage.
- Gillham, B. (2000). *Case study research methods*. Bloomsbury Publishing.
- Gioia, D., Corley, K., & Hamilton, A. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15-31.
- Gladwin, T., Kennelly, J., & Krause, T. (1995). Shifting paradigms for sustainable development: Implications for management theory and

- research. *Academy of management Review*, 20(4), 874-907., 20(4), 874-907.
- Glanzer, P. (2005). Postsoviet moral education in Russia's state schools: God, country and controversy. *Religion, State and Society*, 33(3), 207-221.
- Glaser, B., & Strauss, A. (2009). *The discovery of grounded theory: Strategies for qualitative research*. Transaction Publishers.
- Gluch, P., Gustafsson, M., Thuvander, L., & Baumann H. (2014). Charting corporate greening: environmental management trends in Sweden. *Building Research & Information*, 42(3), 318-329.
- González-Benito, J., & González-Benito, Ó. (2006). A review of determinant factors of environmental proactivity. *Business Strategy and the environment*, 15(2), 87-102.
- Goodland, R. (1995). The concept of environmental sustainability. *Annual review of ecology and systematics*, 1-24.
- Gough, S., & Scott, W. (2003). *Sustainable development and learning: Framing the issues*. Routledge.
- Goulden, M., & Spence, A. (2015). Caught in the middle: The role of the Facilities Manager in organisational energy use. *Energy Policy*, 85, 280-287.
- Gouldson, A. (2008). Understanding business decision making on the environment. *Energy Policy*, 36(12), 4618-4620.
- Govindarajulu, N., & Daily, B. (2004). Motivating employees for environmental improvement. *Industrial management & data systems*, 104(4), 364-372.
- Gray, D. (2007). Facilitating management learning: Developing critical reflection through reflective tools. *Management learning*, 38(5), 495-517.
- Gregory, R., Ohlson, D., & Arvai, J. (2006). Deconstructing adaptive management: criteria for applications to environmental management. *Ecological Applications*, 16(6), 2411-2425.
- Gregory, W., & Romm, N. (2001). Critical facilitation: Learning through intervention in group processes. . *Management Learning*, 32(4), 453-467., 32(4), 453-467.
- Griskevicius, V., Tybur, J., & Van den Bergh, B. (2010). Going green to be seen: status, reputation, and conspicuous conservation. *Journal of personality and social psychology*, 98(3), 392.
- Gummesson, E. (2000). *Qualitative methods in management research*. Sage.

- Gupta, M., & Sharma, K. (1996). Environmental operations management: an opportunity for improvement. *Production and Inventory Management Journal*, 37(3), 40.
- Gupta, S., & Kumar, V. (2013). Sustainability as corporate culture of a brand for superior performance. *Journal of World Business*, 48(3), 311-320.
- Guthey, G., Whiteman, G., & Elmes, M. (2014). Place and sense of place: Implications for organizational studies of sustainability. *Journal of Management Inquiry*, 23(3), 254-265.
- Guy, S., Kashima, Y., Walker, I., & O'Neill, S. (2014). Investigating the effects of knowledge and ideology on climate change beliefs. *European Journal of Social Psychology*, 44(5), 421-429.
- Haas, P., Keohane, R., & Levy, M. (1993). *Institutions for the earth: sources of effective international environmental protection*. Mit Press.
- Hafenbrädl, S., & Waeger, D. (2016). Ideology and the Microfoundations of CSR: Why Executives Believe in the Business Case for CSR and how this Affects their CSR Engagements. *Academy of Management Journal*, amj-2014.
- Hahn, T., Figge, F., Pinkse, J., & Preuss, L. (2018). A paradox perspective on corporate sustainability: Descriptive, instrumental, and normative aspects. *Journal of Business Ethics*, 148(2), 235-248.
- Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2015). Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics*, 127(2), 297-316.
- Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2016). Ambidexterity for corporate social performance. *Organization Studies*, 37(2), 213-235.
- Hales, C. (2005). Rooted in supervision, branching into management: Continuity and change in the role of first-line manager. *Journal of Management Studies*, 42(3), 471-506.
- Halme, M. (2001). Learning for sustainable development in tourism networks. *Business strategy and the Environment*, 10(2), 100-114., 10(2), 100-114.
- Halme, M., Roome, N., & Dobers, P. (2009). Corporate responsibility: Reflections on context and consequences.
- Hammersley, M. (2017). What is ethnography? Can it survive? Should it? . . *Ethnography and Education*, 1-17.
- Hammersley, M., & Atkinson, P. (2007). *Ethnography: Principles in practice*. Routledge.

- Handley, K., Clark, T., Fincham, R., & Sturdy, A. (2007). Researching situated learning: Participation, identity and practices in client—consultant relationships. *Management Learning*, 38(2), 173-191.
- Hanna, M., Rocky Newman, W., & Johnson, P. (2000). Linking operational and environmental improvement through employee involvement. *Journal of Operations & Production Management*, 20(2), 148-165.
- Harris, L., & Crane, A. (2002). The greening of organizational culture: Management views on the depth, degree and diffusion of change. *Journal of organizational change management*, 15(3), 214-234.
- Harris, P. (2004). 'Getting rich is glorious': Environmental values in the People's Republic of China. *Environmental Values*, 13(2), 145-165.
- Harrison, J., MacGibbon, L., & Morton, M. (2001). Regimes of trustworthiness in qualitative research: The rigors of reciprocity. *Qualitative inquiry*, 7(3), 323-345.
- Harrison, M. (2002). Coercion, compliance, and the collapse of the Soviet command economy. *The Economic History Review*, 55(3), 397-433.
- Hart, S. (1995). A natural-resource-based view of the firm. *Academy of management review*, 20(4), 986-1014.
- Hart, S., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business strategy and the Environment*, 5(1), 30-37.
- Hart, S., & Dowell, G. (2010). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management*, 0149206310390219.
- Harter, J., Schmidt, F., & Hayes, T. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: a meta-analysis. *Journal of applied psychology*, 87(2), 268.
- Harvey, F., & Chrisman, N. (1998). Boundary objects and the social construction of GIS technology. *Environment and planning A*, 30(9), 1683-1694.
- Harvey, G., Loftus-Hills, A., Rycroft-Malone, J., Titchen, A., Kitson, A., McCormack, B., & Seers, K. (2002). Getting evidence into practice: the role and function of facilitation. *Journal of advanced nursing*, 37(6), 577-588.
- Havrylyshyn, O., & Van Rooden, R. (2003). Institutions matter in transition, but so do policies. *Comparative Economic Studies*, 45(1), 2-24.

- Hawkins, B., Pye, A., & Correia, F. (2017). Boundary objects, power, and learning: The matter of developing sustainable practice in organizations. *Management Learning*, 48(3), 292-310.
- Heath, Y., & Gifford, R. (2006). Free-market ideology and environmental degradation: The case of belief in global climate change. *Environment and behavior*, 38(1), 48-71.
- Heizmann, H., & Liu, H. (2017). Becoming green, becoming leaders: Identity narratives in sustainability leadership development. *Management Learning*, 1350507617725189.
- Henriques, I., & Sadorsky, P. (1999). The relationship between environmental commitment and managerial perceptions of stakeholder importance. *Academy of management Journal*, 42(1), 87-99.
- Heron, J. (1989). *The complete facilitator's handbook*. (pp. 7-18). London: Kogan Page.
- Heyden, M., Fourné, S., Koene, B., Werkman, R., & Ansari, S. (2017). Rethinking 'top-down' and 'bottom-up' roles of top and middle managers in organizational change: Implications for employee support. *Journal of Management Studies*, 54(7), 961-98.
- Hibbert, P., & Cunliffe, A. (2015). Responsible management: Engaging moral reflexive practice through threshold concepts. *Journal of business ethics*, 127(1), 177-188.
- Hibbert, P., Siedlok, F., & Beech, N. (2016). The role of interpretation in learning practices in the context of collaboration. *Academy of Management Learning & Education*, 15(1), 26-44.
- Hillary, R. (2004). Environmental management systems and the smaller enterprise. *Journal of cleaner production*, 12(6), 561-569., 12(6), 561-569.
- Hmelo-Silver, C., & Barrows, H. (2006). Goals and strategies of a problem-based learning facilitator. *Interdisciplinary journal of problem-based learning*, 1(1), 4.
- Hoffman, A. (1999). Institutional evolution and change: Environmentalism and the US chemical industry. *Academy of management journal*, 42(4), 351-371.
- Holford, W. (2016). Boundary constructions as knowledge flows within and between work groups. *Knowledge Management Research & Practice*, 14(1), 4-14.
- Holt, D. (2004). Managing the interface between suppliers and organizations for environmental responsibility—an exploration of current practices in the

- UK. *Corporate Social Responsibility and Environmental Management*, 11(2), 71-84.
- Hope-Hailey, V., Gratton, L., McGovern, P., Stiles, P., & Truss, C. (1997). A chameleon function? HRM in the '90s. *Human Resource Management Journal*, 7(3), 5-18.
- Howard-Grenville, J., Buckle, S., Hoskins, B., & George, G. (2014). Climate change and management. *Academy of Management Journal*, 57(3), 615-623.
- Huang, J., & Li, Y. (2017). Green innovation and performance: The view of organizational capability and social reciprocity. *Journal of Business Ethics*, 145(2), 309-324., 145(2), 309-324.
- Hui, I., Chan, A., & Pun, K. (2001). A study of the environmental management system implementation practices. *Journal of Cleaner Production*, 9(3), 269-276., 9(3), 269-276.
- Hultman, J., & Corvellec, H. (2012). The European Waste Hierarchy: from the sociomateriality of waste to a politics of consumption. *Environment and Planning A*, 44(10), 2413-2427.
- Hunt, S. (1994). On the Rhetoric of Qualitative Methods Toward Historically Informed Argumentation in Management Inquiry. *Journal of Management Inquiry*, 3(3), 221-234.
- Ioffe, G. (2004). Understanding Belarus: economy and political landscape. *Europe-Asia Studies*, 56(1), 85-118.
- Iraldo, F., Testa, F., & Frey, M. (2009). Is an environmental management system able to influence environmental and competitive performance? The case of the eco-management and audit scheme (EMAS) in the European Union. . *Journal of Cleaner Production*, 17(16).
- Iszatt-White, M., Kempster, S., & Carroll, B. (2017). An educator's perspective on reflexive pedagogy: Identity undoing and issues of power. *Management Learning*, 48(5), 582-596.
- Iverson, J., & McPhee, R. (2008). Communicating knowing through communities of practice: Exploring internal communicative processes and differences among CoPs. *Journal of Applied Communication Research*, 36(2), 176-199.
- Jabbar, M., & Abid, M. (2014). GHRM: Motivating Employees towards Organizational Environmental Performance. *Magnt. Res. Rep.*, 2, 267-278.

- Jabbour, C. (2011). How green are HRM practices, organizational culture, learning and teamwork? A Brazilian study. *Industrial and Commercial Training*, 43(2), 98-105.
- Jabbour, C. (2013). Environmental training in organisations: From a literature review to a framework for future research. *Resources, Conservation and Recycling*, 74, 144-155.
- Jabbour, C. (2015). Environmental training and environmental management maturity of Brazilian companies with ISO14001: empirical evidence. *Journal of Cleaner Production*, 96, 331-338.
- Jabbour, C., & Jabbour, A. (2016). Green human resource management and green supply chain management: Linking two emerging agendas. *Journal of Cleaner Production*, 112, 1824-1833.
- Jabbour, C., & Santos, F. (2008). The central role of human resource management in the search for sustainable organizations. *International Journal of Human Resource Management*, 19(12), 2133-2154.
- Jackson, S., & Seo, J. (2010). The greening of strategic HRM scholarship. *Organization Management Journal*, 7(4), 278-290.
- Jackson, S., Renwick, D., Jabbour, C., & Muller-Camen, M. (2011). State-of-the-art and future directions for green human resource management: introduction to the special issue. *Journal of Research in Human Resource Management*, 99-116.
- Jamali, D. (2006). Insights into triple bottom line integration from a learning organization perspective. *Business Process Management Journal*, 12(6), 809-821.
- Jarzabkowski, P., & Wilson, D. (2006). Actionable Strategy Knowledge:: A Practice Perspective. *European Management Journal*, 24(5), 348-367., 24(5), 348-367.
- Jenkins, H., & Yakovleva, N. (2006). Corporate social responsibility in the mining industry: Exploring trends in social and environmental disclosure. *Journal of cleaner production*, 14(3), 271-284.
- Jenkins, S., & Delbridge, R. (2013). Context matters: Examining 'soft' and 'hard' approaches to employee engagement in two workplaces. *The International Journal of Human Resource Management*, 24(14), 2670-2691.
- Jennings, P., & Zandbergen, P. (1995). Ecologically sustainable organizations: an institutional approach. *Academy of Management Review*, 20(4), 1015-1052.

- Jermier, J., & Forbes, L. (2003). Greening organizations: Critical issues. . *Studying management critically*, 157-176.
- Jiang, R., & Bansal, P. (2003). Seeing the need for ISO 14001. *Journal of Management Studies*, 40(4), 1047-1067.
- Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of management review*, 31(2), 386-408.
- Johnson, P., & Gill, J. (1997). *Research methods for Managers*.
- Johnson, P., Buehring, A., Cassell, C., & Symon, G. (2006). Evaluating qualitative management research: Towards a contingent criteriology. *International Journal of Management Reviews*, 8(3), 131-156.
- Jones, C., Parker, M., & Ten Bos, R. (2005). *For business ethics*. Routledge.
- Jones, O. (2006). Developing absorptive capacity in mature organizations: The change agent's role. . *Management Learning*, 37(3), 355-376.
- Joyner, B., & Payne, D. (2002). Evolution and implementation: A study of values, business ethics and corporate social responsibility. *Journal of Business Ethics*, 41(4), 297-311., 41(4), 297-311.
- Kabongo, J., & Boiral, O. (2017). Doing More with Less: Building Dynamic Capabilities for Eco-Efficiency. *Business Strategy and the Environment*, p.3.
- Kakavelakis, K., & Edwards, T. (2012). Situated learning theory and agentic orientation: A relational sociology approach. *Management Learning*, 43(5), 475-494.
- Kang, S., & Snell, S. (2009). Intellectual capital architectures and ambidextrous learning: a framework for human resource management. *Journal of Management Studies*, 46(1), 65-92.
- Kapil, P. (2015). Green HRM-Engaging Human Resource in reducing carbon footprint and enhancing environment sustainability: A case study based approach. *International Journal of Engineering Technology Science and Research*, 2, 5, 14.
- Kaplan, S., Milde, J., & Cowan, R. (2017). Symbiont practices in boundary spanning: Bridging the cognitive and political divides in interdisciplinary research. *Academy of Management Journal*, 60(4), 1387-1414.
- Karake, Z. (1998). An examination of the impact of organizational downsizing and discrimination activities on corporate social responsibility as measured by a company's reputation index. *Management Decision*, 36(3), 206-216.

- Karp, D., & Gaulding, C. (1995). Motivational underpinnings of command-and-control, market-based, and voluntarist environmental policies. *Human Relations*, 48(5), 439-465.
- Keegan, A., & Boselie, P. (2006). The lack of impact of dissensus inspired analysis on developments in the field of human resource management. *Journal of Management Studies*, 43(7), 1491-1511.
- Kehbila, A., Ertel, J., & Brent, A. (2010). Kehbila, A. G., ECorporate sustainability, ecological modernization and the policy process in the South African automotive industry. *Business Strategy and the Environment*, 19(7), 453-465.
- Kilroy, J., & Dundon, T. (2015). The multiple faces of front line managers: A preliminary examination of FLM styles and reciprocated employee outcomes. *Employee Relations*, 37(4), 410-427.
- Kim, B. (2009). *Chapter 6: Acculturation and Enculturation of Asian Americans*. In Alvin Alvarez and Nita Tewari (Eds.), *Asian American Psychology: Current Perspectives* (pp. 97-112). New York: Psychology.
- King, A., & Lenox, M. (2001). Lean and green? An empirical examination of the relationship between lean production and environmental performance. *Production and operations management*, 10(3), 244-256.
- King, N. (2004). *Using template analysis in the qualitative analysis of text. 2004) Essential guide to qualitative methods in organisational research*. Sage: London.
- Kirk, P., & Broussine, M. (2000). The politics of facilitation. . *Journal of Workplace Learning*, 12(1), 13-22.
- Kiron, D., Kruschwitz, N., Haanaes, K., & von Streng Velken, I. (2012). Sustainability Nears a Tipping Point. *MIT Sloan Management Review*, 53(2):69.
- Kislov, R., Humphreys, J., & Harvey, G. (2017). Kislov, R., HumphrHow do managerial techniques evolve over time? The distortion of "facilitation" in healthcare service improvement. *Public Management Review*, 19(8), 1165-1183.
- Klassen, R., & McLaughlin, C. (1996). The impact of environmental management on firm performance. *Management science*, 42(8), 1199-1214.
- Kluvánková-Oravská, T., Chobotová, V., Banaszak, I., Slavikova, L., & Trifunovova, S. (2009). From government to governance for biodiversity: the perspective of central and Eastern European transition countries. *Environmental Policy and Governance*, 19(3), 19(3).

- Kohlberg, L., & Mayer, R. (1972). Development as the aim of education. *Harvard educational review*, 42(4), 449-496. *Harvard educational review*, 42(4), 449-496.
- Kolk, A. (2008). Sustainability, accountability and corporate governance: exploring multinationals' reporting practices. *Business strategy and the environment*, 17(1), 1-15.
- Koskinen, K. (2005). Metaphoric boundary objects as co-ordinating mechanisms in the knowledge sharing of innovation processes. *European Journal of Innovation Management*, 8(3), 323-335.
- Kostova, T., & Roth, K. (2003). Social capital in multinational corporations and a micro-macro model of its formation. *Academy of Management Review*, 28(2), 297-317.
- Krasny, M., & Roth, W. (2010). Environmental education for social–ecological system resilience: A perspective from activity theory. *Environmental Education Research*, 16(5-6), 545-558.
- Kronenberg, J., & Bergier, T. (2012). Sustainable development in a transition economy: business case studies from Poland. *Journal of Cleaner Production*, 26, 18-27.
- Kulik, C., & Bainbridge, H. (2006). HR and the line: The distribution of HR activities in Australian organisations. *Asia Pacific Journal of Human Resources*, 44(2), 240-256.
- Kuznetsov, A., & Kuznetsova, O. (2005). Business culture in modern Russia: Deterrents and influences. *Problems and perspectives in management*, 2(2), 25-31.
- Kyrkilis, G., Chaloulakou, A., & Kassomenos, P. (2007). Development of an aggregate Air Quality Index for an urban Mediterranean agglomeration: Relation to potential health effects. *Environment International*, 33(5), 670-676.
- Lacy, P., Haines, A., & Hayward, R. (2012). Developing strategies and leaders to succeed in a new era of sustainability: findings and insights from the United Nations Global Compact-Accenture CEO study. *Journal of Management Development*, 31(4), 346-357.
- Lamm, E., Tosti-Kharas, J., & King, C. (2015). Empowering employee sustainability: Perceived organizational support toward the environment. *Journal of Business Ethics*, 128(1), 207-220.
- Larsen, H., & Brewster, C. (2003). Line management responsibility for HRM: what is happening in Europe? *Employee relations*, 25(3), 228-244.

- Laudal, T. (2011). Drivers and barriers of CSR and the size and internationalization of firms. *Social Responsibility Journal*, 7(2), 234-256.
- Lave, J. (1988). *Cognition in practice: Mind, mathematics and culture in everyday life*. Cambridge University Press.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge university press.
- LeCompte, M., Preissle, J., & Tesch, R. (1993). Analysis and interpretation of qualitative data. *Ethnography and qualitative design in educational research*, 2, 234-278.
- Lee, C. (2007). Boundary negotiating artifacts: Unbinding the routine of boundary objects and embracing chaos in collaborative work. *Computer Supported Cooperative Work (CSCW)*, 16(3), 307-339.
- Lee, T. (1999). *Using qualitative methods to organise research*. Newbury Park, CA:: Sage.
- Leshchenko, N. (2008). The National Ideology and the Basis of the Lukashenka Regime in Belarus. *Europe-Asia Studies*, 60(8), 1419-1433.
- Levina, N., & Vaast, E. (2005). The emergence of boundary spanning competence in practice: implications for implementation and use of information systems. *MIS quarterly*, 335-363.
- Lewin, A., Sakano, T., Stephens, C., & Victor, B. (1995). Corporate citizenship in Japan: Survey results from Japanese firms. *Journal of Business Ethics*, 14(2), 83-101., 14(2), 83-101.
- Lewis, J., & Ritchie, J. (2003). *Generalising from qualitative research*. Lewis, J., & Ritchie, J. (2003). Qualitative research practice: A guide for social science students and researchers: 263-286.
- Liebowitz, J. (2010). The role of HR in achieving a sustainability culture. *Journal of sustainable development*, 3(4), 50., 3(4), 50.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry (Vol. 75)*. Sage.
- Linnenluecke, M., & Griffiths, A. (2010). Corporate sustainability and organizational culture. *Journal of world business*, 45(4), 357-366.
- Liu, S., Jiang, K., Chen, J., Pan, J., & Lin, X. (2018). Linking employee boundary spanning behavior to task performance: the influence of informal leader emergence and group power distance. *The International Journal of Human Resource Management*, 29(12), .
- Lowenhardt, J. (2005). *Belarus and the West. Postcommunist Belarus*. (Rowman & Littlefield Publishers, Oxford), 143-160.

- MacNeil, C. (2001). The supervisor as a facilitator of informal learning in work teams. *Journal of workplace learning*, 13(6), 246-253.
- MacNeil, C. (2003). Line managers: facilitators of knowledge sharing in teams. *Employee Relations*, 25(3), 294-307.
- MacNeil, C. (2003). Line managers: facilitators of knowledge sharing in teams. *Employee Relations*, 25(3), 294-307.
- Madill, A., Jordan, A., & Shirley, C. (2000). Objectivity and reliability in qualitative analysis: Realist, contextualist and radical constructionist epistemologies. *British journal of psychology*, 91(1), 1-20.
- Madsen, M., & Noe, E. (2012). Communities of practice in participatory approaches to environmental regulation. Prerequisites for implementation of environmental knowledge in agricultural context. *Environmental science & policy*, 18, 25-33.
- Mahoney, J., & Chi, T., T. (2001). Business strategies in transition economies. *Academy of Management Review*, 26(2), 311-313.
- Maletič, M., Maletič, D., Dahlgard, J., Dahlgard-Park, S., & Gomišček, B. (2014). Maletič, M., Maletič, D., Dahlgard Sustainability exploration and sustainability exploitation: From a literature review towards a conceptual framework. *Journal of Cleaner Production*, 79, 182-194.
- Mandip, G. (2012). Green HRM: People management commitment to environmental sustainability. *Research Journal of Recent Sciences*, ISSN, 2277, 2502.
- Maon, F., Lindgreen, A., & Swaen, V. (2008). Thinking of the organization as a system: The role of managerial perceptions in developing a corporate social responsibility strategic agenda. *Systems Research and Behavioral Science*, 25(3), 413-426.
- Marimon, F., Llach, J., & Bernardo, M. (2011). Comparative analysis of diffusion of the ISO 14001 standard by sector of activity. *Journal of Cleaner Production*, 19(15), 1734-1744.
- Marples, D. (1999). *Belarus: a denationalized nation*. (Vol. 1). Taylor & Francis.
- Maslovskij, O., & Jaroshevich, J. (2006). *Экологические проблемы Беларуси*. Мн.: Технология.–2001.
- Masri, H., & Jaaron, A. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. *Journal of cleaner production*, 143, 474-489.
- Miles, M., & Huberman, A. (2002). Reflections and advice. *The qualitative researcher's companion*, 393-397.

- Ministry of Economics of Republic of Belarus. (4. December 2017). *Интегрированные структуры*. Von www.economy.gov.by/ru/integrirovannye_struktury-ru/ abgerufen
- Ministry of Foreign Affairs of Belarus. (13. July 2016). *Belarus Facts: Politics*. Von <http://belarusfacts.by/en/belarus/politics/> (accessed on 1 July 2015) abgerufen
- Ministry of Labour. (2017). Von <http://www.ohrana-truda.by/topic/2639-prikaz-o-proizvodstvennom-kontrolya-i-naznachen/> (accessed on 20 September 2018)
- Minpriroda. (1. January 2017). *НАЦИОНАЛЬНЫЙ ПЛАН действий по развитию "зеленой" экономики в Республике Беларусь до 2020 года*. Von <http://www.minpriroda.gov.by/ru/news-ru/view/natsionalnyj-plan-dejstvij-po-razvitiju-zelenoj-ekonomiki-v-respublike-belarus-do-2020-goda-1958/> (accessed on 20 September 2018)
- Mol, A., & Spaargaren, G. (2005). From additions and withdrawals to environmental flows: reframing debates in the environmental social sciences. *Organization & Environment*, 18(1), 91-107.
- Morrow, D., & Rondinelli, D. (2002). Adopting corporate environmental management systems:: Motivations and results of ISO 14001 and EMAS certification. *European management journal*, 20(2), 159-171.
- Morrow, J., & Mowatt, S. (2015). The Implementation of Authentic Sustainable Strategies: i-SITE Middle Managers, Employees and the Delivery of 100% Pure New Zealand. *Business Strategy and the Environment*, 24(7), 656-666.
- Muralidharan, P. (2016). Corporate social responsibility initiatives and employee perspectives in UAE. *Polish Journal of Management Studies*, 14(2), 172-181.
- Myers, M. (2013). *Qualitative research in business and management*. Sage.
- Neale, A. (1997). Organisational learning in contested environments: lessons from Brent Spar. *Business Strategy and the Environment*, 6(2), 93-103.
- Neij, L., Heiskanen, E., & Strupeit, L. (2017). The deployment of new energy technologies and the need for local learning. *Energy Policy*, 101, 274-283.
- Nicolini, D., Mengis, J., & Swan, J. (2012). Understanding the role of objects in cross-disciplinary collaboration. *Organization science*, 23(3), 612-629.
- Nikolayenko, O. (2008). Contextual effects on historical memory: Soviet nostalgia among post-Soviet adolescents. *Communist and Post-Communist Studies*, 41(2), 243-259.

- Nilsson, M. (2005). Learning, frames, and environmental policy integration: the case of Swedish energy policy. *Environment and Planning C: Government and Policy*, 23(2), 207-226.
- Norton, T., Zacher, H., Parker, S., & Ashkanasy, N. (2017). Bridging the gap between green behavioral intentions and employee green behavior: The role of green psychological climate. *Journal of Organizational Behavior*, 38(7), 996-1015.
- Nyame-Asiamah, F., & Patel, N. (2009). Research methods and methodologies for studying organisational learning.
- Oborn, E., & Dawson, S. (2010). Knowledge and practice in multidisciplinary teams: Struggle, accommodation and privilege. *Human Relations*, 63(12), 1835-1857.
- Ofori, D., & Hinson, R. (2007). Corporate social responsibility (CSR) perspectives of leading firms in Ghana. *Corporate Governance: The international journal of business in society*, 7(2), 178-193.
- Olsen, T., Glad, T., & Filstad, C. (2018). Learning to learn differently. *Journal of Workplace Learning*, 30(1), 18-31.
- Ones, D., & Dilchert, S. (2012). Employee green behaviors. In S. E. Jackson, D. S. Ones, & S. Dilchert (Eds.), *Managing human resources for environmental sustainability* (pp. 85-116). San Francisco: Jossey-Bass/Wiley.
- Onkila, T. (2015). Pride or embarrassment? Employees' emotions and corporate social responsibility. *Corporate Social Responsibility and Environmental Management*, 22(4), 222-236.
- Orsato, R., Ferraz de Campos, J., & Barakat, S. (2018). Social Learning for Anticipatory Adaptation to Climate Change: Evidence From a Community of Practice. *Organization & Environment*, 086026618775325.
- Oswick, C., & Robertson, M. (2009). Boundary objects reconsidered: from bridges and anchors to barricades and mazes. *Journal of Change Management*, 9(2), 179-193.
- Otto, I., Shkaruba, A., & Kireyeu, V. (2011). The rise of multilevel governance for biodiversity conservation in Belarus. *Environment and Planning C: Government and Policy*, 29(1), 113-132.
- Ovchinnikov, D. (26. November 2014). РАЦИОНАЛИЗИРУЙ ЭТО: ИСТОРИЯ РАЗВИТИЯ РАЦИОНАЛИЗАЦИИ С 1959 ПО 2014 ГОД. Von http://www.up-pro.ru/library/production_management/optimization/istoriya-rac.html (accessed on 20 September 2018)

- Oxford Dictionary. (2000). Oxford: Oxford university press.
- Pahl-Wostl, C., & Hare, M. (2004). Processes of social learning in integrated resources management. *Journal of Community & Applied Social Psychology*, 14(3), 193-206.
- Paillé, P., Chen, Y., Boiral, O., & Jin, J. (2014). The Impact of Human Resource Management on Environmental Performance: An Employee-Level Study. *Journal of Business Ethics*, 121:451–466.
- Paillé, P., Mejía-Morelos, J., Marché-Paillé, A., Chen, C., & Chen, Y. (2016). Corporate greening, exchange process among co-workers, and ethics of care: An empirical study on the determinants of pro-environmental behaviors at coworkers-level. *Journal of Business Ethics*, 136(3), 655-673.
- Paillé, P., Morelos, J., Raineri, N., & Stinglhamber, F. (2017). The Influence of the Immediate Manager on the Avoidance of Non-green Behaviors in the Workplace: A Three-Wave Moderated-Mediation Model. *Journal of Business Ethics*, 1-18.
- Панов, С. (2014). *История Беларуси*. Минск.: Аверсэв, 2014. - 144 с. Von www.zavtrasessiya.com/index.pl?act=PRODUCT&id=502 (accessed on 11 September 2018)
- Papalexandris, N., & Panayotopoulou, L. (2003). Creating synergies in HRM: The role of line managers. *EBS REVIEW*, 18. *EBS REVIEW*, 18.
- Patton, M. (2002). Two decades of developments in qualitative inquiry: A personal, experiential perspective. *Qualitative social work*, 1(3), 261-283.
- Pelling, M., High, C., Dearing, J., & Smith, D. (2008). Shadow spaces for social learning: a relational understanding of adaptive capacity to climate change within organisations. *Environment and Planning A*, 40(4), 867-884.
- Perez, O., Amichai-Hamburger, Y., & Shterental, T. (2009). The Dynamic of Corporate Self-Regulation: ISO 14001, Environmental Commitment, and Organizational Citizenship Behavior. *Law & Society Review*, 43(3), 593-630.
- Perriton, L. (2007). The personal becomes polemical? The problematic second generation of facilitative practice. *Management Learning*, 38(2), 155-171.
- Perry, E., & Kulik, C. (2008). Perry, E. The devolution of HR to the line: Implications for perceptions of people management effectiveness. *The International Journal of Human Resource Management*, 19(2), 262-273.

- Petts, J. (1998). Environmental responsiveness, individuals and organizational learning: SME experience. *Journal of environmental planning and management*, 41(6), 711-730.
- Piaget, J. (1972). Intellectual evolution from adolescence to adulthood. *Human development*, 15(1), 1-12.
- Pless, N., Maak, T., & Stahl, G. (2012). Promoting corporate social responsibility and sustainable development through management development: What can be learned from international service learning programs? *Human Resource Management*, 51(6), 873-9.
- Podbieryozkin, A. (2011). *National human capital: Ideology of russian socialism*. Moscow: Издательство "МГИМО-Университет".
- Pogoradze, A. (1990). Культура производства: сущность и факторы развития. *Наука. Суб. отд-ние*.
- Porter, M., & Kramer, M. (2006). The link between competitive advantage and corporate social responsibility. *Harvard business review*, 84(12), 78-92.
- Porter, M., & Van der Linder, C. (1995). Green and Competitiveness. *Harvard Business Review*.
- Porter, T., & Córdoba, J. (2009). Three views of systems theories and their implications for sustainability education. *Journal of Management Education*, 33(3), 323-347.
- Post, C., Rahman, N., & Rubow, E. (2011). Post, C., RahmanGreen governance: Boards of directors' composition and environmental corporate social responsibility. *Business & Society*, 50(1), 189-223.
- Prakash, A. (2000). *Greening the firm: the politics of corporate environmentalism*. Cambridge University Press.
- Prakash, A., & Potoski, M. (2014). Global private regimes, domestic public law: ISO 14001 and pollution reduction. *Comparative Political Studies*, 47(3), 369-394.
- Prasad, R. (2013). Green HRM-partner in sustainable competitive growth. *Journal of Management Sciences and Technology*, 1(1), 15-18.
- Preuss, L. (2005). Rhetoric and reality of corporate greening: a view from the supply chain management function. *Business Strategy and the Environment*, 14(2), 123-139.
- Pryde, P. (1991). *Environmental management in the Soviet Union (Vol. 4)*. CUP Archive.
- Psychogios, A., Antonacopoulou, E., Nyfoudi, M., Blakcori, F., & Szamosi, L. (2018, July). How does Feedback Matter to the Sustainability of

- Organizational Routines?. *In Academy of Management Proceedings*, (Vol. 2018, No. 1, p. 16801). Briarcliff Manor, NY 10510: Academy of Management.
- Purcell, J., & Hutchinson, S. (2007). Front-line managers as agents in the HRM-performance causal chain: theory, analysis and evidence. *Human Resource management journal*, 17(1), 3-20.
- Pyrko, I., Dörfler, V., & Eden, C. (2017). Thinking together: What makes Communities of Practice work?. *Human Relations*, 70(4), 389-409.
- Ramus, C. (2001). Organizational support for employees: Encouraging creative ideas for environmental sustainability. *California management review*, 43(3), 85-105.
- Ramus, C., & Montiel, I. (2005). When are corporate environmental policies a form of greenwashing?. *Business & Society*, 44(4), 377-414.
- Ramus, C., & Steger, U. (2000). The Roles of Supervisory Support Behaviors and Environmental Policy in Employee "Ecoinitiatives" at Leading-Edge European Companies. *Academy of Management journal*, 43(4), 605-626.
- Rapoport, R. (1970). Three dilemmas in action research: with special reference to the Tavistock experience. *Human relations*, 23(6), 499-513.
- Räsänen, K., Meriläinen, S., & Lovio, R. (1994). Pioneering descriptions of corporate greening: Notes and doubts on the emerging discussion. *Business strategy and the Environment*, 3(4), 9-16.
- Rayner, J., & Morgan, D. (2018). An empirical study of 'green' workplace behaviours: ability, motivation and opportunity. *Asia Pacific Journal of Human Resources*, 56(1), 56-78.
- Reed, M., & Abernethy, P. (2018). Facilitating Co-Production of Transdisciplinary Knowledge for Sustainability: Working with Canadian Biosphere Reserve Practitioners. *Society & natural resources*, 31(1), 39-56.
- Reed, M., Godmaire, H., Abernethy, P., & Guertin, M. (2014). Building a community of practice for sustainability: strengthening learning and collective action of Canadian biosphere reserves through a national partnership. *Journal of environmental management*, 145, 230-239.
- Rees, C., & Miazhevich, G. (2009). Socio-cultural change and business ethics in post-Soviet countries: The cases of Belarus and Estonia. *Journal of Business Ethics*, 86(1), 51-63.
- REESTER. (2018). *Belpartner Catalog*. Von <http://www.belpartner.by/catalog/category/15-khimicheskaya-promyshlennost.html> (accessed on 20 September 2018)

- Remmen, A., & Lorentzen, B. (2000). Employee participation and cleaner technology: learning processes in environmental teams. *Journal of Cleaner Production*, 8(5), 365-373., 8(5), 365-373.
- Renwick, D. (2016). *Line managers*. In Encyclopedia of Human Resource Management. Edward Elgar Publishing Limited.
- Renwick, D., Redman, T., & Maguire, S. (2013). Green human resource management: a review and research agenda. *International Journal of Management Reviews*, 15(1), 1-14.
- Resnick, L., Siegel, A., & Kresh, E. (1971). Transfer and sequence in learning double classification skills. *Journal of Experimental Child Psychology*, 11(1), 139-149.
- Rice, L. (2011). Black-box sustainability. *Journal of Sustainable Development*, 4(4), 32.
- Rice, P., & Ezzy, D. (1999). *Qualitative research methods: A health focus*. Melbourne, Australia.
- Richter, A., West, M., Van Dick, R., & Dawson, J. (2006). Boundary spanners' identification, intergroup contact, and effective intergroup relations. *Academy of Management Journal*, 49(6), 1252-1269., 49(6), 1252-1269.
- Roberts, J. (2006). Limits to communities of practice. *Journal of management studies*, 43(3), 623-639.
- Robertson, J., & Barling, J. (2013). Greening organizations through leaders' influence on employees' pro-environmental behaviors. *Journal of Organizational Behavior*, 34, 176-194.
- Robinson, S., & Kerr, R. (2009). The symbolic violence of leadership: A critical hermeneutic study of leadership and succession in a British organization in the post-Soviet context. *Human Relations*, 62(6), 875-903., 62(6), 875-903.
- Rogers, C. (1985). Toward a more human science of the person. *Journal of Humanistic Psychology*. *Journal of Humanistic Psychology*, 25(4), 7-24.
- Rojon, C., & Saunders, M. (2012). Formulating a convincing rationale for a research study. *Coaching: An International Journal of Theory, Research and Practice*, 5(1), 55-61.
- Roome, N. (1992). Developing environmental management strategies. *Business strategy and the environment*, 1(1), 11-24.
- Rothenberg, S. (2003). Knowledge content and worker participation in environmental management at NUMMI. *Journal of Management Studies*, 40(7), 1783-1802.

- Rousseau, D., & Fried, Y. (2001). Location, location, location: Contextualizing organizational research. *Journal of organizational behavior*, 22(1), 1-13.
- Roy, M., & Khastagir, D. (2016). Exploring role of green management in enhancing organizational efficiency in petro-chemical industry in India. *Journal of Cleaner Production*, 121, 109-115.
- Russell, S., & Griffiths, A. (2008). The role of emotions in driving workplace pro-environmental behaviors. *Research on emotion in organizations*, 4, 83-107.
- Sahlas, P., & Chastenay, C. (1998). Russian legal education: post-communist stagnation or revival?. *Journal of Legal Education*, 48(2), 194-215.
- Sangle, S. (2010). Empirical analysis of determinants of adoption of proactive environmental strategies in India. *Business Strategy and the Environment*, 19(1), 51-63.
- Sarkis, J., Gonzalez-Torre, P., & Adenso-Diaz, B. (2010). Stakeholder pressure and the adoption of environmental practices: The mediating effect of training. *Journal of Operations Management*, 28(2), 163-176.
- Savin-Baden, M., & Wimpenny, K. (2007). Exploring and implementing participatory action research. *Journal of Geography in Higher Education*, 31(2), 331-343.
- Schad, J., Lewis, M., Raisch, S., & Smith, W. (2016). Paradox research in management science: Looking back to move forward. *The Academy of Management Annals*, 10(1), 5-64.
- Schaefer, A. (2007). Contrasting Institutional and Performance Accounts of Environmental Management Systems: Three Case Studies in the UK Water & Sewerage Industry. *Journal of Management Studies*, 44(4), 506-535.
- Schaefer, A., & Harvey, B. (1998). Stage models of corporate 'greening': A critical evaluation. *Business Strategy and The Environment*, 7, 109-123.
- Schaefer, A., & Harvey, B. (2000). Environmental knowledge and the adoption of ready made environmental management solutions. *Social-Responsibility and Environmental Management*, 7(2), 74.
- Schaefer, A., & Harvey, B. (2002). Agents is change in corporate greening: Case studies in water and electricity utilities. In S. Fineman, *The business of greening*. Routledge. (S. pp. 169-187). Routledge.
- Schaefer, A., Coulson, A., Green, K., New, S., & Skea, J. (2003). Sustainable business organizations? *Negotiating environmental change: new perspectives from social science*, 209-230.

- Schaltegger, S., & Burritt, R. (2018). Business cases and corporate engagement with sustainability: Differentiating ethical motivations. *Journal of Business Ethics*, 147(2), 241-259.
- Schot, J. (1992). Credibility and markets as greening forces for the chemical industry. *Business Strategy and the Environment*, 1(1), 35-44.
- Schotter, A., Mudambi, R., Doz, Y., & Gaur, A. (2017). Boundary spanning in global organizations. *Journal of Management Studies*, 54(4), 403-421.
- Sergeeva, A., & Andreeva, T. (2016). Knowledge sharing research: bringing context back in. *Journal of Management Inquiry*, 25(3), 240-261.
- Shalley, C., & Gilson, L. (2017). Creativity and the management of technology: Balancing creativity and standardization. *Production and Operations Management*, 26(4), 605-616.
- Sharma, E., & Tewari, R. (2017). Sharma Engaging Employee Perception for Effective Corporate Social Responsibility: Role of Human Resource Professionals. *Global Business Review*, 0972150917713277.
- Sharma, S. (2000). Managerial interpretations and organizational context as predictors of corporate choice of environmental strategy. *Academy of Management Journal*, 43(4), 681-697.
- Sharma, S., & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal*, 729-753.
- Sharma, S., Aragón-Correa, J., & Rueda-Manzanares, A. (2007). The contingent influence of organizational capabilities on proactive environmental strategy in the service sector: An analysis of North American and European ski resorts. *Canadian Journal of*.
- Shrivastava, P. (1994). Castrated environment: Greening organizational studies. *Organization Studies*, 15(5), 705-726.
- Shrivastava, P., & Hart, S. (1992). Greening organizations. *Academy of Management*, 52, 185-189.
- Shrivastava, P., & Kennelly, J. (2013). Sustainability and place-based enterprise. *Organization & Environment*, 26(1), 83-101.
- Sidarenko, V. (2008). Материалы к уроку № 46. .
- Smolović Jones, O., Grint, K., & Cammock, P. (2015). Public leadership development facilitation and the crossroads blues. *Management Learning*, 46(4), 391-411.
- Sobel, D. (1996). Beyond ecophobia. *Great Barrington, MA: Orion Society*.

- Solomon, M., Bamossy, G., Askegaard, S., & Hogg, M. (2006). Customer behavior. *A European Perspective*.
- Sorokivska, O., Melnik, L., & Mosij, O. (2017). Environmentally responsible business: the introduction of the European experience in Ukraine. *Journal of International Business Studies*, 48(9 (2)), 1539-1547.
- Soulsby, A., & Clark, E. (2007). Organization theory and the post-socialist transformation: Contributions to organizational knowledge.. *Human Relations*, 60(10), 1419-1442.
- Spaargaren, G., & Mol, A. (1992). Sociology, environment, and modernity: Ecological modernization as a theory of social change. *Society & natural resources*, 5(4), 323-344., 5(4), 323-344.
- Spanjol, J., Tam, L., & Tam, V. (2015). Employer–employee congruence in environmental values: An exploration of effects on job satisfaction and creativity. *Journal of Business Ethics*, 130(1), 117-130.
- Spradley, J. (2016). *The ethnographic interview*. Waveland Press.
- Stake, R. (1995). *The art of case study research*. Sage.
- Stake, R. (2006). *Multiple case study analysis*. New York: The Guilford Press.
- Stake, R. (2015). *Multiple case study analysis*. Guilford Press.
- Star. (2010). This is not a boundary object: Reflections on the origin of a concept. *Technology, & Human Values*, 35(5), 601-617.
- Star, S., & Griesemer, J. (1989). Institutional ecology, translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social studies of science*, 19(3), 387-420.
- Starik, M., & Rands, G. (1995). Weaving an integrated web: Multilevel and multisystem perspectives of ecologically sustainable organizations. *Academy of Management Review*, 20(4), 908-935.
- Stevens, P., Batty, W., Longhurst, P., & Drew, G. (2012). A critical review of classification of organisations in relation to the voluntary implementation of environmental management systems. *Journal of environmental management*, 113, 206-212., 113, 206-212.
- Steyaert, P., & Jiggins, J. (2007). Governance of complex environmental situations through social learning: a synthesis of SLIM's lessons for research, policy and practice. *Environmental science & policy*., 10(6), 575-586.
- Storey, J. (1992). *Developments in the management of human resources: an analytical review*. Blackwell.

- Strauss, K., Lepoutre, J., & Wood, G. (2017). Fifty shades of green: How microfoundations of sustainability dynamic capabilities vary across organizational contexts. *Journal of Organizational Behavior*.
- Suchman, L. (2005). Affiliative objects. *Organization*, 12(3), 379-399.
- Swan, J., Scarbrough, H., & Robertson, M. (2002). The construction of Communities of Practice in the management of innovation. *Management learning*, 33(4), 477-496., 33(4), 477-496.
- Tam, S., & Gray, D. (2016). Organisational learning and the organisational life cycle: the differential aspects of an integrated relationship in SMEs. *European Journal of Training and Development*, 40(1), 2-20.
- Tang, G., Chen, Y., Jiang, Y., Paillé, P., & Jia, J. (2018). Green human resource management practices: scale development and validity. *Asia Pacific Journal of Human Resources*, 56(1), 31-55.
- Taylor, A., Cocklin, C., & Brown, R. (2012). Fostering environmental champions: A process to build their capacity to drive change. *Journal of environmental management*, 98, 84-97.
- Temple, B., & Young, A. (2004). Qualitative research and translation dilemmas. *Qualitative research*, 4(2), 161-178.
- The Guardian / BelarusFeed. (28. September 2016). *WHO: Belarus in top 3 countries with highest air pollution death rate*. Von UDF.BY: <https://udf.by/english/main-story/146047-who-belarus-in-top-3-countries-with-highest-air-pollution-death-rate.html> (accessed on 5 September 2018)
- The Guardian. (23. November 2017). *The Guardian*. Von The COP23 climate change summit in Bonn and why it matters: <https://www.theguardian.com/environment/2017/nov/05/the-cop23-climate-change-summit-in-bonn-and-why-it-matters> (accessed on 5 September 2018)
- Tippmann, E., Sharkey Scott, P., & Parker, A. (2017). Boundary capabilities in MNCs: Knowledge transformation for creative solution development. *Journal of Management Studies*, 54(4), 455-482.
- Titarenko, L. (2007). Post-soviet national identity: Belarusian approaches and paradoxes. *Filosofija, Sociologija*, (4).
- Tochitzkaja, I. (2012). *Последствия вступления России в ВТО для торговли Беларуси и ее отраслей*. Исслед. центр ИПМ.
- Tranter, B., & Lester, L. (2015). Climate patriots? Concern over climate change and other environmental issues in Australia. *Public Understanding of Science*, 0963662515618553.

- Treviño, L., & Weaver, G. (2003). *Managing ethics in business organizations: Social scientific perspective*. Stanford University Press.
- Turnhout, E. (2009). The effectiveness of boundary objects: the case of ecological indicators. *Science and Public Policy*, 36(5), 403-412., 36(5), 403-412.
- Tushman, M., & Scanlan, T. (1981). Boundary spanning individuals: Their role in information transfer and their antecedents. *Academy of management journal*, 24(2), 289-305., 24(2), 289-305.
- UN. (2017). World Economic Situation and Prospects 2017. available at https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/2017wesp_full_en.pdf. (accessed on 1 September 2018)
- UNDP. (2015). *Human Development Report 2015*. available at http://hdr.undp.org/sites/all/themes/hdr_theme/country-notes/BLR.pdf: United Nations Development Programme. (accessed on 1 September 2018)
- UNITER. (2017). Химия и Нефтехимия. available at: <http://reestr.by/vse.html?catid=157>, <http://investinbelarus.by/docs/-22052.pdf>. (accessed on 3 September 2018)
- Unsworth, K., Dmitrieva, A., & Adriasola, E. (2013). Changing behaviour: Increasing the effectiveness of workplace interventions in creating pro-environmental behaviour change. *Journal of Organizational Behavior*, 34(2), 211-229.
- Vadalazhskaya, T., & Matskevich, U. (2009). *The Quality and way of lie in Belarus: evolution and possibility of transformation*.
- Valentin, C. (2015). Greening HRD: Conceptualizing the Triple Bottom Line for HRD Practice, Teaching, and Research. *Advances in Developing Human Resources*, 17(4), 426-441.
- Valentine, S., & Fleischman, G. (2008). Ethics programs, perceived corporate social responsibility and job satisfaction. *Journal of business ethics*, 77(2), 159-172., 77(2), 159-172.
- Van der Byl, C., & Slawinski, N. (2015). Embracing tensions in corporate sustainability: A review of research from win-wins and trade-offs to paradoxes and beyond. *Organization & Environment*, 28(1), 54-79.
- Vare, P., & Scott, W. (2007). Learning for a change: Exploring the relationship between education and sustainable development. *Journal of Education for Sustainable Development*, 1(2), 191-198.

- Verbitskaya, L., Nosova, N., & Rodina, L. (2002). Sustainable development in higher education in Russia: the case of St Petersburg State University. *International Journal of Sustainability in Higher Education*, 3(3), 279-288.
- Vidal-Salazar, M., Cordón-Pozo, E., & Ferrón-Vilchez, V. (2012). Human resource management and developing proactive environmental strategies: the influence of environmental training and organizational learning. *Human Resource Management*, 51(6), 905-934.
- Vinck, D., & Jeantet, A. (1995). VincMediating and commissioning objects in the sociotechnical process of product design: a conceptual approach.
- Wagner, M. (2008). Empirical influence of environmental management on innovation: evidence from Europe. *Ecological Economics*, 66(2-3), 392-402.
- Wang, C., & Chugh, H. (2014). Entrepreneurial learning: past research and future challenges. *International Journal of Management Reviews*, 16(1), 24-61.
- Wang, J., & Jia, S. (2015). The Contemporary Value of Patriotism. *Advances in Applied Sociology*, 5(05), 161.
- Weeks, A., Swerissen, H., & Belfrage, J. (2007). Issues, challenges, and solutions in translating study instruments. *Evaluation Review*, 31(2), 153-165.
- Weißenburger, U. (1994). Environmental problems in Belarus. *Economic Bulletin*, 31(11), 17-24.
- Weller, A. (2017). Aligning responsible business practices: A case study. *Business Ethics: A European Review*, 26(4), 457-467.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge university press.
- Wenger, E. (2000). Communities of practice and social learning systems. *Organization*, 7(2), 225-246.
- Wenger, E. (2010). Communities of practice and social learning systems: the career of a concept. In *Social learning systems and communities of practice*, (pp. 179-198). Springer, London.
- Wenger, E., McDermott, R., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Harvard Business Press.
- Wenger-Trayner, E., & Wenger-Trayner, B. (2014). *Learning in a landscape of practice: A framework*. In *Learning in landscapes of practice*. (pp. 27-44). Routledge.

- Werbel, J., & DeMarie, S. (2005). Aligning strategic human resource management and person–environment fit. *Human Resource Management Review*, 15(4), 247-262.
- Whyte, W. (1991). *Participatory action research*. Sage Publications, Inc.
- Willis, B. (2014). The advantages and limitations of single case study analysis. *E-International Relations Students*.
- Winn, M., & Angell, L. (2000). Towards a process model of corporate greening. *Organization Studies*, 21(6), 1119-1147.
- Wittneben, B., Okereke, C., Banerjee, S., & Levy, D. (2012). Climate change and the emergence of new organizational landscapes. *Organization Studies*, 33(11), 1431-1450.
- Wittrock, M. (1974). Learning as a generative process. *Educational psychologist*, 11(2), 87-95.
- Wong, S., & Sharp, L. (2009). Making power explicit in sustainable water innovation: re-linking subjectivity, institution and structure through environmental citizenship. *Environmental Politics*, 18(1), 37-57., 18(1), 37-57.
- Worthington, I. (2012). *Greening Business: Research, Theory, and Practice*. Oxford University Press.
- Wright, C., & Nyberg, D. (2017). An inconvenient truth: How organizations translate climate change into business as usual. *Academy of Management Journal*, 60(5), 1633-1661.
- Yakura, E. (2002). Charting time: Timelines as temporal boundary objects. *Academy of Management journal*, 45(5), 956-970.
- Yele. (2018). *The Environmental Performance Index*. available at <https://epi.envirocenter.yale.edu/downloads/epi2018policymakerssummaryv01.pdf>: Yele. (accessed on 2 August 2018)
- Yin, R. (1989). *Case study research: Design and methods*. Newbury Park. Cal.: Sage.
- Young, R. (2010). The greening of Chicago: Environmental leaders and organisational learning in the transition toward a sustainable metropolitan region. *Journal of environmental planning and management*, 53(8), 1051-1068.
- Zaharchenko, T. (1990). Environmental Policy in the Soviet Union. *Environs: Evtl. L. & Policy*, 14, 3.
- Zainal, Z. (2007). Case study as a research method. *Jurnal Kemanusiaan*, (9), 1-6.

Zashev, P. (2006). Belarus as a business opportunity. P. *Pan-European Institute*, (3).

Ziegler, A., & Nogareda, J. (2009). Environmental management systems and technological environmental innovations: Exploring the causal relationship. *Research Policy*, 38(5), 885-893., 38(5), 885-893.

Zinoviev, A. (1983). *Homo sovieticus*. L'Age d'Homme.

Zoogah, D. (2011). The dynamics of Green HRM behaviors: A cognitive social information processing approach. *German Journal of Human Resource Management*, 25(2), 117-139.

APPENDICES

Appendix-I: Human Research Ethics Committee (HREC) Approval Letter



From Dr Louise Westmarland
Chair, The Open University Human Research Ethics Committee
Email louise.westmarland@open.ac.uk
Extension 01908 652462

To Olga Andrianova, FBL

The Open University

Project title Employee Engagement in Corporate Greening: A Study of Belarusian and British Companies

Memorandum

HREC Ref HREC/2015/2103/Andrianova
AMS ref
Submitted 09/10/15
Decision date 14/12/15

This memorandum is to confirm that the research protocol for the above-named research project, as submitted for ethics review, has been given a favourable opinion by the Open University Human Research Ethics Committee (HREC).

Please note the following:

1. You are responsible for notifying the HREC immediately of any information received by you, or of which you become aware which would cast doubt on, or alter, any information contained in the original application, or a later amendment which would raise questions about the safety and/or continued conduct of the research.
2. It is essential that any proposed amendments to the research are sent to the HREC for review, so they can be recorded and a favourable opinion given prior to the any changes being implemented (except only in cases of emergency when the welfare of the participant or researcher is may be effected).
3. You are authorised to present this memorandum to outside bodies such as NHS Research Ethics Committees in support of any application for future research clearance. Also, where there is an external ethics review, a copy of the application and outcome should be sent to the HREC.
4. OU research ethics review procedures are fully compliant with the majority of grant awarding bodies and their frameworks for research ethics.
5. At the conclusion of your project, by the date stated in your application, you are required to provide the Committee with a final report to reflect how the project has progressed, and importantly whether any ethics issues arose and how they were dealt with. A copy of the final report template can be found on the research ethics website - <http://www.open.ac.uk/research/ethics/human-research/human-research-ethics-full-review-process-and-proforma#final-report>.

Kind regards,

Dr Louise Westmarland
Chair OU HREC

The Open University is incorporated by Royal Charter (number RC 000391), an exempt charity in England & Wales and a charity registered in Scotland (number SC 038302)

Appendix-II: Interview Guide

Project:	Employee Engagement in Corporate Greening
Interviewer:	Olga Andrianova, Email: O.Andrianova@open.ac.uk (http://www.open.ac.uk/business-school/people/olga-andrianova) Contact details in Belarus: +375 (29) 78 15 765
University:	The Open University (Открытый Университет), PO Box 75, Walton Hall, Milton Keynes, United Kingdom, MK7 6AL, Tel +44 (0) 1908 655 050, http://www.open.ac.uk/business-school/
Interviewee:	Name
Position:	Position of the Interviewee
Date:	

Introduction

Thank you very much for agreeing to talk with me about employee engagement in corporate greening [examples of environmental activities] in your company. My name is Olga Andrianova. I have been working for the Open University [for Belarusian version: which is a known British University.]

This interview is part of my research project named “Employee Engagement in Corporate Greening.” This research study is to explore the views of employees about their engagement or difficulties in corporate greening and how you as a front-line manager facilitate learning for corporate greening in your plant. The duration of each interview is expected to last approximately 45 to 60 minutes.

Consent form

Before we start may I inform you that the research project is conducted in accordance with the Open University’s Ethics Principles for Research involving Human Participants (Nr. HREC/2015/2103/Andrianova). Among others, these principles state that any data on individuals will only be collected with the informed consent of participants (which can be withdrawn at any stage), that the researcher will at all times be open and honest about the purpose of the research, and that data that participants consider to be confidential will be treated as such

by the researcher. I will use any data collected only for the purpose of academic research. Do you have any question you would like to ask? [Answering the questions and signing the consent form]

Questions for interviewee

The interview consists of 10 questions and will last approximately 45 – 60 minutes. The questions are structured in five categories.

<p>1. General information about the participant</p> <ul style="list-style-type: none"> • 1-1 What is your job/responsibility? • 1-2 How long have you worked here? What did you do before this job? • 1-3 Who supervises you, and whom do you supervise? • 1-4 What is your educational background?
<p>2. Corporate greening (environmental protection) in your work</p> <ul style="list-style-type: none"> • 2-1 What is your understanding of pressing environmental issues, how do these relate to the company and to your work? • 2-2- Could you please tell me which environmental issues of your company you are familiar with? • 2-3 How important are environmental practices for the company's business? Your role?
<p>3. Learning environment for corporate greening (environmental protection), actors, and collaborations</p> <ul style="list-style-type: none"> • 3-1 What is your role in implementing environmental practices in your work place? • 3-2 How would an observer like me be able to see your personal involvement in environmental issues at your work place? What does it look like? • 3-3 Can you give an example of your 'green' practices? How was it initiated, and perhaps implemented? • 3-4 Do you think that the culture of ecology exists in the enterprise? Could you describe the culture?
<p>4. Contradictions within the learning process</p> <ul style="list-style-type: none"> • 4-1 What difficulties have you faced/experienced during your work for environmental protection in comparison to the past? • 4-2 How well informed or knowledgeable are people? • 4-3 How challenging did you find your role in the implementation of the initiative?
<p>5. Learning approaches and practice for corporate greening</p> <ul style="list-style-type: none"> • 5-1 What helped you to overcome these difficulties?

- 5-2 What would help you to overcome these difficulties?
- 5-3 How necessary was and is co-operation in your work?
- 5-4 How did you select people for collaboration in your team? And how do you choose the people to help? Are they volunteers?
- 5-5 What mechanisms develop the spirit of engagement in environmental aspects and how?
- 5-6 Were you able to get a consultation with someone?
- 5-7 How was the contribution within the team rewarded? How did people contribute to the overall result or initiative?
- 5-8 How do you know that you achieved an environmental impact? How do you evaluate the final result of your initiative?

Thank you for your participation in the interview!

Appendix-III: Consent Form

**Employee Engagement in Corporate Greening:
A Study of Front-Line Managers in
Belarusian Chemical Plants**

Consent Form

This study is conducted in accordance with the Data Protection and Freedom of Information Act (UK), The Open University Code of Practice for Research and Those Conducting Research, the Ethics Principles for Research involving Human Participants, and the Economic and Social Research Council’s Framework for Research Ethics. The project is registered under HREC/2015/2103/Andrianova (Tel. 0044 01908 654858, Research-REC-Review@open.ac.uk).

Thus, this research maintains data protection and confidentiality strictly in accordance with the guidelines detailed herewith. The results of the data will be disseminated in the form of dissertation report and, used for publication in academic journals.

	Yes	No
<i>Please tick the appropriate boxes</i>		
Taking Part		
I have read and understood the study information and project details.	<input type="checkbox"/>	<input type="checkbox"/>
I have been given the opportunity to ask questions about the project, the details of which have been explained to me.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that taking part in the project will also include being interviewed and audio-recorded. I consent to the researcher using the results in the form of dissertation report and, used for publication in academic journals.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that my taking part is voluntary; I can withdraw from the study at any time and I do not have to give any reasons for why I no longer want to take part.	<input type="checkbox"/>	<input type="checkbox"/>

Use of the information I provide for this project only

I understand that the confidentiality of the information I provide will be safeguarded subject to any legal requirements.

I understand that my personal details such as phone number, email and postal address will not be revealed to people outside the project.

I understand and agree that my data (words and visual images) may be quoted and reproduced in publications, reports, and other research outputs.

I agree that my audio data can be used as described above in a form in which I may be identifiable.

*Please choose **one** of the following two options:*

I would like my real name used in the above

I would **not** like my real name to be used in the above.

Please inform us about what the information can we use

I release to The Open University the right to use, at their discretion, the material in print or digital form within the above context for the research purpose.

I agree that the materials may be used for other non-commercial purposes at the discretion of Open University.

Should commercial exploitation of the materials be considered at a later stage your permission will be sought.

Name of participant [printed]	Signature	Date
-------------------------------	-----------	------

Contact details for further information:

The researcher of this research project is Olga Andrianova, Open University. For queries relating to the video diary study, please contact:

Olga Andrianova
Open University Business School,
The Open University,
Walton Hall,
Milton Keynes, MK7 6AA
E: olga.andrianova@open.ac.uk

Appendix-IV: List of Participants

#	Code	Role	Number of people supervised	Is the person authorised for the protection of the environmental management system?	Is the person authorised for innovation and rationalisation proposals?
CASE A					
1	A-1	Head of the Department of Environmental Protection	4	yes	-
2	A-2	Leading Specialist of the Department for of Industrial Property and Rationalisation	2	-	-
4	A-3	Deputy Head of the Repair-Mechanical Production	30	yes	-
5	A-4	Shift Head of Mechanical-Repair Production	12	yes	-
6	A-5	Superintendent of the Assembly and Welding Shop	6	-	-
7	A-6	Deputy Head of Production Department	23	yes	-
8	A-7	Engineer-technologist	4	-	-
9	A-8	Master of Chemical-Spinning Finishing Production	12	yes	Yes
10	A-9	Engineer of the Operating and technical department	3	yes	-
11	A-10	Leading Engineer of the Production Department	5	yes	-
12	A-11	Technologist of Chemical fibre	2	-	-
13	A-12	Deputy Chief of production	34	yes	-
14	A-13	Lead Engineer -Technologist	8	-	-
15	A-14	Head of the Central Laboratory of Industrial Hygiene and Environmental Monitoring.	6	yes	-
16	A-15	Deputy Chief of the Chemical Department of Organic Synthesis Plant	13	yes	-
17	A-16	Deputy Chief Workshops DMT-4	21	yes	-
18	A-17	Engineer -Technologist	12	yes	-
19	A-18	Deputy Chief for the production of dimethyl terephthalate	10	yes	-
20	A-19	Operator for absorption process	3	yes	-
21	A-20	Deputy Chief of Workshop and the shift supervisor	8	yes	yes
23	A-21	Head of the technology department	4	yes	-
24	A-22	Engineer technologist of the technology department	6	yes	-
25	A-23	Lead Engineer of operational dispatching department	8	yes	-
26	A-24	Section chief of generation of carbon disulphide and sulfuric area	10	yes	-

27	A-25	Project manager for administrative matters of the head	1	yes	-
26	A-26	Master of workshop fibre	2	yes	-
		CASE B			
27	B-1	Head of the Department of Environmental Protection for corporate matters	4	yes	-
28	B-2	Head of the Office of Environmental Protection	2	yes	-
29	B-3	Deputy of Head of the Cord Fabrics production	45	yes	-
30	B-4	Engineer on the scientific and technical information, rationalisation and inventive technical department	9	yes	-
31	B-5	Deputy Head of polyamide production	17	yes	-
32	B-6	Head of facility area and processing of impregnation of decay	11	yes	-
33	B-7	Deputy of Laboratory for Environmental Measurement	3	yes	-
34	B-8	Deputy Head of the service business automation	10	yes	-
35	B-9	Chief of the IT business automation	13	-	yes
36	B-10	Foreman for polymerisation operation	3	-	yes
37	B-11	Deputy of polymerisation production	14	yes	-
38	B-12	Foreman for production preparation wizard	5	-	-
39	B-13	Deputy Head of production of yams	5	yes	-
40	B-14	Foreman for fibre production line.	7	yes	-
		CASE C			
41	C-1	Head of the Department of Environmental Protection	4	yes	-
42	C-2	Master of workshop yarns	5	yes	yes
43	C-3	Master of workshop fibra	8	yes	-
44	C-4	Head of the Department for Innovation and Rationalisation	6	yes	-
45	C-5	Deputy Head of Marketing Department	4	-	-
46	C-6	Deputy Head of Sales Department	2	-	-
47	C-7	Chemical specialist for organic products	23	yes	-
48	C-8	Deputy Head of Department of Safety	12	yes	yes
49	C-9	Foreman for production preparation wizard	4	yes	-
50	C-10	Deputy Head of production of yams	25	yes	-
51	C-11	Deputy Head of Research Centre	4	-	-
52	C-12	Deputy Head of production of yams	22	yes	yes

Appendix-V: The process for template analysis

The Appendix-V presents the process of data analysis using Template Analysis of King (2004) which is divided in four major steps: (1) initial template; (2) revising template; (3) final template; (4) presenting and interpreting template analysis. All four stages are briefly described below.

(1) Initial template

Table below presents initial template of this study which includes three highest-order codes are labelled as 'Learning environment', 'Influences on learning for corporate greening' and 'Facilitation of the learning process' and other two and three-levels codes.

- | |
|---|
| <p>1. Learning environment for corporate greening</p> <p>1.1. 'Work on reduction of hazardous substances</p> <p>1.1.1. Technical process</p> <p>1.1.1.1. managing hazardous waste</p> <p>1.1.1.2. water management</p> <p>1.1.1.3. product inputs</p> <p>1.1.2. Information dissemination</p> <p>1.1.2.1. formal</p> <p>1.1.2.1.1. briefing</p> <p>1.1.2.1.2. instruktazh</p> <p>1.1.2.1.3. 'piatimianutli'</p> <p>1.1.2.2. Informal interactions</p> <p>1.1.3. Feedback and reporting (legally)</p> <p>1.1.3.1. signing up papers</p> <p>1.1.3.2. difficulties</p> <p>1.2. Environmental management and energy use</p> <p>1.2.1. Parameters/legal changes for environmental performance</p> <p>1.2.2. Monitoring and documentation</p> <p>1.2.3. ISO certification</p> <p>1.2.3.1. History</p> <p>1.2.3.2. Pressures</p> <p>1.2.3.3. Success stories/Celebrations</p> <p>1.3. 'Green' innovation</p> <p>1.3.1.1. Process and stages</p> <p>1.3.1.2. Perceptions about challenges</p> <p>1.3.1.3. New opportunities</p> <p>1.4. Cleaning/Greening</p> <p>1.4.1. 'Subbotniki'</p> <p>1.4.2. Ideological work measures</p> <p>1.4.2.1. Moral and labour education</p> <p>1.4.2.2. Civic and patriotic education</p> <p>1.4.2.3. Education of collective responsiveness and common culture</p> <p>1.4.2.4. Legal education and training</p> |
|---|

1.4.3. 'Culture of production'

2. Influences on learning for corporate greening

2.1. The role

2.1.1. Perceptions of environmental duties

2.1.1.1. positive

2.1.1.2. disappointing

2.1.1.3. others/neutral

2.1.2. Perceptions as a citizen

2.1.3. Perceptions as a supervisor

2.1.3.1. workload

2.1.3.2. resources available

2.1.3.3. managing team and inter-team dynamics

2.2. Interpersonal relationship

2.2.1. Societal influences

2.2.1.1. changes in societal values

2.2.1.2. ignorance

2.2.1.3. patriotism

2.2.1.4. citizens of the residential area

2.2.2. Legal influences

2.2.2.1. 'human factor'

2.2.2.2. 'punishment and reward'

2.2.2.3. role of government

2.2.2.3.1. conflicts

2.2.2.3.2. advantages

2.2.3. Market-related influences

2.2.3.1. demanding customers

2.2.3.2. conflicts

3. Facilitation of the learning process

3.1. Issues around changed values and perceptions on environmental issues

3.1.1. Motivating

3.1.2. Explaining

3.1.3. Mediating

3.1.4. Problem-solving

3.2. Challenges associated with different agendas

3.2.1. Discussing with other departments

3.2.2. Discussing with senior management

3.2.3. Negotiating implementation of 'green' projects

3.3. Issues around different perspectives and goals alignment

3.3.1. Clarifying the goals within the team

3.3.2. Consulting and negotiating with external actors

3.3.3. Participating in big events

Table Appendix-V.1: Initial template

(2) Revising the template

During the analysis, the template has been continuously modified as new themes emerge and other disregarded. This interactive coding help to hierarchically explore concepts, themes, and theories to help make sense of the data.

(3) Final template

The production of final template was undertaken by reading and re-reading the interviews to make sure that all relevant information from research participants was included in the final template to King (2004). The final template is shown in Table Appendix V-2

1. Learning environment/Communities of practice <ul style="list-style-type: none"> 1.1. Reduction of hazardous substances <ul style="list-style-type: none"> 1.1.1. Meaning 1.1.2. Community 1.1.3. Practices 1.1.4. Identities 1.2. Energy efficiency <ul style="list-style-type: none"> 1.2.1. Meaning 1.2.2. Community 1.2.3. Practices 1.2.4. Identities 1.3. Environmental innovation <ul style="list-style-type: none"> 1.3.1. Meaning 1.3.2. Community 1.3.3. Practices 1.3.4. Identities 1.4. 'Greening and cleaning' <ul style="list-style-type: none"> 1.4.1. Meaning 1.4.2. Community 1.4.3. Practices 1.4.4. Identities 1.5. Boundaries/Tensions <ul style="list-style-type: none"> 1.5.1. Across different agendas <ul style="list-style-type: none"> 1.5.1.1. Insufficient legal knowledge 1.5.1.2. Distrust to the legal processes initiated by government 1.5.2. Across values <ul style="list-style-type: none"> 1.5.2.1. Insufficient traditional reward system 1.5.2.2. Distrust in governmental promises 1.5.2.3. Irresponsible young professionals 1.5.3. Across perspectives on market relations <ul style="list-style-type: none"> 1.5.3.1. Knowledge of customer expectations and marketing skills 1.5.3.2. Economic reasoning for environmental projects 	
2. Learning across boundary objects <ul style="list-style-type: none"> 2.1. Structural boundary object: Law <ul style="list-style-type: none"> 2.1.1. Law as a symbol of commitment/loyalty to the State 	3. Practices facilitating learning for corporate greening <ul style="list-style-type: none"> 3.1. Engaging through awareness raising and incentives <ul style="list-style-type: none"> 3.1.1. Sensitisation practice

<ul style="list-style-type: none"> 2.1.2. Law as a weapon. 2.1.3. Law and residential area 2.1.4. 'Punishing bodies' 2.2. Visionary boundary object: Rodina <ul style="list-style-type: none"> 2.2.1. 'Motherland' 2.2.2. 'Small Rodina' 2.2.3. It's not a Rodina, it's a hard-labour camp. 2.3. Market-related boundary object: Market <ul style="list-style-type: none"> 2.3.1. 'Ecology is an area to satisfy customers' 2.3.2. 'Ecology equals cost efficiency' 2.3.3. 'Ecology is costly' 	<ul style="list-style-type: none"> 3.1.2. 'Moral' encouragement practices 3.2. Maintaining patriotic image of environmental responsible citizen <ul style="list-style-type: none"> 3.2.1. Involving in historical and commemorative events 3.2.2. Mentoring and apprenticeship 3.3. Aligning through fostering diverse networks <ul style="list-style-type: none"> 3.3.1. Coordinating practice with inspectors and city council 3.3.2. Collaborating environmental innovations 3.3.3. Negotiating practices with international clients
---	---

Table Appendix V.2: Final Template for this study

(4) Presenting and interpreting template analysis

The analysis presented in Tables V1-V3 demonstrate the density of comments related to each code and the particular contextualisation of learning for corporate greening in Belarus within this study. For example, the analysis of codes 1.1. to 1.4. shows that '*use of hazardous substances*' as the largest community of practice; less research participants spoke about their learning in the '*energy efficiency*' community; and some research participants noted that they were involved in '*environmental innovation*'. Finally, small number of research participants are involved in the '*greening and cleaning*' community of practice. This last community of practice, in comparison to other 'green' communities, does not span all three organisations. As the data present, the first two communities are larger because they include other members whom the research has not interviewed because they are located outside the organisation (e.g. inspectors of the Ministry of Environmental Protection). Table below details these findings by research participant.

Case A

Codes	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	A-14	A-15	A-16	A-17	A-18	A-19	A-20	A-21	A-22	A-23	A-24	A-25	A-26	AM-1	AM-2		
1.1.	*		*	*		*	*		*	*		*	*	*	*	*	**	*	*	*	*		*	*	*	*	*	*		
1.2.				*	*			*					*	*		*		*	*		*	*	*	*	*	*	*			
1.3.		*	*		*	*	*	*	*		*		*		*		*			*			*		*		*			
1.4.			**					*			*		*							*	*		*	*	*	*	*	*		
1.5.								*	*	*					*	*		*	*	*	*	*	*							
1.5.1.										*		*																		
1.5.2.										*		*					*	*		*	*	*	*	*	*	*			*	
1.5.3.				*	*		*	*	*	*	*	*																		
2.1.										*								*	*	*	*	*	*	*	*	*				
2.1.1.	*										*	*		*															*	
2.1.2.				*	*		*	*	*	*	*	*							*											
2.1.3.												*														*				
2.1.4.	*											*	*		*	*	*	*	*	*										
2.2.																														
2.2.1.				*	*		*	*	*	*	*										*	*		*	*	*	*	*	*	
2.2.2.					*										*															
2.2.3.																			*											
2.3.																														
2.3.1.	*											*																		
2.3.2.		*																	*		*		**				**			
2.3.3.					*																									
3.1.																														
3.1.1.			*				*			*				*		*	*	*				**								
3.1.2.				*			*			*						*	*													
3.2.																														
3.2.1.		*		*	*		*	*	*	*	*	*																		
3.2.2.							*							*							**					*				
3.3.																														
3.3.1.							*			*		*					*													
3.3.2.			*			*						*	*		*	*	*	*	*	*			*							
3.3.3.		*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Case B

Codes	Description	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12	B-13	B-14	BM-1
1.1.	Reduction of hazardous	*	*	*		*	*	*	*	*	*	*	*	*	*	
1.2.	Energy efficiency		*	*	*	*	*	*	*	*			*	*		*
1.3.	Environmental innovation		*					*					*			
1.4.	Greening and cleaning	*		*	*				*							
1.5.	Boundaries/Tensions															
1.5.1.	Across different agendas		*	*		*	*	*	*	*						
1.5.2.	Across values							*	*		*	*	*	*	*	
1.5.3.	Across perspectives on market relations				*	*		*	*	*	*	*				**
2.1.	Structural boundary object: Law	*														
2.1.1.	Law as a symbol of commitment to the State				*	*	*	*	*	*	*	*				
2.1.2.	Law as a weapon.	*		*	*		*	*	*	*	*					
2.1.3.	Law and residential area			*												
2.1.4.	'Punishing bodies'			*						*			*			*
2.2.	Visionary boundary object: Rodina															
2.2.1.	'Motherland'	*	*	*		*	*	*	*	*						
2.2.2.	'Small Rodina'								*	*	**	*	*	*	*	*
2.2.3.	It's not a Rodina, it's a hard-labour camp.					*										
2.3.	Market-related boundary object: Market															
2.3.1.	'Ecology is an area to satisfy customers'	**					*	*		*	*	*	*	*		
2.3.2.	'Ecology equals cost efficiency'	*								*						
2.3.3.	'Ecology is costly'											*				*
3.1.	Engaging through awareness raising															
3.1.1.	Sensitisation practice	*	*													
3.1.2.	'Moral' encouragement practices			*			*									
3.2.	Maintaining patriotic image								*	*		*	*	*	*	*
3.2.1.	Involving in commemorative events				*	*							*			
3.2.2.	Mentoring and apprenticeship				*	*						*	*			
3.3.	Aligning through fostering diverse networks															
3.3.1.	Coordinating practice with inspectors and city				**			*						*		*
3.3.2.	Collaborating environmental innovations					*					*					*
3.3.3.	Negotiating practices with international clients	*			*			*					*			

Case C

Codes	Description	C-1	C-2	C-3	C-4	C-5	C-6	C-7	C-8	C-9	C-10	C-11	C-12	CM-1
1.1.	Reduction of hazardous	*	*	*		**	*	*	*	*	*	*	*	*
1.2.	Energy efficiency			**	*		*	*		*	*	*	*	*
1.3.	Environmental innovation					*	*							
1.4.	Greening and cleaning		*	*		*	*	*	*	*			*	
1.5.	Boundaries/Tensions													
1.5.1.	Across different agendas			*	*		*	*	*	*	*			
1.5.2.	Across values		*	*		*	*	*	*	*				
1.5.3.	Across perspectives on market relations					*	*		*	*	*	*	*	*
2.1.	Structural boundary object: Law													
2.1.1.	Law as a symbol of commitment to the State	**	*	*		*	*	*	*	*			*	*
2.1.2.	Law as a weapon.	*										*		
2.1.3.	Law and residential area			*	*		*	*	*	*	*			
2.1.4.	'Punishing bodies'				*	*		*	*	*	*	*		
2.2.	Visionary boundary object: Rodina													
2.2.1.	'Motherland'	*			*						*			
2.2.2.	'Small Rodina'			*										
2.2.3.	It's not a Rodina, it's a hard-labour camp.								*					
2.3.	Market-related boundary object: Market		*	*		*	*	*	*	*				
2.3.1.	'Ecology is an area to satisfy customers'	*	*	*		*	*	*	*	*		**		
2.3.2.	'Ecology equals cost efficiency'							*						
2.3.3.	'Ecology is costly'	*				*	*	*		*	*	*	*	*
3.1.	Engaging through awareness raising													
3.1.1.	Sensitisation practice	*				*	*		*	*	*	*	*	
3.1.2.	'Moral' encouragement practices				*					*				
3.2.	Maintaining patriotic image													
3.2.1.	Involving in commemorative events		*		*	*			*				**	
3.2.2.	Mentoring and apprenticeship				*			*		*				
3.3.	Aligning through fostering diverse networks													
3.3.1.	Coordinating practice with inspectors and city	**		*	*		*	*	*	*	*			
3.3.2.	Collaborating environmental innovations				*						*			
3.3.3.	Negotiating practices with international clients			*					*			*		

Table Appendix-V.3: Template analysis, categories and codes (* = number of front-line managers' response).