MASTER THESIS

Towards social sustainability of industrial parks: The Dutch case

Author: Nesar Moshtaq

Faculty of Behavioural Management and Social Sciences (BMS) - Master of Science in Business Administration

June 2019

UNIVERSITY OF TWENTE.

Colophon

A thesis submitted in fulfilment of the requirements for the degree of Master of Science in Business Administration at the Faculty of Behavioural Management and Social Sciences of University of Twente.

Title:	**Towards Social Sustainability of Industrial Parks:** **The Dutch Case**
Version:	June version
Date:	June 1, 2019
Author:	Nesar Moshtaq, MSc Student number: 1649531
University:	**University of Twente** Faculty of Behavioural Management and Social Sciences (BMS) Drienerlolaan 5 7522 NB Enschede, The Netherlands
First supervisor:	**Dr. ir. M. L. Franco-Garcia (Maria-Laura)** Assistant professor at the department of Governance and Technology for Sustainability (CSTM)
Second supervisor:	**Dr. L. Brouwers-Ren (Lichin)** Assistant Professor at the department of NIKOS, Centre for entrepreneurship, strategy, international business and marketing
Third (external) supervisor:	**Drs. I. Kreiner (Isabel)** Is part-time PHD candidate at the department of Governance and Technology for Sustainability (CSTM)

Abstract

Today, as the world is facing enormous challenges regarding environmental crisis, fortunately the global economic sector is becoming more aware of the need for sustainable economic development. Therefore, in the past years many initiatives have been launched to move economic development towards a more sustainable direction. The development of industrial parks to faster economic development, tackle poverty and create jobs on local, regional and national levels, has played and is still playing a key role. Especially with policy makers who bare a great responsibility in the Netherlands to ensure economic prosperity and jobs for everyone. However, while much attention has been given to the *economic* and *environmental* dimension of the sustainability concept, the *social* dimension is less developed and embedded in the economic planning and activities of industrial parks. Therefore, this study is conducted to find out what the current status quo is regarding the concept of social sustainability in the context of industrial parks in the Netherlands.

Throughout case study as research method, three industrial parks were selected, reviewed and analysed in order to find out *"how the concept of social sustainability is perceived by the key-stakeholders of industrial parks"*. These cases include a sustainable industrial park, a traditional industrial park which is currently in a transformation phase into a sustainable park and a traditional industrial park. Via in-depth interviews and observations at the selected industrial parks, the perception of key-stakeholders was analysed. The study has revealed that currently the understandings of key-stakeholders regarding 'sustainability' are mainly based on the environmental dimension. As for the social dimension, the key-stakeholders strongly associate it with 'job creation' for the communities despite the fact it covers many other relevant indicators as well. Furthermore, the analysis has revealed that an alignment in strategic planning and operational activities of the industrial parks and individual companies, is not included in the broader perspective of sustainability. This has mainly to do with the fact that a thorough understanding by the key-stakeholders regarding the concept is missing. In addition to that, the industrial parks and more specifically, individual companies are mainly profit oriented and do not see what the benefits of social sustainability might be for their business activities. Nevertheless, given the limitations of this study and the little response of individual companies, the findings of this research cannot be generalized to other cases in the Netherlands. Further studies should focus on exploring the possibilities for bottom-up approaches to move industrial parks to a more social sustainable park. This could be very interesting as current approaches are mainly focused on top-down. Individual companies are profit oriented and asks: "What is in-it for me? Why should I focus on (social) sustainability or Corporate Social Sustainability (CSR)?". According to Flammer (2015), companies could benefit significantly if they operate more socially sustainable. Therefore, it could be interesting for further research to find out how to advocate for more socially sustainable industrial parks in the Netherlands. In this regard the focus of companies should be on value creation rather than on profit making to expand or survive.

Key words: *Sustainable economic development, social sustainability, industrial parks, key-stakeholders, The Netherlands.*

Content

List of abbreviations

CO2	Carbon Dioxide
SD	Sustainable Development
SIP's	Sustainable Industrial Parks
MCDM	hybrid Multi-Criteria Decision-Making model
EIP	Eco-Industrial Parks
SED	Sustainable Economic Development
EMS	Environmental Management System
ISO	International Organization for Standardization
CEMS	Continuous Emission Monitoring Systems
SIA	Sustainable Industrial Areas
GRI	Global Reporting Initiative
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IGEP	Indo-German Environment Partnership
CBS	Centraal Bureau voor Statistiek (Central Office for Statistics)
TSC	The Sustainability Consortium
SIA	Sustainable Industrial Areas
CSR	Corporate Social Responsibility
SME's	Small and Medium sized Enterprises
IPPC	Working Groups of the Intergovernmental Panel on Climate Change

List of figures

Tables

Appendices

Chapter 1: Introduction

In this chapter the research background is described. Furthermore, the research scope, problem statement and research objectives are discussed. In addition to that, the research question and its related sub-questions are formulated. Finally, the research is outlined in paragraph 1.6.

1.1 Research background

Today, in the face of environmental crisis, humanity is becoming more aware of the necessity to act to limit CO_2 in the atmosphere. This in order to protect our planet and sustain the wellbeing of generations to come. Many initiatives and a good number of buzzwords such as: *"green economy", "circular economy"* and *"sustainable economy"* are introduced to create awareness and to move the global economy/companies into a more sustainable direction. According to Raworth et al., (2014), it is an urgent matter to deal with the nature with more respect and gratefulness rather than exploiting it for economic growth. In addition to that, the Brundtland Report (1987)[1] points out that sustainable development is not just an option anymore, but the best way forward *"to safeguard the wellbeing of generations to come"*.

When we look into the influencers of human development for the past two centuries, we see that the development of industrial sectors has been one of the important boosters behind human development and economic welfare. This is due to its positive impact on the "economic and social regional development" (Kreiner et al., 2019). For example, it contributes to the economic growth through job creation and it could be used as a constructive mechanism to tackle poverty in many areas of the world (Zhe et al., 2016). Moreover, the industrial parks development has been perceived as "a constructive channel of industrial infrastructure" which contributes significantly to (regional) economic development and more specifically, it plays a key role in job creation, research and technological development and attraction of foreign investment (Noufal, P., & Ramachandran, K.V., 2016; Sosnovskikh, S., 2017; Zhao, H., & Guo, S., 2017). However, the other side of the same coin shows that if the industrial development is not sustainably planned, it could pose risks to the environment and people (IGEP and Gothmann, K., et al., (2015)[2]; Luhe Wan et al., 2017). More specifically, it could lead to environmental problems such as climate change and other related to social issues and conflicts (IPCC, 2007)[3].

In order to ensure that the industrial development has positive impacts and the risks are minimized, a variety of international rules and regulations have been developed and implemented by institutions such as the standards of Global Reporting Initiative (GRI)[4]. Which supports the private and public sectors to better understand and communicate their impact on essential sustainability issues like the climate change and sustainable use of natural resources worldwide. Though, sustainability and

---

[1]A report of the world commission on environment and development. General Assembly of the United Nations introduced in 1987.

[2]IGEP (Indo-German Environment Partnership) and GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) guide on planning of sustainable industrial parks in India, 2015.

[3]A report of the Intergovernmental Panel on Climate Change (IPCC), fourth assessment conducted by the three Working Groups of IPCC.

[4]GRI is an international independent organization that helps businesses, governments and other organizations understand and communicate the impact of business on critical sustainability issues such as climate change, human rights, corruption and many others.

sustainable development are also anchored in the social related issues of the industry, in fact, the concept of sustainable development includes three dimensions known as: *Profit* (economic), *People* (social) and *Planet* (environmental). This concept of sustainable development is also called 'the triple bottom line' which guides inclusive sustainable development of i.e. industrial parks (Elkington, J., 1994). Based on this concept, scholars have developed various frameworks to guide the public and private sectors through their strategic planning and operational management processes. The 'Hybrid Multi-Criteria Decision-Making' (MCDM) model is one of those frameworks which was developed to guide stakeholders of Eco-Industrial Parks (EIP) (Zhao, H., & Guo, S., 2017). Another framework, which was developed by Kreiner et al. (2019), seeks to support the decision-making, planning and operational management phases of Sustainable Industrial Parks (SIP) by the key-stakeholders. This framework was elaborated under the basis of previous works of Kreiner et al. (2019), whose findings (gap analysis) denote the lack of a framework/guideline for industrial parks that has the ambition of performing "sustainably". However, through the gap analysis and literature review it was identified that the social dimension receives far less attention by the key-stakeholders compared to environmental and economic dimensions of the sustainability concept. This issue has to do with the lack of clear methods to quantify the social factors (Axelsson et al., 2013; Cutter et al., 2015).

This un-holistic and mainly economic driven approach of policy makers and other key-stakeholders of industrial parks has led to significant investments in the development and expansion of industrial parks while less attention has been paid to innovation, transformation and re-organisation of existing industrial parks. According to Noufal, P., & Ramachandran, K.V. (2016), it is due to the significant economic contribution of industrial parks to local and regional development. That the policymakers are mainly focussing on the development and expansion of industrial parks during their strategic planning regarding reginal development. This approach is also applicable to the Dutch case. The Institute for Strategic Policy Analysis (a governmental organisation), which focuses mainly on environmental and spatial planning, argues that the provincial governments in The Netherlands need to review their policies regarding the industrial sites expansion. In their report *'De toekomst van bedrijventerreinen: van uitbreiding naar herstructurering',* the organisation advises to restructure the existing industrial sites, rather than expanding existing industrial sites or developing new ones. Furthermore, they state that in the process of restructuring industrial sites, social effects like cluttering of space and the loss of open space value plays a key role to ensure that land is used efficiently. They also state that since the national policy is currently focusing more on building within cities, industrial sites could get a new function. For example, it could function as a living space or a combination of a living and working space[5]. To get an idea on how many industrial sites are currently in The Netherlands, in Figure 1 the number of sites per province are illustrated. In this regard, currently up to 250 dated industrial sites are in a transformation phase, while a significant number is prepared for demolition (see paragraph 2.4.).

---

[5] Source: De toekomst van bedrijventerreinen: van uitbereiding naar herstructurering. Planbureau voor de Leefomgeving. Den Haag/Bilthoven, 2009. Is a national institute for strategic policy advise concerning environment, nature and space.

Figure 1: Number of industrial sites per province in the Netherlands (IBIS, 2019[6])
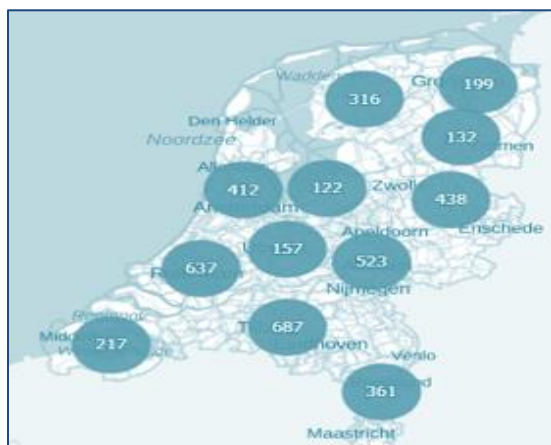
1.2 Research scope

This research focuses on Dutch industrial parks and their inclusion of sustainable development initiatives in their planning and operations. In this research, only Dutch cases will be studied and this is due to two main reasons: (i) accessibility to the industrial parks and (ii) diversified perception of the 'sustainability' term in The Netherlands. In this regard, scholars have reported that the sustainability term is widely associated with the environmental dimension of the sustainability concept while the social dimension receives far less attention (Pellenberg, P.H., 2002). Therefore, and due to the importance of its perception, the first part of this research addresses it within industrial parks. Three industrial parks in The Netherlands (a sustainable park, a traditional park in the transformation phase into a SIP and a dated traditional park) were selected for their analysis (see chapter 3: methodology). Their selection was based on different levels of sustainability performance which allows to distinguish between the different key-stakeholders perceptions i.e. the local governments, park managers, individual companies and cooperatives.

1.3 Problem statement

The main problem leading this research is the different understandings among the key-stakeholders of (sustainable) industrial parks regarding the sustainability concept. And more specifically, regarding the social dimension (also called social sustainability) of the concept (CBS, GRI and TSC reporting, 2014[7]; Hofkes, M. W., & Verbruggen, H., 2016). Therefore, there is a lack of an inclusive understanding to ensure an inclusive sustainable economic development with industrial parks at the core. This issue has led to poor social criteria for the construction of social indicators in order to measure, monitor and report constructively the social effects of industrial parks in the Netherlands (Hofkes, M. W., & Verbruggen, H., 2016).

---

[6]An open source web data regarding industrial sites in the Netherlands provided annually by provinces/ municipalities.

[7] CBS, GRI and TSC (2014) Reporting on sustainable development at national, company and product levels: The potential for alignment of measurement systems in a post-2015 world. Statistics Netherlands (CBS), the Global Reporting Initiative (GRI) and The Sustainability Consortium (TSC).

1.4 Research objectives

The objective of this research is threefold. Firstly, it aims to find out what the perceptions of the local governments, park managers, individual companies and cooperatives (representing the Dutch companies) are regarding the social dimension of the sustainability concept (hereinafter: social sustainability). This latter with the intention to identify new factors/ indicators for social sustainability that are currently not mentioned in existing frameworks. Secondly, it aims to add academic value to the field of strategic planning and operations management since companies and industrial sites are seeking to become more sustainable and deliver not only functional products and services, but also meaningful positive effects to their regions. More specifically, it aims to add value to the activities of key-stakeholders of industrial parks regarding the strategic planning and operations management phases of SIP's. And lastly, it aims to contribute to the field of (good) governance for sustainable development at industrial sites.

1.5 Research question

The problem statement and objectives of this research lead to the following research question and sub-questions:

"How is social sustainability perceived by key-stakeholders of (sustainable) industrial parks in the Netherlands?"

- o *What is sustainability in the context of industrial parks?*
- o *What makes an industrial park socially sustainable?*
- o *Who are considered key-stakeholders at a (sustainable) industrial park?*
- o *How are the strategic planning and operation management phases organized within (sustainable) industrial parks in the Netherlands?*
- o *What are the perceptions of key-stakeholders regarding the social sustainability concept?*
- o *What are the (relevant) missing factors/ indicators of social sustainability in comparison to the framework developed by Kreiner et. al. (2019)?*

1.6 Research outline

In Chapter 2 (literature review) the relevant literature regarding concepts used around the research question is discussed. In paragraph 2.1, the concept of sustainability in the context of industrial sites are clarified and summarized. This in order to provide a theory grounded answer to sub-question 1. Consecutively, in paragraph 2.2, the concept of social sustainability is discussed by identifying the most relevant and recent social sustainability frameworks. Many frameworks exist in the literature that can be applied by key-stakeholders of industrial sites and individual companies to deliver on social sustainability. These frameworks outline various social factors and indicators which could be applied by key-stakeholders into their strategic planning and performance management processes. In this study, one of the most detailed and recent frameworks which was elaborated by Kreiner et al. (2019), is selected and reflected upon in the field through the case studies. The idea behind this approach is to find out how the concept of social sustainability is perceived by the key-stakeholders of the selected industrial sites within the case studies. Even further, a theory grounded answer is provided to sub-questions 2 and 4. Furthermore, the term 'key-stakeholders' is defined based on literature review in paragraph 2.3. Light was

shed on who exactly are the key-stakeholders of industrial sites. This was relevant in order to select and approach the right stakeholders for in-depth interviews within the case studies as outlined in Chapter 3 (Methodology). As the research scope of this study is limited to the Dutch case, in paragraph 2.4 the current situation of strategic planning and operation management phases of industrial sites in The Netherlands is analysed and discussed. This is done based on relevant and recent literature review. As output of chapter 2, a theoretical framework is produced on which the research is further conducted. In chapter 3, the research methodology is described. Firstly, in paragraph 3.1. the research process is designed and illustrated. Following that, in paragraph 3.2. the research method, which is a qualitative method, described and motivated why this is the most suitable method for this research. In the following paragraphs the research strategies and approaches; case study and desk research are outlined. On top of that, the process of conducting the interviews to collect primary data described through sequential steps. Chapter 4 is dedicated to data analysis and results reporting. Case by case the results are analysed and discussed to provide a grounded answer to the research question. The limitations of this research are also described in this chapter. Finally, in chapter 5 conclusions are drawn and recommendations made for further research.

Chapter 2: Theoretical framework

In this chapter, the first four sub-questions are answered as formulated in paragraph 1.5. This is done based on literature review.

2.1 The concept of sustainability in the context of industrial parks

The term '*sustainability*' has its origins as a policy concept in the Brundtland Report (1987). This report's message is focused on the wellbeing of humans through economic growth on the one hand, and ways to save the planet on the other hand. This was mentioned with the intention to safeguard the needs of the generations to come (Kuhlman, T., & Farrington, J. 2010). The concept of sustainability includes three dimensions (3Ps) which are known as: *Profit* (economic), *People* (social) and *Planet* (environmental) (Elkington, J., 1994; Pope, J., Annandale, D., & Morrison-Saunders, A., 2004; Hacking, T., & Guthrie, P., 2008; Gothmann, K., et al., 2015 and UNIDO report 2016[8]). The 3Ps are also called the 'triple bottom line' and was introduced by Elkington in 1994. He argues that SD can balance the 3Ps and avoid conflict among them while deploying economic activities and seeking for economic growth. Following the publication of the Brundtland report, the concept of sustainable industrial development was introduced in 1992 during the World Environment Development Conference (codename: ECO-92)[9]. Since then it has gained worldwide recognition (Elabras Veiga, L. B., Magrini, A., 2009). Goodland, R., (1995), also argues that sustainability is based on the interaction (and balance) of these three dimensions.

Figure 2: Interaction between the three dimensions of sustainability concept (Goodland, 1995)

2.1.1 Sustainable Industrial Parks-concept

In line with the concept of SD, scholars have defined an "industrial park" as sustainable when the three dimensions (economic, social and environmental) are taken into consideration and balanced in all stages of an industrial park development (project) (Gothmann, K., et al., 2015; Sustainable development and integration report[10]).

---

[8] GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) guidelines for sustainable industrial areas, 2015.
UNIDO (United Nations Industrial Development Organisation) report on industrial development: 'The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development', 2016.

[9] During this conference, there were many "socio-environmental" directions represented to promote sustainable development of industrial parks. These directions called for the adoption of sustainable development principles within industrial parks by focusing on balanced "environmental integrity", "social equity" and "economic efficiency".

[10] GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) guidelines for sustainable industrial areas, 2015.

However, the process of SIPs development is a "complex" one that requires to be broken down into "sub-processes in order to enable implementation as an "overall policy" (Kreiner et al., 2019). The sub-processes start usually with "strategic planning" in which the objectives of developing a SIP are defined. In addition to that, each dimension needs to include a set of relevant indicators that covers each of the management phases (Plan, Do, Check and Act) of the sustainability status of the industrial parks and its progress (Sokovic, M., Pavletic, D., and Kern Pipan, K., 2010).

The process of SIPs development took its inspirational source from the environmental management system models e.g. Environmental Management System (EMS), International Organization for Standardization (ISO) 14001 and Continuous Emission Monitoring Systems (CEMS) thought with a broader scope by including social and economic dimensions of the industrial park (Geng, Y., Cóté, R., 2003). In line with the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) Guidelines for Sustainable Industrial Areas (SIA) 2015, Kreiner, et., al. (2015), also recommend that a master planning of SIPs is crucial to achieve the defined objectives. In addition to that, the GIZ guidelines emphasize this as well. Finally, the sustainability assessment frameworks emphasize that the public and private sectors need to work closely to cover all important dimensions (Zhao, H., Zhao, H., Guo, S., 2017; Taddeo R., 2016). These frameworks highlight that in order to assess the sustainability of industrial parks or individual companies, a set of indicators are crucial to assess the sustainability matters. Additionally, scholars have developed various methodologies at company level to allow them to plan strategically and evaluate their performance regarding sustainability criteria. The most applied tools correspond to those of ISO series, strategic environmental assessment tool, Balanced Scorecard, Benchmark, among others (Veleva, V., et al., 2015). According to Kreiner, et al, (2019), these international frameworks are used by both the public and private sector to evaluate individual company's performance and regional development regarding sustainability.

Highlights
The term "sustainability" is originated by Brundtland in 1987 and defined in the famous Brundtland Report. It was introduced with the intention to create awareness globally on the usage of planet's resources for economic activities in a more environmentally responsible and balanced way. The concept of SD entails three dimensions which are also called the 3p's (profit, people and planet). *Profit* is related to the economic activities; *people* is related to social or wellbeing of humans and *planet* is related to environmental impact of human economic activities. Scholars have defined an industrial park as SIP when all three dimensions of the sustainability concept are taken into consideration and are balanced in the development and implementation processes of a SIP.

2.2 The concept of social sustainability in the context of industrial parks
Vallance, S., Perkins, H. C., & Dixon, J. E., (2011), point out that in order to safeguard social sustainability at industrial sites, one needs to address three perspectives which are often overlooked in the related literature. Those perspectives are: 1) *development sustainability* (related to poverty and inequity); 2) *bridge sustainability* (addresses

---

Sustainable development goals and integration: achieving a better balance between economic, social and environmental dimensions. A study commissioned by German council for sustainable development. Produced by stakeholder forum. Cutter, A., (principal author), Osborn, D., Romano, J., Ullah, F., (contributing authors).

behavioural changes to achieve environmental goals) and; 3) *maintenance sustainability* (concerns preservation of socio-economic matters). Regarding the definition of social sustainability, the authors suggest that the concept is well presented in the Brundtland Report of 1987 on sustainable development, i.e. '*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs*' (Brundtland Report, 1987, p.40). According to Eizenberg, E., & Jabreen, Y., (2017), the Brundtland Report addresses the basics of human needs such as food and water security while the quality of sustainable growth is safeguarded. They also argue that the concept of social sustainability lacks a clear definition in theoretical and empirical studies. They state that 'risk' is a "constitutive concept of sustainability and that the contemporary conditions of risk resulting primarily from climate change and its ensuing uncertainties pose serious social, spatial, structural, and physical threats to contemporary human societies and their living spaces" (Eizenberg, E., & Jabreen, Y., 2017, p. 5). Based on this theory they suggest a comprehensive conceptual framework of social sustainability which includes four interrelated concepts incorporating social aspects. These concepts are presented in Table 1.

Table 1: Comprehensive conceptual framework (Eizenberg, E. & Jabreen, Y., 2017)

Concepts	Social aspects
1) Equity	- Recognition ("revalues unjustly devalued identities") - Redistribution (economic restructuring) - Parity of participation (public involvement)
2) Safety	- Right to be safe - Preventing future casualties and physical harm
3) Eco-prosumption	- Producing and "gaining values in socially and environmentally responsible ways"
4) Urban Forms	- "Physical dimensions of socially desired urban and community physical forms"

The first concept (Equity) zooms into the democratic rights of the community to be involved in the allocation of the space planned for industrial sites. Eizenberg, E. & Jabreen, Y., (2017), point out that by involving the community in this process industrial park managers will reduce alienation and enhance civility and sense of place attachment. Regarding the concept of safety, the authors point out that the community does not only have the right to be safe from their working activities at industrial sites, but also to prevent future casualties and guarantee the security of the public/ communities in and around industrial sites. The third concept (Eco-prosumption) focusses on dealing respectfully with nature by gaining values from the nature in socially- and environmentally responsible ways. Finally, the concept of urban forms represents the "physical dimensions of socially desired urban and community physical forms". Eizenberg, E. & Jabreen, Y., (2017), point out that it should promote a "sense of community, safety, health and place attachment" among other social objectives. Haji Rasouli, A., & Kumarasuriyar, A., (2016) also point out that the concept of social sustainability lacks a clear definition in comparison to the economic and environmental dimensions of the sustainability concept. Therefore, they tried to contribute to this "vagueness" by distinguishing two levels of the key concept of social sustainability: macro and micro levels.

Regarding the macro level, they refer to physical wellbeing and basic needs of humans which includes housing, food, clothing, health and sanitation. As for the micro level, it consists of three (sub-) factors: social, services and governance. The social factor includes eight indicators (social and cultural life, social homogeneity and cohesion, integration, diversity and sense of place, communication and participation, social justice and equity, social amenity, social security and social capital and well-being). The services factor includes five indicators (access to goods, service and employment, education, training and equitable income). As for the governance factor it includes three indicators (democracy, engaged governance and system for citizen engagement). Haji Rasouli, A., & Kumarasuriyar, A., (2016), point out that these factors and their indicators need to be considered in the strategic planning and operations management of e.g. sustainable industrial parks when it comes to the social dimension of the sustainability concept. A more quantified approach to the social sustainability concept is provided by Labuchagne, C., & Brent, A. C., (2016). They suggest that the measurement of social impact and calculation of key indicators are less developed compared to environmental and economic dimensions. Therefore, they propose a social impact indicator calculation procedure based on the Life Cycle Impact Assessment (LCIA) method, which was originally introduced for the environmental dimension. In the figures below, the key factors of social sustainability on macro and micro level are illustrated.

Figure 3: Key factors of social sustainability on macro and micro levels (Haji Rasouli, A., & Kumarasuriyar, A., 2016)
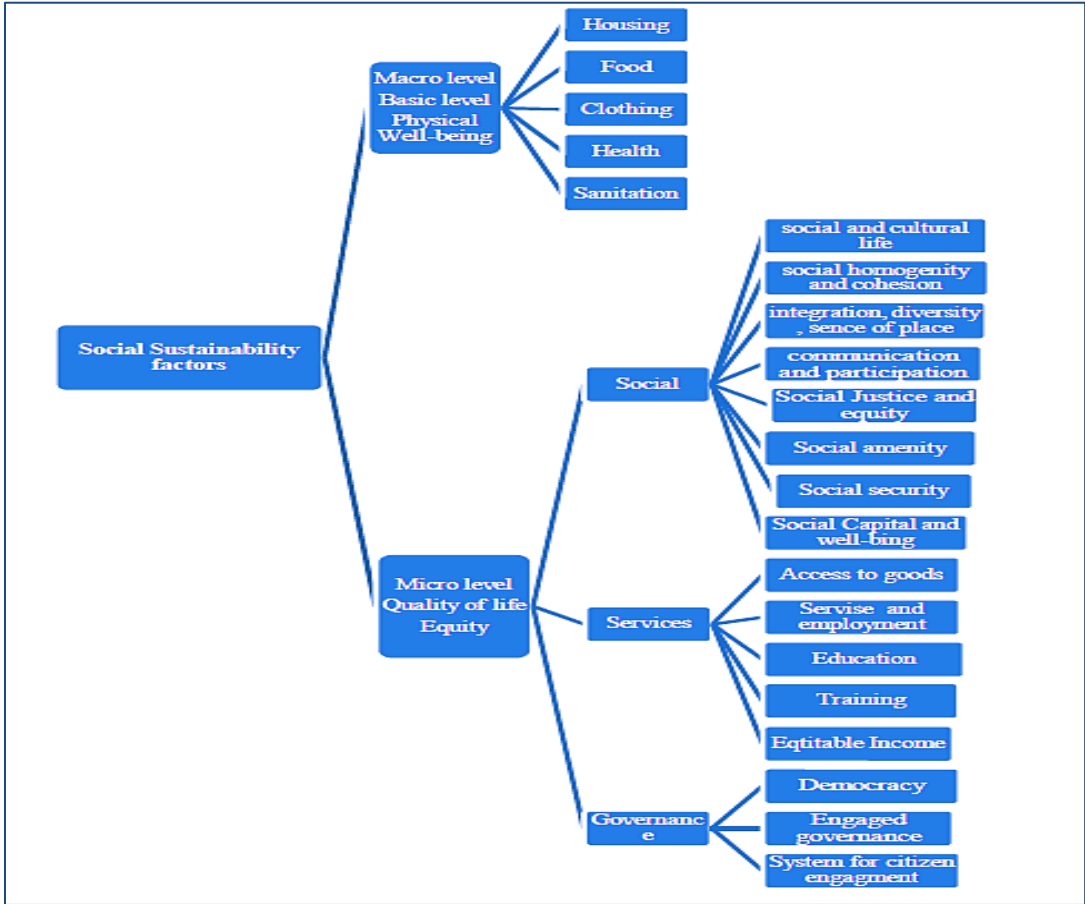
Figure 4: Framework for social sustainability assessment; Labuschapne, C., & Brent, A. C., (2006)
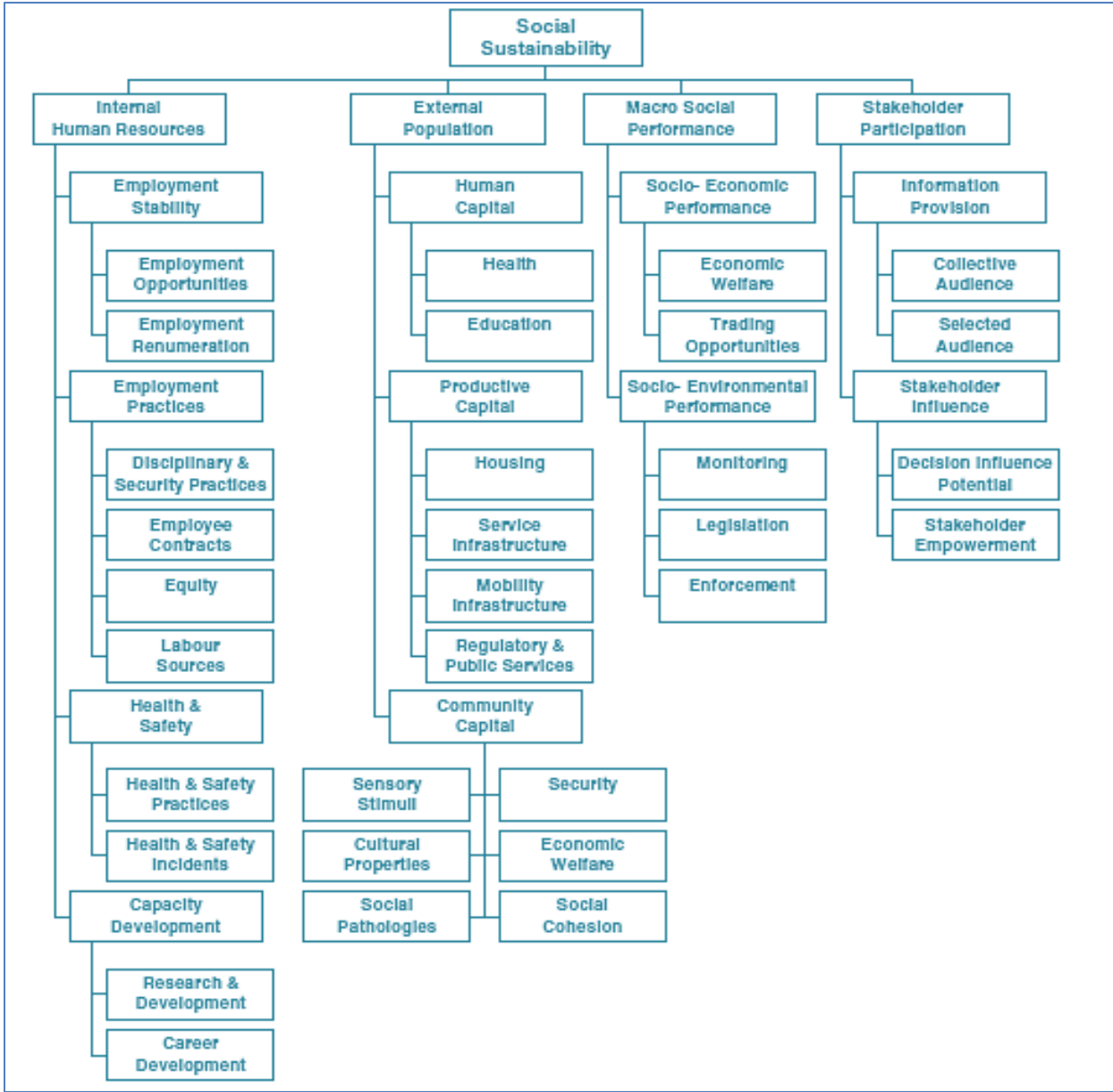
The definition of the factors and their related indicators in Figure 3 are described in Table 2 below.

Table 2: Definition of social indicators derived from; Labuschapne, C., & Brent, A. C., (2006)

Internal Human Resources	Internal Human Resources focuses on the social responsibility of the company towards its workforce and includes all aspects of employment.
Employment Stability	The criterion addresses a business initiative's impact on work opportunities within the company, the stability thereof as well as evaluating the fairness of compensation.
Employment Practices	Disciplinary and secrecy practices as well as employee contracts are addressed under this criterion. These are evaluated to ensure that it complies with the laws of the country, international human rights declarations as well as other human rights and fair employment practice standards.
Health & Safety	The criterion focuses on the health and safety of the workforce and evaluates preventive measures as well as the occurrence and handling of health and/or safety incidents.
Capacity Development	The criterion addresses two different, aspects namely research and development, and career development.
External Population	**External Population focuses on the external impacts of the company's operational initiatives on a society, e.g. impacts on the availability of services, community cohesion, economic welfare, etc.**
Human Capital	Human Capital refers to an individual's ability to work in order to generate an income and encompasses aspects such as health, psychological wellbeing, education, training and skills levels. The criterion addresses Health and Education separately.
Productive Capital	Productive capital entails the assets and infrastructure an individual needs in order to maintain a productive life. The criterion measures the strain placed on these assets and infrastructure availability by the business initiative.
Community Capital	This criterion takes into account the effect of an operational initiative on the social and institutional relationships and networks of trust, reciprocity and support as well as the typical characteristics of the community.
Macro Social Performance	**Macro Social Performance focuses on the contribution of an organisation to the environmental and financial performance of a region or nation, e.g. contribution to exports.**
Socio-Economic Performance	This criterion addresses the external economic impact of the company's business initiatives. Economic welfare (contribution to GDP, taxes, etc.) as well as trading opportunities (contribution to foreign currency savings, etc.) are addressed separately.
Socio-Environmental Performance	This criterion considers the contributions of an operational initiative to the improvement of the environment for society on a community, regional and national level. The extension of the environmental monitoring abilities of society, as well as the enhancement of legislation and the enforcement thereof, are included in this criterion.
Stakeholder Participation	**Stakeholder Participation focuses on the relationships between the company and ALL its stakeholders (internally and externally) by assessing the standard of information sharing and the degree of stakeholder influence on decision-making.**
Information Provisioning	The quantity and quality of information shared with stakeholders are measured. Information can either be shared openly with all stakeholders (Collective Audience) or shared with targeted, specific groups of stakeholders (Selected Audience).
Stakeholder Influence	The degree to which the company actually listens to the stakeholders' opinion should also be evaluated. Two separate sub-criteria are included: Decision Influence Potential and Stakeholder Empowerment.

The framework of Kreiner et. al., (2019), which was also developed under a wider basis of analysis includes to some extent indicators of each dimension (social, economic and environmental) regarding the sustainability planning and implementation phases. It has also revealed the need to further develop the social dimension. Trying to address this, the authors compiled some of the social indicators from existing frameworks for the strategic planning of the social sustainability dimension and operations management phases of industrial parks (see Table 3). Each of the formulated indicators can be assessed according to three degrees: '*high*', '*medium*' and '*low*' of the sustainability status at the planning phase. Same indicators can be integrated later on to the overall performance assessment of the SIP. However, this framework with indicators requires feedback from practitioners and key-stakeholders to confirm whether it can be suggested as managerial tool to support industrial parks to transit towards sustainability performance. A detailed overview of the social sustainability indicators is included in the existing frameworks (see Annex 1).

Table 3: A compilation of indicators apropos the social dimension of sustainable development concept (Kreiner et. al., 2019)

#Indicators	Main descriptive	High	Medium	Low
Public transportation (housing not more than … km / hours away)	Does public transportation exist which guarantees an efficient service from dwelling sites to industrial park?	Public transportation is assured, no more than 30 minutes distance from home. Average expenditure for transportation does not exceed a 15 % of earnings from the workers.	Public transportation is assured with sufficient capacity. But time and cost does not satisfy the expectations of the users.	Only 20% of the employees and workers use the public transportation based on reasons of time dedicated to transportation, cost or quality, as capacity is not sufficient. (target for the town or regional authority ?)
Child care	Do child care centres for tenants exist? Who can have access? Which are the conditions to have the child in this centre?	Child care centres exist for the tenants. The companies offer the service for their employees at no extra cost or at a reduced fee.	Child care centres exist for the tenants. The employees have to pay for it.	No child care centres exist in the park.
Occupational Health and Safety	Do OHS Management systems exist? The accident rate is far below the usual rate in the respective industrial activity?	The park management has implemented a management system for OHS. Certified OHS Management systems exist in most of the resident companies. Legal regulations and standards are implemented.	Certified OHS Management systems exist in some of the resident companies. Legal regulations and standards are implemented.	Legal regulations and standards are implemented.
Job creation and Labour/Management Relations	Is the job creation contributing substantially to the region? Are jobs with value created?	Income per family rises, welfare in general rises.	Income per family rises.	Jobless ratio decreases in the region.
Security Practices	Does the park have a secured access? What criteria are checked?	Access to the park is secured. Criteria are: identity, safe vehicles, drugs. Security service, access control, enhanced lady's safety, camera surveillance	Security service, access control, enhanced lady's safety, camera surveillance	Access is secured at the entry of each company.
Gender questions (Diversity and Equal Opportunity)	Are gender policies implemented in the resident companies? Has the park itself a policy related to it?	A Diversity and Equal Opportunity Policy exists at park and tenant level.	Some tenant companies have a declared policy on these topics.	There does not exist a declared policy on these topics.
Education and Training, Job training	Is training offered? Are educational programs offered for the employees or workers of the companies?	Special training programs are offered by the park, complementing the training programs offered by the companies. Synergies are	Training programs in the companies exceed the minimum asked for by law.	Training is offered on a business as usual basis: annual training programs consider the minimum required

		created on this topic.		by law in the companies.
Labour Practices	Does the park contribute to improve the labour conditions in the region?	The park and the resident companies offer better labour conditions compared to industries outside the park. Monitoring is done on a periodic basis to get improvement opportunities (organizational climate studies).	Labour conditions are in some resident companies better than in the region, which is demonstrated through a low personal rotation rate.	Labour conditions are the usual in the region and fulfil the minimum criteria imposed by law.
Promotion of working and occupational health standards	Are specific standards promoted or asked to be fulfilled by companies in the park?	Workplace comfort, e.g. air quality, visual comfort, noise protection is promoted, implemented and corresponds to the international standards. (indicate which ones)	Workplace comfort is considered by the companies.	Working and occupational health conditions correspond to the local legal requirements.
Anti-corruption	Do the parks or the tenants policy show anti-corruption principles? Is this demonstrable?	A clear anti-corruption policy exists at park and companies' level.	Several companies show an anti-corruption principle in their policy, actions are instrumented.	Only a few companies show an anti-corruption principle in their policy.
Anti-competitive behaviour	Does an anti-competitive behaviour policy exist?	A policy respective anti-competitive behaviour exists at park level (and is condition for being admitted as a tenant).	A non-documented policy exists respective anti-competitive behaviour.	No policy respective anti-competitive behaviour exists.
(Marketing Communications) Product Responsibility	Is the principle of product responsibility instrumented?	All companies follow the principles of product responsibility including the post-consumer stage (eco-design, recycling, reverse logistics were feasible), .	Product responsibility does exist only at the usual level of product guarantee at company level. Environmental criteria are considered during product design. The park promotes the principle of product responsibility.	Product responsibility does exist only at the usual level of product guarantee at company level. No promotion or training on this topic is offered.
Social infrastructure	Does a centre exist which provides education, leisure, local supply, common catering, medical services for the tenants?	Education, culture, leisure, local supply, common catering, medical services are offered to the tenants on site by the park administration and used by the companies.	Some social infrastructure exists but does not satisfy the needs of or is only minimum used by of the companies or workers.	Social infrastructure exists only in the traditional way, which is not different to other industrial areas. (medical services are individually offered by the companies required by law; the other services are offered by

				independent service providers).
Promotion of lodging standards	Does communication exist from the park to the community to promote standards for housing of employees which considers sustainability aspects?	Standards for housing of employees within or close to the industrial area are promoted and implemented with support of the park (which includes the tenant companies).	A few sustainability aspects are promoted related to lodging standards for the employees.	Promotion of housing exists (pe. INFONAVIT), but does not consider sustainability aspects.
Encouragement of trade unions and NGOs	Is encouragement of trade unions and NGOs observed?	0pen policy, non-discrimination is implemented. Constructive communication exists with trade unions. NGOs or social initiatives are encouraged by the park administration, as well as by the companies.		Trade unions exist but have no influence. NGOs are not promoted, nevertheless some activities from the park or companies are observed related to social work- like education initiatives in surrounding schools, reforestation activities, environmental awareness promotion in the community etc.
Corporate Social Responsibility or similar schemes	Is CSR or similar schemes implemented?	CSR or similar schemes are implemented by the park and some companies in strong collaboration with the communities.	CSR or similar schemes are implemented by the park and some companies.	Some activities related to CSR are implemented by the companies.

Highlights

The literature review shows that the concept of 'social sustainability' lacks a clear definition. This has to do with the fact that in the past years the environmental and economic dimensions of the sustainability concept have received far more attention than the social dimension. However, the definition of social sustainability is to some extent well presented in the Brundtland Report of 1987. The report points out that social sustainability is a '*Development that meets the needs of the present without compromising the ability of future generations to meet their own needs*' (Brundtland Report, 1987, p.40). As for the question, what makes an industrial park socially sustainable, researchers have developed various frameworks by including key social indicators to guide decision makers and the management of industrial parks to plan and operate in a more socially beneficial way. The most advanced framework is the one developed by Kreiner et al., (2019) (see Table 3).

2.3 The key-stakeholders of industrial parks

Brugha, R., & Varvasovszky, Z., (2000) recognize two types of stakeholders concerning projects. The first group is the primary stakeholders who are "intended project beneficiaries". They are directly affected by the project. The second group is secondary beneficiaries who are intermediaries but are able to influence the project. Hein, M., et al., (2017) do not make the distinction between the different types of stakeholders. The authors point out that stakeholders are "actors" that have an interest in a certain project with the power to influence the course of the project. A more detailed version of the stakeholder's concept regarding SIP's is provided by Kreiner et al., (2019). It stresses the importance of including key-stakeholders in the process of sustainable development inclusion in the industrial parks planning. Moreover, it categorizes the stakeholder's group into five types of groups whose interaction and interest with the SIP leads to the successful operation of the park. The first group is the *park management* team whose main tasks and responsibilities are to attract investment, to cooperate with the authorities, to develop infrastructure and they have the power and authority to decide over the park development. The second group includes all *companies* who are based in the park and are responsible for "co-determining the park development", creation of synergies among the companies and others, quality and prices of their manufactured products. The third group concerns the *employees of companies* based in the SIP. Their performance impacts the park's profits and turnover and therefore they demand security and proper income conditions. The fourth group is the *local government* who is responsible for the regulation of environmental, labour, taxes issues, among others. This stakeholder is also directly linked to the management of the park and is in charge of investment attraction and cooperation in infrastructure development and provision. Lastly, the fifth group of stakeholders involves *the local communities* that expect jobs creation, corporate citizenship, social responsibility, and environmentally sound operations (Kreiner et al., 2019). Gothmann, K., et al., (2015) argue that from the starting phase, different points of view and concerns of stakeholders must be considered. Besides that, by addressing the concerns of different stakeholders, one creates a shared vision for the further SIP development. In the planning and implementation of a project like SIP the support of involved parties or affected by the project is highly important in order to determine the success or failure of the project in the evaluation phase.

Highlights

In order to get a complete overview of the key-stakeholders of industrial parks, they can be categorised into five types. The first type is the park manager who is responsible for the activities of a certain SIP. The second type of key-stakeholders concern the companies based in a certain SIP. The third one is the employees of the companies. The fourth type is the local government and the last one is the communities around a certain SIP.

2.4 Strategic planning and operations management phases of SIP's in The Netherlands

Many industrial parks in The Netherlands were developed in the 1950's and 1960's. Since then, a national policy was introduced to boost the employment opportunities in the manufacturing sector. In the development and facilitation of industrial parks, the local governments are the main suppliers of land. Because of this policy and land

ownership power, they plan and develop industrial parks by themselves (Louw, E., & Bontekoning, Y., 2007). According to a CBS report (2014), the industrial park areas across the country have been expanded in about 30 percent (from 649 to 841 square kilometres)[11] between 1996 and 2012. Those industrial areas are not only expanded in the main cities like Amsterdam and Rotterdam, but also in smaller cities. The direct benefit of this expansion are the extra jobs creation and economic growth. In this regard, many forms of industrial parks have been developed in the last two decades mainly from a clustering point of view. When it comes to sustainability, eco-parks are rapidly growing especially in the agriculture sector. However, SIPs as defined by Kreiner et al., (2019), are not easy to identify in The Netherlands. In Annex 2, an overview of all existing Dutch industrial parks is displayed with a total sum of 3500 from which 250 are currently in a transformation phase to improve the use of energy sufficiently. In fact, ABC Westland was recently awarded being one of the best SIP's taking into account mainly the environmental dimension. They supply 40% of their energy from solar energy devices. On the contrary, there are many dated industrial parks that represent big concerns for government. According to Louw, E., & Bontekoning, Y., (2007), more than 27 percent of the stock of 95,000 hectares require updating. Consequently, many companies have moved to new industrial areas. This shows that local governments and other key-stakeholders are facing great challenges to transform traditional industrial parks into any similar to the SIP category.

Highlights
The strategic planning of space in The Netherlands is conducted by the (local) governments. Around 841m2 is currently occupied by industrial sites. The direct benefits of the industrial sites have been job creation and economic growth. Many forms of industrial sites such as science parks, technological and distribution sites are developed in the past two decades. However, SIP's as defined by Kreiner et al., (2019) are not easy to identify. There are around 350 industrial parks of which 250 are currently in a transformation process making it more environmentally friendly. This is due to the government's policy to become energy neutral by 2050. However, there is less attention given to the social sustainability aspects of industrial parks regarding their planning and operation management phases.

---

[11] Groei omvang bedrijventerreinen 30 procent in 16 jaar. (2016, August 19). Retrieved from https://www.cbs.nl/nl-nl/nieuws/2016/33/groei-omvang-bedrijventerreinen-30-procent-in-16-jaar

Chapter 3: Methodology

In this chapter the research methodology is outlined. In paragraph 3.1 the research strategy is described and illustrated. Furthermore, the methods used to conduct the research step by step, are described in this chapter.

3.1 Research design

In order to conduct this research in a structured and effective manner, the research process of case study was designed according to Yin, (2014) and other scholars. The research design is illustrated in Figure 5. The starting point of the research is the problem statement and research objectives which are described in Chapter 1. From this, the research question and its related sub-questions were derived. Based on finding the answers to the sub-questions, the research is further conducted. Following the illustration of research design, the research method, research strategy (case study and desk research) are described in detail.

Figure 5: Research design
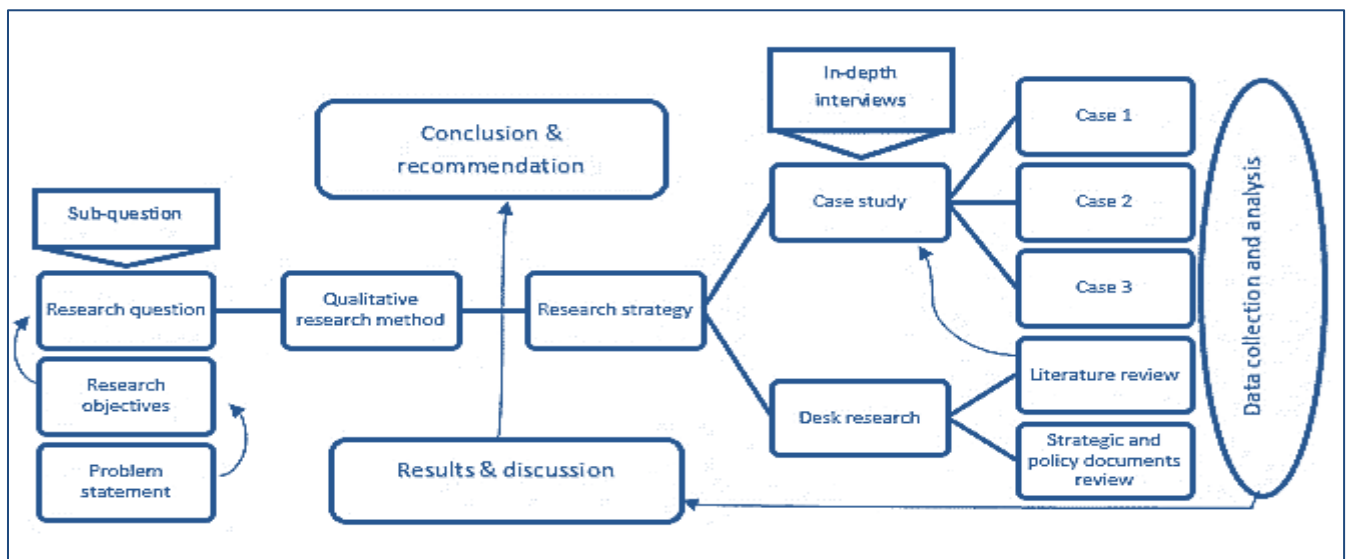
3.1.1 Qualitative research method

At the core of this research strategy lies the qualitative research method. This method is the most suitable method to find objective answers to the research question. It enables us to find out how the concept of social sustainability is perceived by the key-stakeholders and what the motivation behind their perceptions are. The method focuses on the "how", "why" and "what" of a specific issue rather than a numerical value of "how much" or "how many", which quantitative research tends to clarify[12]. Moreover, this method enables to analyse the descriptive unstructured data gathered from the depth interviews.

3.1.2 Research strategy

In order to find objective answers to the research question and sub-questions (see Chapter 1, paragraph 1.5) and to draw grounded conclusions, the case study and desk research strategies are applied to this research. At the core of these strategies

---

[12] Source: http://www.bl.uk/bipc/resmark/qualquantresearch/qualquantresearch.html.

lies the qualitative research method. The research strategy and process are illustrated below. Following that, the strategies and approaches applied to this research are explained and discussed.

3.1.3 Case study

It is an "empirical inquiry that investigates a contemporary phenomenon in-depth within its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident" (Yin, R. K., 2014, p. 16). According to (Yin, R. K., 2014, p. 2), doing a case study would be a preferred research method when research questions are "how" or "why" questions. In addition to that, Zainal, Z., (2007), argues that a case study is a robust research method and it is designed to conduct an in-depth research in the field of social sciences. When it comes to this research, it is a suitable strategy which enables us to go into the field and hold in-depth interviews with key-stakeholders of industrial parks. This in order to find out what the perceptions of key-stakeholders are regarding the social sustainability concept. Consequently, it enables us to find objective answers to the research question and its related sub-questions (Verschuren, P., & Dorewaard, H., (2010) p. 159). Since all of these circumstances are related to the nature of this study, this strategy is the most relevant method among others to constructively conduct this research. However, like other research strategies, this strategy has its disadvantages too. According to Yin, R. K., (2014), (p. 19), the main disadvantage of a case study method is the fact that "it is presumed to be less rigorous than other methods". He argues that "too many times, a case study researcher has been sloppy, has not followed systematic procedures, or has allowed equivocal evidence to influence the direction of the findings and conclusions".

When it comes to the type of case studies, Yin, R. K., (1984), outlines that there are four types of case studies. The first one is the so called 'holistic case study' which is based on a systematic approach and is useful when there is "no sub-unit and the underlying case is holistic of nature" itself. The second one is 'embedded case study' which focuses on different subunits of a specific phenomenon and is useful to apply to "put into perspective the holistic illusion" and to "strengthen internal validity". The third one is the 'single case design' which focuses on "representing an extreme or unusual case". The last one is the so called 'multiple case design' which enables the researcher to provide a "larger picture of a complex phenomenon" and "allows to compare different studies".

Since the main goal of this research is to find out what the perceptions of key-stakeholders of (sustainable) industrial parks are regarding the concept of social sustainability, naturally the most relevant type of case study for this research is *the multiple case study*. Therefore, there are three types of industrial parks selected carefully to get a complete picture of perceptions of the key-stakeholders (see the paragraph below). Following the data collection procedure, a comparison will be made between the data collected from the selected industrial parks regarding the cases.

Selected case studies

The first industrial park selected for this study is a park that has strong similarities to a SIP but focusses mainly on the environmental aspects of the sustainability concept. It is

also known as an eco-park: the ABC Westland. This park is awarded as the most SIP in the Netherlands from the energy efficiency point of view. The second case is a traditional industrial park in the transformation phase to a SIP. The third industrial park is a traditional park which is dated and needs to be transformed into a SIP. This with the purpose to safeguard its future existence. These three types of industrial parks are selected to identify if differences and similitudes among key-stakeholder's perceptions can be related to their sustainability level. The key-stakeholders of SIP's are: park managers, individual companies, employees and others. In table 4 an overview on the industrial parks' characteristics is provided

Table 4: Selected industrial parks for case study

Feature	Case 1 - ABC Westland	Case 2 - Schiebroek	Case 3 - Stepelo
Status	Eco-park awarded as most sustainable park in terms of energy efficiency	Traditional	Transformation phase into sustainable park
Sector	Agriculture (Agriculture & food products, logistics, horticulture etc.)	Diverse	Diverse
Location	Zuid-Holland, Westland	Zuid-Holland, Rotterdam	Twente, Haaksbergen
Number of companies	Around 100 companies	Around 35	83
Number of jobs	2.500	+-750	+-1.700

3.1.4 Literature and strategic documents review via desk research

Since an empirical study starts with a grounded theoretical framework, in this research the literature review method is applied to conduct the theoretical framework (see Chapter 2). On top of that, strategic (semi-) governmental policy documents, reports and strategic documents of the selected industrial parks for the cases studies are reviewed. By having reviewed these documents and reports, a comparison is made between the theoretical statements/ strategic plans and what is actually happening in the field regarding the concept of social sustainability in the context of (sustainable) industrial parks.

3.1.5 In-depth interviews

In order to analyse properly the perceptions of key-stakeholders of selected industrial parks on the concept of social sustainability, in-depth interviews were conducted. This method enables to analyse each key-stakeholders' thoughts, opinions and perception thoroughly (Boyce, C., & Neale, P., 2006). However, the research has also it's disadvantages since it's more time consuming than quantitative research by sending surveys to respondents (Boyce, B., & Neale, P., 2006). By analysing data from inside, getting a holistic view of the context and understanding people's behaviour, relevant and objective data were collected. Below the type of key-stakeholders are described and listed.

Selected key-stakeholders for in-depth interviews

For the selection of relevant interviewees among key-stakeholders, the definition of Kreiner et al., (2019) is applied (see paragraph 2.3). In spite of the interest to engage with all key-stakeholders, due to time limitations a few with decision making positions,

were interviewed to find out what their perceptions and understandings are regarding the concept of social sustainability in the context of their industrial park.

The following is the list of interviewees who were approached per case study:

i. *The local government:* this type of key-stakeholder is one of the most relevant if not the most relevant in the Dutch situation as this was discussed from literature in paragraph 2.2. Therefore, representatives from municipalities and province were approached to analyse their perceptions on this topic.

ii. *Park management:* next to local government is the park management another relevant stakeholder for this research. This is due to the fact that they have power and decision authority on the development of the park which could affect the sustainability performance of the SIP.

iii. *Individual companies:* the third key-stakeholder selected for this research are individual companies. Per selected industrial park for this research 3 companies based at certain industrial park were interviewed. The selected companies were those that function as the most sustainable companies (according to the park management) at the industrial park and one of them that usually takes the lead in the intention to transform the park towards SIP standards.

iv. *Employees:* the fourth key-stakeholder that was considered to be interviewed are the employees of the individual companies. This in order to find out what their perceptions are regarding the social dimensions of the sustainability concept in relation to their job satisfaction within their company. Per company 2 - 4 employees were considered.

v. *Cooperatives:* the fifth key-stakeholder selected are organizations like MKB-Nederland and VNO-NCW[13] that represent SME's in the Netherlands and advocates for sustainability concept.

In Figure 6, the sequential steps are illustrated which are taken to design and conduct the interviews with the selected key-stakeholders:

Figure 6: The process of conducting in-depth interview; Boyce, B., & Neale, P., (2006)

---
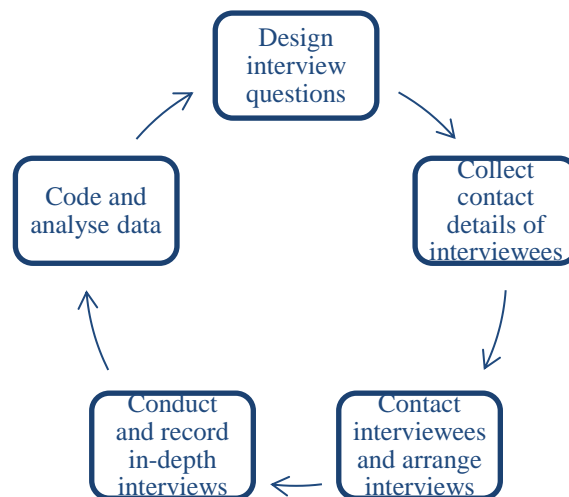
[13] Midden en Klein Bedrijf (MKB)-Nederland: is the largest entrepreneurs' organisation in the Netherlands. Some 120 branch organisations and 250 regional and local entrepreneurs' fellowships are affiliated to this umbrella organisation. All in all, MKB-Nederland promotes the interests of some 150.000 entrepreneurs, comprising areas as the construction, industry, retail, chain-store trade, recreation, and tourism, business services and health care and medical services.
VNO-NCW: is the national employers' federation, it has 160 branch organizations as members, these organize 115,000 companies. This includes 80% of the smaller corporations and nearly all larger businesses.

Step 1: Designed interview questions

Since the aim of this research is to find out what the perceptions of all key-stakeholders (local government, park management, individual companies and their employees and cooperatives representing multinationals and SME's), specific questionnaires were elaborated to make sure that relevant questions were asked in the context of each key-stakeholder's activities and point of views. Between 10 and 20 open questions were formulated which were based on the social sustainability indicators of the framework by Kreiner et. al., (2019). This is one of the most detailed (social) sustainability frameworks that intends to guide key-stakeholders in the planning and operational management phases regarding SIP's. Through this theory testing, the perceptions of key-stakeholders were analysed and reflected on the practicality and relevance of such theories in the real world. In appendix 3, the type of questions to different key-stakeholders are listed in the questionnaire.

Step 2: Collected contact details of interviewees

Through desk research contact details of the key-stakeholders was identified. Since this process is time consuming and difficult to collect the contact details of relevant persons within the organisations, due to privacy limitations, contact details of some of the interviewees were collected after the implementation of the first interview with the park manager. The park manager usually has a list of companies based on their park and can point out the right persons.

Step 3: Contacted interviewees and arranged interviews

After having collected contact details of interviewees, they were contacted via email firstly. In this email, the research background, objectives and its added value to the context of their activities, among other relevant aspects, were clarified. The email contact is followed by a telephone contact to arrange interviews.

Step 4: Conducted and recorded interviews

The interviews were conducted face to face separately with each interviewee. The interview started with a short introduction of the research and the interviewee was asked if it was fine with him or her to audio-record the interview. The information provided dealt with confidentiality. Therefore, an informed consent form was signed between the researcher and interviewee to accept ethical and privacy limitations of the research accordingly. As for the duration of the interview, it took about 30 minute per interview. During the first three interviews, the questions were tested and revised in order to make sure that relevant questions were asked to relevant key-stakeholders.

Step 5: Coded and analyses data

During this last step, the interviews are coded and analysed. This is done case by case and based on the types of key-stakeholders. This allowed to make comparisons between cases and the type of key-stakeholder's perceptions regarding social sustainability concept in the context of industrial parks. By proceeding in this way an answer was provided to the research question and more specifically to the related sub-questions. In appendix 3 the transcript of interviews is listed.

Chapter 4: Analysis of results

In this chapter the results of the in-depth interviews are presented and analysed. In paragraph 4.1, the key findings are presented case by case. More specifically, the perceptions of key-stakeholders on social sustainability regarding their industrial park are analysed. Following that, in paragraph 4.2 the three cases are compared, differences and similarities between the cases are analysed and outlined.

4.1 Analysis of findings in-depth interviews

In the tables below the findings from the in-depth interviews with key-stakeholders are presented per case. In annex 3, a more detailed tables of the findings are included.

4.1.1 Analysis case 1: ABC-Westland

Table 5: Results case study 1: ABC-Westland

Status	(Eco-park) awarded as a sustainable park in terms of energy efficiency
Sector	Agriculture (Agriculture & food products, logistics, horticulture etc.)
Location	Zuid-Holland, Westland
Number of companies	+-100 companies
Number of jobs	+-2.500

Type of Key-stakeholder	Number of interviewees	What is social sustainability for you?	Is CSR or similar schemes implemented?	Do you measure and report the social impact of the industrial park? If so, how do you do that?
Park manager	1	"Creating jobs in our region."	no	"Not yet"
Management company	0	-	-	-
Employees	0	-	-	-
Policymaker local government	2	"Our policy focuses mainly on energy transition. Sustainability is a challenge for us. In 2050 we want to become energy neutral." "When it's comes to social sustainability, we do not much. Because companies are for hard working industries to produce. However, we do have aspects of social sustainability incorporated in our policy e.g. created jobs for vulnerable people and creating jobs for the region."	no	"We do not do that. However, the MVO (a CSR foundation) Westland monitors it."
Representative of cooperatives (VNO-NCW)	1	"We represent SME's in the Netherlands and Brussels. For me social sustainability is that SME's contribute to job creation in the Netherlands in a sustainable way."	"Yes, to the extent of governmental policies in this regard."	"No, we don't."

The analysis and observations in the field show that this industrial site is doing well in terms of energy efficiency. The park manger and representatives from local government mentioned that very important investments have been made in this regard in the past years. This is reflected by the fact that the industrial site was awarded

as being one of the most environmentally sustainable sites in 2016 in The Netherlands. When it comes to social sustainability, the park manager states that "between 2005-2018 the industrial site has contributed significantly (+-15%) to region's employability opportunities". However, other aspects of social sustainability have been addressed less. He outlines that "in this regard some efforts have been made in close cooperation with schools/ knowledge institutes, like starting a demo-school for providing non-formal education (workshops, seminars, side visits etc.) to school children and international organizations looking for best practices in agriculture development. However, more efforts are needed in the coming years to make progress. Like improving the public transportation for employees and visitors (it takes currently around 1 hour to get from The Hague central station to the industrial site while the distance is +- 15km). The social aspect is currently not thoroughly included in the strategic planning of the industrial park. The park manager mentioned that this is very "challenging since the industrial site is owned privately by a group of shareholders who are profit oriented". This makes it difficult to convince them and the companies to invest more in social sustainability. Furthermore, the analysis shows that the perceptions of key-stakeholders regarding social sustainability is mainly based on job-creation. Their perception on the concept of sustainability is too general and focuses mainly on energy efficiency. The (social) sustainability, is currently not measured and reported.

4.1.2 Analysis case 2: Schiebroek

Table 6: Results case study 2: Schiebroek

Status	Traditional (currently working on energy transition)			
Sector	Diverse			
Location	Zuid-Holland, Rotterdam			
Number of companies	+-35			
Number of jobs	+-750			

Type of Key-stakeholder	Number of interviewees	What is social sustainability for you?	Is CSR or similar schemes implemented?	Do you measure and report the social impact of the industrial park? If so, how do you do that?
Park manager	1	"Creating jobs in our region." "At our industrial site there are around 60 owners who owns the space and rent it to businesses. We as park management are more less like concierge who takes care of the trees etc."	"It's up to individual companies. We do not monitor that."	"No, don't."
Management company	0	-	-	-
Employees	0	-	-	-
Policymaker local government	2	"Our policy focuses mainly on energy transition. Sustainability is a challenge for us. In 2050 we want to become energy neutral." "When it's comes to social sustainability, we do not much. Because companies are for hard working industries to produce. However, we do have aspects of social	"Not yet."	"By monitoring the number of jobs increased or decreased annually." "By dealing seriously with concerns and complains of surrounding communities."

		sustainability incorporated in our policy e.g. created jobs for vulnerable people and creating jobs for the region."		
Representative of cooperatives (VNO-NCW)	1	"We represent SME's in the Netherlands and Brussels. For me social sustainability is that SME's contribute to job creation in the Netherlands in a sustainable way."	"Yes, to the extent of governmental policies in this regard."	"No, we don't."

The analysis and field observations show that this industrial site/ business park is indeed very traditional and dated. It is a private owned space and has around 60 owners who are mainly focusing on renting their space to SMEs and earning money. Little attention is paid to the concept of sustainability in general and social sustainability. The fluctuation in companies establishing and leaving their businesses at this industrial site is very high. According to the park manager, "the owners of space and companies are mainly focussing on turnover and surviving. Our role as park managers is the one of a concierges". However, currently due to national policy, some steps are being taken by the industrial site in cooperation with the municipality regarding energy efficiency. The perceptions of key-stakeholders on social sustainability is mainly focussing on creating jobs. The park manager and policy makers at local governmental point out that "it is up to individual companies to implement CSR and measure and report on sustainability.". The analysis has also revealed that there is poor communication/ collaboration between the local government and the industrial site. The communities around the industrial site are not involved in the decision-making process. The only contact between the industrial site and communities are when there are complaints from the communities.

4.1.3 Analysis case 3: Stepelo-De Greune

Table 7: Results case study 3: Stepelo-De Greune

Status	In transformational phase			
Sector	Diverse			
Location	Twente, Haaksbergen			
Number of companies	+-83			
Number of jobs	+-1.700			
Type of Key-stakeholder	**Number of interviewees**	**What is social sustainability for you?**	**Is CSR or similar schemes implemented?**	**Do you measure and report the social impact of the industrial park? If so, how do you do that?**
Park manager	1	"For me it is creating jobs and contributing to the development of the region."	"There are agreements that have to be signed by individual companies who want to base here."	"Maybe with the municipality, but I don't know. We as park management don't do that."
Management company	2	Company A: (role model of a sustainable company in the region and beyond) "Creating jobs for the local communities." "Providing jobs to vulnerable people. In this regard we collaborate	"Yes, it is integrated in our guidelines and policies. On top of that we are committed to national policies in	"Not yet in terms of structurally and annually measuring and reporting it."

		with a local organisation that helps and guides (mentally) disabled people. We hire these individuals and they work at our organisation. This has added value to our organisation." "Social sustainability means to us also creating a harmonious, joy-full and an enabling environment for our employees to flourish. This reflects in the fact that the percentage of staff leaving our organisation is close to zero." Company B: "To us it means providing good employability opportunities and proper work conditions to our region."	hiring disabled people." "No, we are too small for that."	"No, we don't."
Employees	0	-	-	-
Policymaker local government	1	"To us it means creating sustainable jobs for the communities by attracting sustainable companies to the industrial site." "We find it also important that the industrial sites are doing more socially related activities in the region for example open days, non-formal education etc."	"Yes, we do. We have specific guidelines for selecting sustainable companies and agreements needs to be signed between the company which would like to be based at the industrial site owned by our municipality."	"Not, yet. We do monitor the number of jobs created and are looking to implement measurement tools in the near future."
Representative of cooperatives (VNO-NCW)	1	"We represent SME's in the Netherlands and Brussels. For me social sustainability is that SME's contribute to job creation in the Netherlands in a sustainable way."	"Yes, to the extent of governmental policies in this regard."	"No, we don't."

The analysis and observations show that this industrial site is indeed in a transformation and expansion phase. The local government has the ownership of the industrial site and has currently implemented a strategic plan to transform the industrial site into a SIP. Furthermore, the analysis shows that there is a coherent communication process (annual meetings to share information and discuss strategic developments) to in place between the local government, industrial site (park management and companies), the surrounding communities and other (key-) stakeholders. This is managed by a foundation (members: park management, companies and community representatives) and monitored by the local government. On top of that, the analysis reveals that the perceptions of key-stakeholders on social sustainability are quite advanced and in line with each other. The local government has CSR policies and agreements in place for selecting sustainable companies who want to establish their organisation at the industrial site. However, (social) sustainability is not yet structurally measured and reported. According to the park manager, "we are seeking for

opportunities to annually measure and report our (social) sustainability impacts.". According to the manager, the company A, does have clear sustainability strategies in place. When the manager is asked "how it comes that your organisation focusses thoroughly on the sustainability of your organisation's activities"? The park manager stated: "it is in our DNA!, it has become part of our DNA since we have always operated environmentally and human centred since we believe that this approach will lead to more success than focussing mainly on turnover.". As "champion" of sustainability, this organisation has taken naturally the leading role to inspire others. According to the manager, this reflects in the fact that it receives around 300 visitors from over the whole world ranging from businesses to policy makers, ambassadors and schools.

4.2 A comparison between the cases based on sub-questions

In the following sub-paragraphs, a comparison between the three cases are made based on the formulated sub-questions.

4.2.1 Organisation of strategic planning and operation management phases of industrial parks in The Netherlands

The analysis shows that the planning of industrial sites is conducted in any case (?) by the local governments. The local governments conduct and implement the so called "bestemmingsplannen" or space destination plans (reference: state regulations). According to the local government representatives of all three selected industrial sites (Stepelo, Schiebroek and ABC-Westland) "the local government decides within their space destination plan, what activities are allowed to take place" in a certain space in the municipality that are planned for industrial parks/ business parks. However, in the case of ABC-Westland and Schiebroek in Rotterdam, the space for industrial sites are privately owned. ABC-Westland (a cluster of vegetable and fruit growers and distributors) has a group of shareholders who have bought the space from the local government and rents it to private business. As long as the branch of companies meet the requirements and receive a permit from the municipality to establish their company at the industrial site, the municipality agrees with the company. In the case of Schiebroek Rotterdam (the business park consists of around 100 SMEs), there are around 60 private owners who use the space for their own business activities or rent it to other companies. The activities that are taking place within the industrial site are the responsibility of the shareholders, while the role of park management, who is financed by the individual companies, is more administrative at Stepelo and ABC-Westland and a concierge role for Schiebroek. The Stepelo in Haaksbergen (a planned sustainable business park) is owned by the municipality who rents or sells the space to businesses. Therefore, the role of the municipality is more engaged compared to the other industrial parks. According to the park manager of Stepelo, "the companies who want to be based at the business park, have to sign an agreement with the municipality" to commit themselves to the vision, rules and regulations of the municipality.

When it comes to the operational management of industrial sites, the analyses show that in the case of the traditional business park Schiebroek, there are no overall management activities. The role of the park management is currently "more or less the role of a concierge" as the park manager stated. According to the park manager,

"the companies are managing their own operations and they are allowed to do so as long as they meet the general rules and regulations set by the municipality". At ABC-Westland, whom are planning to become more sustainable, especially in the field of sustainable energy (the business park wants to be energy neutral by 2040), the role of the park management in the operational phase is an administrative role. The same role is also applicable for the park management of Stepelo.

4.2.2 Perceptions of key-stakeholders on social sustainability

The analysis shows that the overall perception of the park managers, local government representatives and the cooperatives, regarding the social sustainability of their business parks is the need to contribute to job creation in the region. The park manager of the traditional business park Schiebroek mentioned that they do contribute to job creation, but "other aspects are simply not interesting" since it is up-to individual companies. Furthermore, he mentioned "that the individual companies are commercial companies who rather focus on their turnover and surviving" than focusing on social sustainability aspects. He stated that "this has to be the role of the municipality to address and facilitate it". As for the business park of ABC-Westland, they are also mainly focusing on job creation and "keeping the knowledge of the vegetable and fruit growers in the region" to develop the sector further. They have also a more commercial approach. However, they try to become a more social sustainable business park through the development and implementation of social activities such as hiring more disabled employees and having a lab were school children can follow workshops/ excursions. The meetings between the park management, local government and schools have led to this idea. However, this is not structured, measured and reported. The business park management of Stepelo, mentioned that they "value social sustainability" and have integrated it in their activities and policies. The local governments and the cooperatives' (VNO-NCW) perception on the social sustainability, is that the business parks have to contribute to job creation and have to seek for an inclusive development to involve marginalized groups. However, they do not have certain policies in place yet that e.g. stimulates companies to address gender issues and other social sustainability aspects.

4.2.3 Relevant missing social sustainability indicators in existing frameworks

Within the case studies the social indicators of the framework of Kreiner et al., (2019), is applied into the in-depth interviews to find out how the concept of social sustainability is perceived by the key-stakeholders. The field research shows that the framework of Kreiner et al., (2019), does cover many relevant social indicators. However, some of the indicators have a poor meaning to the understandings of key-stakeholders. For example, the child care, anti-corruption and anti-competitive behaviour indicators are quite new for the key-stakeholders. Moreover, it seems that the social indicators of the frameworks need to be flexible and applicable to the local context of each SIP. Furthermore, the field research revealed that the framework is missing some relevant social indicators on two levels:

Level 1: Social Sustainability of SIP's
On the SIP level it is missing well defined indicators for park managers to facilitate and promote sustainable collaborations between the individual companies. For example, the promotion and facilitation of exchanging human capital between the companies.

On top of that, it is missing indicators which enables the park managers to promote and facilitate co-creation and the exchange of goods and services among the individual companies from ecology point of view.

Level 2: Social impact of SIP's on municipality level

On municipality level the framework is missing well defined social indicators on job creation for vulnerable people like: mentally disable people, refugees and unemployed senior people who are reaching the retirement age. And who became suddenly unemployed due to re-organisation at companies or other organisations in the region. Furthermore, the framework is missing well defined social indicators regarding the promotion and facilitation of community building in the region. For example, how a certain SIP could contribute to cultural and people-to-people binding activities in the region. Furthermore, it is missing well defined social indicators on the contribution of SIP's to inclusive and sustainable development of the region in general. Like the involvement of marginalized groups i.e. refugees and disabled individuals. Involvement of communities in decision making processes at the industrial park is also an indicator which is missing. Finally, it is missing a well-defined indicator on the contribution of the SIP's on human capital development in the region and contribution of individual companies as role models to development and acceleration of start-ups. Which could be an indicator to contribute and monitor job creation through entrepreneurship.

Chapter 5: Conclusion, limitations and further research

The main objective of this research was to find out what the perceptions of key-stakeholders of (sustainable) industrial parks are regarding the concept of social sustainability in the context of industrial sites and individual companies. The research question derived from this was: "How is social sustainability perceived by the key-stakeholders of industrial parks in the Netherlands?". In order to find a valid and generalizable answer(s) to this question, firstly the key-stakeholders were defined based on the literature review. Following that three industrial parks *(a traditional park: Schiebroek in Rotterdam; a sustainable park: ABC-Westland; and a park in transformation phase into a sustainable park: Stepelo-De Greune)* were included in the case study (qualitative research).

5.1 Conclusion

The study revealed that indeed a thorough understanding of the concept of sustainability and more specifically, social sustainability is missing among the majority of key-stakeholders. While the representative of the cooperative called VNO-NCW (an advocacy and lobby organisation for SME's and multinationals in the Netherlands) and the representatives of local governments are well aware of the concept of social sustainability, at industrial parks level i.e. park managers and individual companies a thorough understanding of the concept is missing. Except for and individual company (a 'champion' of (social) sustainability) based at the industrial site, Stepelo-De Greune, which has embedded the concept into its strategy and activities. However, there is to some extent an alignment in the understating's of social sustainability exist among the key-stakeholders. When asked: what does social sustainability mean to you in the context of industrial parks, the key-stakeholders unanimously replied: "job creation". This indicates that the key-stakeholders are currently not fully aware of other relevant indicators of the concept as well. Currently, the key-stakeholders strongly associate the concept of sustainability with energy efficiency, while the concept entails more than.

On top of that, the study has revealed that due to Paris agreement regarding global environmental issues, which was also signed by the Dutch government, an ambition policy has been launched to make the Netherlands energy neutral by 2050. In extent to this, around 250 industrial sites are currently into a transformation phase to become energy neutral. As this transformation is subsidised by the government, it encourages industrial parks to become sustainable in terms of energy efficiency. As a consequence, less attention has been given to social sustainability at industrial sites and individual companies. Therefore, it completely depends on individual companies either they embed social sustainability into their strategic planning and operational activities or not. Those companies that have embedded social sustainability are based goodwill creation from marketing and communication point of view.

Furthermore, the study has revealed that currently frameworks are not in place on industrial park level and many individual companies' level to structurally measure and report (social) sustainability impacts. The local governments mainly look on how many jobs are created, but the social effects of industrial parks to the direct communities. When talking about the communities, the analysis shows that communities are poorly involved in the decision-making processes within industrial parks. Both on industrial

parks level, and community level a structured and thorough collaboration is missing to move towards more social sustainability. This has mainly to do with the fact that companies are profit oriented either to survive or grow. The local governments are focussing more on the statistics regarding the job creation, while it's hardly questioned what those jobs exactly means to the surrounding communities: what are exactly to social effects of the industrial park to the surrounding communities? and how does the surrounding communities exactly think about these issues?

5.2 Limitations and further research

Like any research, this research had its limitations too. The fact that due to time limitations it was not feasible to carry out more case studies and interviews with key-stakeholders, the findings of this research could hardly be generalized to the rest of the Netherlands or other 2000+ industrial parks in the country. Furthermore, it was a pity that not all key-stakeholders like individual companies and their employees were engaged to participate in the research. This despite many efforts. Furthermore, as the concept of social sustainably appeared to be quite new for many stakeholders, it was difficult to find out in detail what the perceptions of the key-stakeholders are regarding the concept. However, the strength of the data collected through the in-depth interviews, within the three selected cases, is the fact that it is a primary data and quite objective. Therefore, objective conclusions could be drawn and the perceptions of key-stakeholders are analysed based on the insights gained through the in-depth interviews.

As the academic aim of this research was to add value to the understandings of key-stakeholders regarding the concept of social sustainability, the findings function as a good starting point to further explore throughout the Netherlands the perceptions of key-stakeholders regarding the concept. More specifically, it functions as a good starting point to explore the views of individual companies since they are at the end the one who decide either to embed the concept into their strategic planning and operational activities. Researching the possibilities for bottom-up approaches, rather than a top-down approach to move industrial parks to a more social sustainable parks, could be very interesting. Individual companies are profit oriented and are continuously asking: "What is in-it for me? Why should I…?". As researches show that companies, could benefit enormously if they operate more consciously and sustainably, it could be interesting for further research to find out how to advocate and for more socially sustainable industrial parks?

List of references

Axelsson et al., (2013). Social and Cultural Sustainability: Criteria, Indicators, Verifier Variables for Measurement and Maps for Visualization to Support Planning. AMBIO 42, 215-228. DOI 10.1007/s13280-012-0376-0.

Boyce, C., & Neale, P., (2006). CONDUCTING IN-DEPTH INTERVIEWS: A Guide for Designing and Conducting In-Depth Interviews for Evaluation Input. Pathfinder International Tool Series: Monitoring and Evaluation-2.

Brundtland report (1987). Report of the World Commission on Environment and Development: "Our common future". United Nations, General Assembly. 42 session, item 83 (e) of the provisional agenda. A-42-427.

Burgha R., & Varvasovszky Z., (2000). Stakeholder analysis: a review. Health policy and planning; 15(3): 239-246. Oxford University.

Caroline Flammer (2015). Does Corporate Social Responsibility Lead to Superior Financial Performance? A Regression Discontinuity Approach. Management Science. http://dx.doi.org/10.1287/mnsc.2014.2038

CBS, GRI and TSC (2014). Reporting on sustainable development at national, company and product levels: The potential for alignment of measurement systems in a post-2015 world. Statistics Netherlands (CBS), the Global Reporting Initiative (GRI) and The Sustainability Consortium (TSC). Sustainability Monitor for the Netherlands (2014). And indicator reporting. Statistics Netherlands (CBS).

Cutter et al., (2015). Sustainable Development Goals and Integration: Achieving a better balance between the economic, social and environmental dimensions, A study commissioned by the German council for sustainable development. Stakeholder Forum.

De toekomst van bedrijventerreinen: van uitbereiding naar herstructurering. Planbureau voor de Leefomgeving. Den Haag/Bilthoven, 2009. ISBN: 978-90-78645-20-7.

Eilenberg, E., Jabreen, Y., (2017). Social sustainability: a new conceptual framework. Faculty of Architecture and Town Planning, Technion, Israel Institute of Technology. DOI: 10.3390/su9010068

Elabras Veiga, L. B., Magrini, A., (2009). Eco-industrial park development in Rio de Janeiro, Brazil: a tool for sustainable development. Journal of cleaner production 17, 653-661.

Elkington, J., (1994). "Towards the sustainable corporation: Win-win-win business strategies for sustainable development", California Management Review 36, 2, 90-100.

Geng, Y., Cóté, R., (2003). Environmental management systems at the industrial level in China. Environmental management vol. 31, No. 6, pp. 784-794. DOI:10.1007/s00267-002-2854-9.

Goodland, R., (1995). The Concept of Environmental Sustainability. Annual Review of Ecology and Systematics 26: 1-24.

Gothmann, K., et al., (2015). Guidelines for Sustainable Industrial Areas (SIA). Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. Working Group on Sustainable Industrial Areas (SIA). Version 1.0, Eschborn, Oct. 2015.

Groei omvang bedrijventerreinen 30 procent in 16 jaar. (2016, August 19). Retrieved from https://www.cbs.nl/nl-nl/nieuws/2016/33/groei-omvang-bedrijventerreinen-30-procent-in-16-jaar

Hacking, T., & Guthrie, P., (2008). A framework for clarifying the triple bottom-line, integrated, and sustainability assessment. Environmental impact assessment review 28, 74-89.

Haji Rasouli, A., Kumarasuriyar, A., (2016). The social dimension of the sustainability: towards some definitions and analysis. Journal of social sciences for policy implications. Vol. 4, No. 2, pp. 23-34.

Hein, M., et al., (2017). Stakeholders power in industrial symbioses: A stakeholder value network approach. Journal of Cleaner Production. Vol. 148, 923-933.

Hofkes, M. W., Verbruggen, H., (2016). Groene groei (green growth) economisch verkend. University of Amsterdam. A report conducted for the network groene groei (green growth), www.netwerkgroenegroei.nl.

IBIS bedrijventerreinen (2019): https://www.ibis-bedrijventerreinen.nl/. An open source web data regarding industrial sites in the Netherlands provided annually by provinces/ municipalities.

IGEP (Indo-German Environment Partnership) and GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) guide on planning of sustainable industrial parks in India, 2015.

IPCC, 2007: Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. IPCC, Geneva, Switzerland, 104 pp.

Kreiner, I. and Franco-García, M.L. (2019) A Strategic Evaluation Framework to Assess the Sustainability Level of Industrial Parks in the Post-global Economy. In N. Yakovleva et al. (eds.), Sustainable Development Goals and Sustainable Supply Chains in the Post-global Economy, Greening of Industry Networks Studies 7, Springer Nature Switzerland AG 2019. https://doi.org/10.1007/978-3-030-15066-2_11

Kuhlman, T., & Farrington, J., (2010). Review on 'what is sustainability?'. Sustainability, 2(11), 3436-3448; doi:10.3390/su2113436.

Labuschapne, C., Brent, A. C., (2006). Social Indicators for Sustainable Project and Technology Life Cycle Management in the Process Industry. Chair of Life Cycle Engineering, Department of Engineering & Technology Management, University of Pretoria, Pretoria, 0002, South Africa.

Landelijke informatie IBIS bedrijventerreinen (2019): https://www.ibis-bedrijventerreinen.nl/. An open source web data regarding industrial sites in the Netherlands provided annually by provinces/ municipalities.

Louw, E., & Bontekoning, Y., (2007). Planning of industrial land in the Netherlands: its rationales and consequences. Economische en Sociale Geografie, Vol. 98, No. 1, pp. 121–129.

Luhe Wan et al., (2017). A study of regional sustainable development based on GIS/RS and SD model-Case of Hadaqi industrial corridor. Journal of cleaner production 142, 654-662.
Moen, R., (2009). A paper on the foundation and the history of the PDSA Cycle. Associates in Process Improvement-Detroit (USA).

Noufal, P., & Ramachandran, K. V., (2016). Industrial parks and regional economic development: Select literature review. International Journal of Advanced Education and Research. Vol. 2, Issue 2, Paage No. 98-101.

Pellenberg, P.H., (2002). Sustainable Business Sites in the Netherlands: A Survey of Policies and Experiences. In: Journal of Environmental Planning and Management 45 (1), pp. 59-84.

Pope, J., Annandale, D., & Morrison-Saunders, A., (2004). Conceptualising sustainability assessment. Environmental impact assessment review 24, 595-616.

Raworth et al., (2014). Safe and just operating spaces for regional social-ecological systems. Global Environmental Change 28, 227-238.

Sosnovskikh, S., (2017). Industrial clusters in Russia: The development of special economic zones and industrial parks. Russian Journal of Economics. Vol. 3, 174-199.

Stringer, E. T. (2013). *Action research*. Sage Publications.

Taddeo R., (2016). Local industrial systems towards the eco-industrial parks: the model of the ecological equipped industrial areas. Journal of cleaner production 131, 189-197.
UNIDO (United Nations Industrial Development Organisation) report on industrial development: 'The Role of Technology and Innovation in Inclusive and Sustainable Industrial Development', 2016.

Vallance, S., Perkins, H. C., & Dixon, J. E. (2011). What is social sustainability? A clarification of concepts. Geoforum, 42(3), 342-348.

Veleva, V., et al., (2015). Understanding and addressing business needs and sustainability challenges: lessons from Devens eco-industrial park. Journal of cleaner production 87, 375-384.

Verschuren, P., & Dorewaard, H., (2010). Designing a Research Project. Eleven International Publishing. Second Edition, The Hague 2010. ISBN 978-90-9531-572-3.

Yin, R.K., (1984). Case Study Research: Design and Methods. Beverly Hills, Calif: SAGE Publications, Inc.

Yin, R. K., (2014). Case study research: Design and methods (5th ed.). Thousand Oaks, California: SAGE Publication, Inc.

Zainal, Z., (2007). Case study as a research method. Journal of kemanusiaan issue 9.

Zhao, H., & Guo, S., (2017). Evaluating the comprehensive of eco-industrial parks by employing multi-criteria decision-making approach for circular economy. Journal of cleaner production 142, 2262-2276.

Zhe et al., (2016). An energy-based hybrid method for assessing industrial symbiosis of an industrial park. Journal of cleaner production 114, 132-140.

Appendix 1: Social sustainability indicators included in existing frameworks; Labuschapne, C., & Brent, A. C., (2006).

Name and type of literature	Society	Society and company (interlinkage)			Company internal				
	Community cohesion	Product responsibility	Community involvement of company	Stakeholder participation / Engagement	Training, education of staff	Equity	Fair labour practices	Human rights	Employee health and safety
Indicator frameworks									
United Nations[1]						x			
Global Reporting Intitiative[2]	x	x	x	x	x	x	x	x	x
IchemE Sustainability Metrics[3]				x		x	x		x
Wuppertal Indicators[4]						x			
European Conceptual Framework for Social Ind.[5]	x								
SIA literature									
Interorganizational Committee on Guidelines and Principles[6]	x			x		x			
Socioeconomic impacts for Energy Efficiency Project for Climate Change Mitigation[7]	x			x	x	x	x		
South Sydney Council SIA checklist[8]	x				x				
SIA categories for development projects in South Africa[9]	x			x	x	x			
South African social criteria for CDM project evaluation[10]				x	x	x			
Classification of social impacts according to Vanclay[11]	x					x	x		
Classification of social impacts according to Juslén[11]	x								
Classification of social impacts according to Gramling and Freudenburg[11]	x					x			
SIA Series' Guide to Social Assessment[12]	x								x
Government actions									
European Greenpaper on CSR[13]	x		x			x	x	x	x
Pressures from international financing organisations									
World Bank's Social Analysis Sourcebook[14]	x		x	x		x		x	
SRI Indexes									
Dow Jones Sustainability Index[15]		x	x	x	x	x	x	x	x
FTSE 4 GOOD[16]			x	x	x	x	x	x	x
JSE SRI Index[17]			x	x	x	x	x	x	x
Dominini 400 Index[18]		x	x		x	x	x	x	x
International standards and guidelines									
Global Compact[19]			x			x	x	x	x
Global Sullivan Principles[20]			x	x	x	x	x	x	x
Caux Round Table[21]			x	x	x	x	x	x	x
OECD Guidelines[22]			x	x	x		x	x	x
SA 8000[23]	x				x	x	x	x	x
AA 1000[24]	x		x	x		x	x	x	x
Investors in People[25]	x				x	x	x	x	x
Ethical Trading Initiative[26]	x					x	x	x	x
CSR standards									
Ethos Indicators[27]		x	x	x	x		x		x
Standards of CSR[28]			x	x	x	x	x	x	x
Danish Social Index[29]			x	x	x	x	x	x	x

[1] United Nations Commission on Sustainable Development (2001): Indicators of sustainable development: guidelines and methodologies. United Nations. Available from <http://www.un.org/esa/sustdev/natlinfo/indicators/indisd/indisd-mg2001.pdf>, visited on 19 November 2003

[2] Global Reporting Initiative (2002): Sustainability Reporting Guidelines 2002. Global Reporting Initiative, Boston

[3] Institution of Chemical Engineers, (2002): The Sustainability Metrics: Sustainable Development Progress Metrics recommend for use in the Process Industries. Institution of Chemical Engineers. Rugby

[4] Spangenberg JH, Bonniot O (1998): Sustainability Indicators – A Compass on the Road Towards Sustainability. Wuppertal Paper 81

[5] Centre for Survey Research and Methodology (ZUMA) (2000): Conceptual Framework and Structure of a European System of Social Indicators. EuReporting Working Paper no 9, Mannheim

[6] Interorganizational Committee on Guidelines and Principles for Social Impact Assessment (1995): Guidelines and Principles for Social Impact Assessment. Environmental Impact Assessment Review 15 (1) 11–43

[7] Vine E, Sathaye J (1999): Guidelines for the Monitoring, Evaluation, Reporting, Verification and Certification of Energy-Efficiency Projects for Climate Change Mitigation. US Environmental Protection Agency through the U.S. Department of Energy under Contract No. DE-AC03-76SF00098

[8] South Sydney Council (2004): The South Sydney Plan: Social Impact Assessment Checklist. <http://www.sscc.nsw.gov.au/router?model=c&item=1704>, visited on 21 January 2004.

[9] Khosa M (2000): Social Impact Assessment of Development Projects. In: Khosa M (ed), Infrastructure Mandate for Change 1994–1999. Human Sciences Research Council (HSRC) Publishers, Pretoria

[10] Brent AC, Heuberger R, Manzini D (2005): Evaluating projects that are potentially eligible for Clean Development Mechanism (CDM) funding in the South African context: A case study to establish weighting values for sustainable development criteria. Environment and Development Economics 10 (5) 631–649

[11] Vanclay F (2002): Conceptualising social impacts. Environmental Impact Assessment Review 22 (3) 183–211

[12] Branch K, Hooper DA, Thompson J, Creighton J (1984): Guide to Social Assessment: A framework for assessing social change. Westview Press, London

[13] European Commission: Employment and Social Affairs (2001): Promoting a European framework for corporate social responsibility. European Communities, Luxembourg

[14] Social Analysis and Policy Team (2003): Social Analysis Sourcebook: Incorporating Social Dimensions into Bank-supported projects. Washington DC, The World Bank: Social Development Department

[15] SAM Indexes (2003): Dow Jones Sustainability World Indexes Guide, Version 5.0. SAM Indexes GmbH, Zollikon-Zurich

[16] FTSE (2003): FTSE4Good Index Series: Inclusion Criteria. FTSE The Independent Global Index Company, London

[17] Johannesburg Stock Exchange (2004): JSE SRI Index: Background and Selection Criteria. <http://www.jse.co.za/sri/docs/>, visited on 9 January 2004

[18] Domini Social Investments (2003): The Domini 400 Social IndexSM. Available from <http://www.domini.com/Social-screening/creation_maintenance.doc_cvt.htm>, visited on 31 December 2003

[19] Kell G (2003): The global compact: origins, operations, progress and challenges. The Journal of Corporate Citizenship, Autumn, 35–49

[20] Global Sullivan Principles (2003): The Global Sullivan Principles of Social Responsibility. Available from <http://www.globalsullivanprinciples.org>, visited on 27 December 2003

[21] Caux Round Table (2003): Caux Round Table Principles for Business, English Translation. Available from: <http://www.cauxroundtable.org/ENGLISH.htm>, visited on 20 January 2003

[22] Organisation for Economic Co-Operation and Development (2000): The OECD Guidelines for Multinational Enterprises 2000 Revision. OECD Publication, Paris

[23] Social Accountability International (2003): Overview of SA8000. Available from <http://www.cepaa.org/SA8000/SA8000.htm>, visited on 4 March 2003

[24] AccountAbility (1999): Overview of the AA1000 framework. AccountAbility Publication, London, available from <http://www.accountability.org.uk/uploadstore/cms/docs/AA1000%20Overview.pdf>, visited on 29 December 2003

[25] Investors in People UK (2003): The Standard. Available from <http://iipuk.co.uk/IIP/Internet/InvestorsinPeople/TheStandard/default.htm>, visited on 29 December 2003

[26] Ethical Trading Initiative (2003): Ethical Trading Initiative Homepage. Available from <http://www.ethicaltrade.org>, visited on 29 December 2003

[27] Ethos Institute for Business and Social Responsibility (2001): ETHOS Corporate Social Responsibility INDICATORS. Instituto Ethos de Empresas e Responsabilidade Social, São Paulo

[28] Goodell E (ed) (1999): Social Venture Networks: Standards of Corporate Social Responsibility, Social Venture Networks, San Fransisco

[29] Danish Ministry of Social Affairs, KPMG, Socialforskningsinstituttet (2000): Social Index: Measuring a Company's social responsibility, Danish Ministry of Social Affairs, Copenhagen

Appendix 2: Top 250 industrial parks in the Netherlands, https://www.bedrijfspand.com/bedrijventerrein/, November 2017.

● [Bedrijventerrein¹⁴ A6, Emmeloord (43)](#)
● [Bedrijventerrein Aan De Fremme, Margraten (18)](#)
● [Airpark Brabant, Budel (12)](#)
● [Bedrijventerrein Alteveer, Ommen (6)](#)
● [Bedrijventerrein Ambacht/Nijverkamp, Veenendaal (53)](#)
● [Bedrijventerrein Arkervaart West, Nijkerk (22)](#)
● [Bedrijventerrein Arnestein, Middelburg (20)](#)
● [Bedrijventerrein Baanakkers III, Enter (10)](#)
● [Bedrijventerrein Baanderij, Leiderdorp (33)](#)
● [Bedrijventerrein Bargermeer, Emmen (23)](#)
● [Bedrijventerrein Barwoutswaarder, Woerden (28)](#)
● [Bedrijventerrein Beatrixhaven, Maastricht (17)](#)
● [Bedrijvenpark De Vallei, Ede (10)](#)
● [Bedrijvenpark Koot, Baarn (6)](#)
● [Bedrijvenpark Nesselande, Rotterdam (3)](#)
● [Bedrijvenpark Twente, Almelo (19)](#)
● [Bedrijventerrein Cruquius, Amsterdam (18)](#)
● [Bedrijventerrein Legmeer, Amstelveen (29)](#)
● [Bedrijventerrein Maastricht-Eijsden, Maastricht (12)](#)
● [Bedrijventerrein Bergweide, Deventer (24)](#)
● [Bedrijventerrein Beveland, Heerhugowaard (27)](#)
● [Bedrijventerrein Beverkoog, Alkmaar (19)](#)
● [Bedrijventerrein Beyerd En T Riet, Cuijk (11)](#)
● [Bedrijventerrein Biensma II, Grouw (4)](#)
● [Bedrijventerrein Bijsterhuizen (Incl Wijchen), Nijmegen (24)](#)
● [Bedrijventerrein Blankenstein A, Meppel (6)](#)
● [Bedrijventerrein Borchwerf II D (Halderberge), Oud-Gastel (23)](#)
● [Bedrijventerrein Borchwerf-Noord, Roosendaal (31)](#)
● [Bedrijventerrein Bovenland, Ter Aar (19)](#)
● [Bedrijventerrein Breeven, Best (20)](#)
● [Bedrijventerrein Breukelerwaard, Breukelen (35)](#)
● [Bedrijventerrein Broekpolder, Rijswijk (5)](#)
● [Bedrijventerrein Bt Mijdrecht, Mijdrecht (19)](#)
● [Bedrijventerrein Buiksloterham/Papaverweg, Amsterdam (18)](#)
● [Business-Zone Delta, Dronten (11)](#)
● [Businesspark Friesland West, Heerenveen (6)](#)
● [Bedrijventerrein Calveen, Amersfoort (56)](#)
● [Bedrijventerrein Centerpoort-Nieuwgraaf, Duiven (9)](#)
● [Bedrijventerrein Centerpoort Noord, Duiven (8)](#)
● [Bedrijventerrein Coenecoop I+II, Waddinxveen (18)](#)
● [Bedrijventerrein Compagnie Oost, Veenendaal (13)](#)
● [Bedrijventerrein Cornelis Douwesterrein, Amsterdam (27)](#)
● [Bedrijventerrein Cronesteijn - Rooseveltsstraat, Leiden (40)](#)
● [Bedrijventerrein Danenhoef, Oss (19)](#)
● [Bedrijventerrein de Baanstee Oost, Purmerend (13)](#)
● [Bedrijventerrein de Baanstee West, Purmerend (16)](#)

---

¹⁴ Bedrijventerrein is the Dutch word for Industrial Parks

- [Bedrijventerrein de Batterijen, Veenendaal (57)](#)
- [Bedrijventerrein de Berk, Echt (60)](#)
- [Bedrijventerrein de Boezem, Pijnacker (41)](#)
- [Bedrijventerrein de Burgt I, Barneveld (8)](#)
- [Bedrijventerrein de Compagnie, Veenendaal (16)](#)
- [Bedrijventerrein de Copen, Lopik (12)](#)
- [Bedrijventerrein de Corridor, IJsselstein (5)](#)
- [Bedrijventerrein de Dijken, Tuitjenhorn (5)](#)
- [Bedrijventerrein de Dubbelen, Eerde (17)](#)
- [Bedrijventerrein de Faktorij, Veenendaal (20)](#)
- [Bedrijventerrein de Geer, Zwijndrecht (24)](#)
- [Bedrijventerrein de Haagdoorn, Eersel (13)](#)
- [Bedrijventerrein de Hagen+De Biezen, Vianen (24)](#)
- [Bedrijventerrein de Hemmen-A7 (1+2), Sneek (42)](#)
- [Bedrijventerrein de Hoef, Amersfoort (29)](#)
- [Bedrijventerrein de Hoefslag, Bleiswijk (20)](#)
- [Bedrijventerrein de Kamp Zuid, Lichtenvoorde (6)](#)
- [Bedrijventerrein de Koekoek, Zevenbergen (14)](#)
- [Bedrijventerrein de Kronkels, Bunschoten (28)](#)
- [Bedrijventerrein de Lasso, Roelofarendsveen (8)](#)
- [Bedrijventerrein de Mars, Zutphen (33)](#)
- [Bedrijventerrein de Meerpaal, Houten (28)](#)
- [Bedrijventerrein de Munt II Fase I, Emmeloord (12)](#)
- [Bedrijventerrein de Noord, Dronten (5)](#)
- [Bedrijventerrein de Olm, Nieuwkoop (9)](#)
- [Bedrijventerrein de Rederij, Almere-Buiten (15)](#)
- [Bedrijventerrein de Rietvelden, None (20)](#)
- [Bedrijventerrein de Schaft, Houten (13)](#)
- [Bedrijventerrein de Schalm, Andelst (15)](#)
- [Bedrijventerrein de Sleutel, Bladel (45)](#)
- [Bedrijventerrein de Swadde I, Buitenpost (4)](#)
- [Bedrijventerrein de Tempel, Eindhoven (17)](#)
- [Bedrijventerrein de Trompet, Heemskerk (15)](#)
- [Bedrijventerrein de Vaart I,II & III, Almere-Buiten (24)](#)
- [Bedrijventerrein de Vendel, Veenendaal (9)](#)
- [Bedrijventerrein de Vergulde Hand, Vlaardingen (45)](#)
- [Bedrijventerrein de Weeren, Zwanenburg (25)](#)
- [Bedrijventerrein Develpoort, Zwijndrecht (14)](#)
- [Bedrijventerrein Diepswal, Leek (8)](#)
- [Bedrijventerrein Doornkade, Houten (10)](#)
- [Bedrijventerrein Dordtse Kil I, Dordrecht (23)](#)
- [Bedrijventerrein Dordtse Kil II, Dordrecht (34)](#)
- [Bedrijventerrein Dordtse Kil III, Dordrecht (78)](#)
- [Bedrijventerrein Driebond, Groningen (7)](#)
- [Bedrijventerrein Duin I, Schijndel (25)](#)
- [Bedrijventerrein Duin II, Schijndel (28)](#)
- [Bedrijventerrein Ede Bt A12 Zuid, Ede (23)](#)
- [Bedrijventerrein Eemspoort, Groningen (51)](#)
- [Bedrijventerrein Eindhoven Airport (Welschap A), Eindhoven (13)](#)
- [Bedrijventerrein Ekkersrijt, Son (15)](#)
- [Bedrijventerrein Esp, Eindhoven (13)](#)

- [Bedrijventerrein Euvelgunne, Groningen (13)](#)
- [Bedrijventerrein Fleuweweg, Enter (14)](#)
- [Bedrijventerrein Frankeneng, Ede (40)](#)
- [Bedrijventerrein Frezersplaats, Almere-Stad (8)](#)
- [Bedrijventerrein Gadering (Hoogvliet), Hoogvliet (121)](#)
- [Bedrijventerrein Geertruidapolder, Bergen op Zoom (5)](#)
- [Bedrijventerrein Geloërveld, Belfeld (27)](#)
- [Bedrijventerrein Gooisekant, Almere-Stad (9)](#)
- [Bedrijventerrein Goudse Poort, Gouda (48)](#)
- [Bedrijventerrein Gouwe Park, Moordrecht (17)](#)
- [Bedrijventerrein Graan Voor Visch-Zuid, Hoofddorp (21)](#)
- [Bedrijventerrein Graveland, 'S-, Schiedam (26)](#)
- [Bedrijventerrein Gravendam, Noordwijkerhout (18)](#)
- [Bedrijventerrein Groot Verlaat, Steenwijk (15)](#)
- [Bedrijventerrein Groot Vettenoord, Vlaardingen (100)](#)
- [Bedrijventerrein Groote Wetering, Bodegraven (12)](#)
- [Bedrijventerrein Grote Polder, Zoeterwoude (22)](#)
- [Bedrijventerrein Haarbrug Noord, Bunschoten (41)](#)
- [Bedrijventerrein Haatland, Kampen (21)](#)
- [Bedrijventerrein Halfweg Ii, Spijkenisse (25)](#)
- [Bedrijventerrein Harregat, Zuidland (11)](#)
- [Bedrijventerrein Haven, Waalwijk (16)](#)
- [Bedrijventerrein Havens / Benelux Workpark, Vlaardingen (13)](#)
- [Bedrijventerrein Heestereng, Ede (30)](#)
- [Bedrijventerrein Heimanswetering, Alphen aan den Rijn (25)](#)
- [Bedrijventerrein Hemrik, Leeuwarden (63)](#)
- [Bedrijventerrein Hogedijken Iii, Dokkum (7)](#)
- [Bedrijventerrein Hoofdweg-Noord, Capelle aan den IJssel (63)](#)
- [Bedrijventerrein Hoogeind, Helmond (28)](#)
- [Bedrijventerrein Hoogendijk, Alblasserdam (19)](#)
- [Bedrijventerrein Hooidijk, Steenwijk (21)](#)
- [Bedrijventerrein Hoorn '80, Hoorn (8)](#)
- [Bedrijventerrein Huiswaard, Alkmaar (7)](#)
- [Bedrijventerrein Isselt, Amersfoort (92)](#)
- [Bedrijventerrein I.T. Hapert, Hapert (16)](#)
- [Bedrijventerrein I.T. Panningen, Panningen (14)](#)
- [Bedrijventerrein Kamperhoek, Urk (10)](#)
- [Bedrijventerrein Kanaal Oost, Heerenveen (11)](#)
- [Bedrijventerrein Kanaalzone, Tilburg (8)](#)
- [Bedrijventerrein Kapelbeemd (Oost), Eindhoven (17)](#)
- [Bedrijventerrein Kerkweg-Zuid, Zuidland (14)](#)
- [Bedrijventerrein Kethelvaart, Kethel (16)](#)
- [Bedrijventerrein Kickersbloem 1, Hellevoetsluis (29)](#)
- [Bedrijventerrein Klaphek, Ede (19)](#)
- [Bedrijventerrein Klei-Oost (Noordwijk), Noordwijk (11)](#)
- [Bedrijventerrein Kloosterlanden, Deventer (15)](#)
- [Bedrijventerrein Koningsbuurt, Harlingen (7)](#)
- [Bedrijventerrein Korte Noorderweg, Hilversum (4)](#)
- [Bedrijventerrein Korteweg (Stellendam), Stellendam (12)](#)
- [Bedrijventerrein Krawinkel, Geleen (24)](#)
- [Bedrijventerrein Kruisstraat, Kruisstraat (14)](#)

- Bedrijventerrein Kruiswijk Ii, Anna Paulowna (7)
- Bedrijventerrein Laagraven-Liesbosch, Nieuwegein (25)
- Bedrijventerrein Lage Weide, Utrecht (32)
- Bedrijventerrein Lagedijk, Schagen (37)
- Bedrijventerrein Lansinghage, Zoetermeer (18)
- Bedrijventerrein Leeuwarden West, Leeuwarden (26)
- Bedrijventerrein Lekkerkerk-Oost, Lekkerkerk (18)
- Bedrijventerrein Lemsterhoek, Lemmer (20)
- Bedrijventerrein Leuken-Noord, Weert (11)
- Bedrijventerrein Loopkant-Liessent, Uden (31)
- Bedrijventerrein Lorentz I, Harderwijk (7)
- Bedrijventerrein Louterbloemen, Dordrecht (12)
- Bedrijventerrein Loven, Tilburg (24)
- Bedrijventerrein Maarssenbroek, Maarssen (7)
- Bedrijventerrein Markerkant, Almere-Stad (15)
- Bedrijventerrein Marslanden, Zwolle (52)
- Bedrijventerrein Marssteden, Usselo (17)
- Bedrijventerrein Meemortel, Budel (19)
- Bedrijventerrein Mercuriushaven (Gemengd), Amsterdam (113)
- Bedrijventerrein Merenwijk, Leiden (7)
- Bedrijventerrein Messchenveld, Assen (6)
- Bedrijventerrein Middelland Noord, Woerden (11)
- Bedrijventerrein Middelland Zuid, Woerden (28)
- Bedrijventerrein Molenveld, Reuver (13)
- Bedrijventerrein Molenwatering, Spijkenisse (20)
- Bedrijventerrein Molenwetering, Alphen aan den Rijn (46)
- Bedrijventerrein Nagelerweg 1+2, Emmeloord (64)
- Bedrijventerrein Nieuw Schaik, Leerdam (14)
- Bedrijventerrein Nieuw-Vennep Zuid, Nieuw-Vennep (51)
- Bedrijventerrein Nieuwe Park West, Gouda (11)
- Bedrijventerrein de Mors Noorddeel Oost, Rijssen (17)
- Bedrijventerrein Noord, Weesp (42)
- Bedrijventerrein Noorderhoogebrug, Groningen (13)
- Bedrijventerrein Noordermors, Rijssen (10)
- Bedrijventerrein Noordermors 2, Rijssen (18)
- Bedrijventerrein Noordersluis (V/H +Noordersluis Zo + Westerdreef), Lelystad (19)
- Bedrijventerrein Noorderveld, Zaanstad (31)
- Bedrijventerrein Noordoost Kwadrant, Sliedrecht (21)
- Bedrijventerrein Oosteind/Kooyhaven Ea, Papendrecht (31)
- Bedrijventerrein Oosterhoogebrug, Groningen (14)
- Bedrijventerrein Oostervaart, Lelystad (13)
- Bedrijventerrein Oostpoort, Harlingen (10)
- Bedrijventerrein Oude Molen, Halsteren (15)
- Bedrijventerrein Oudenrijn, Utrecht (21)
- Bedrijventerrein Oudorp, Oudorp (43)
- Bedrijventerrein Overdie, Alkmaar (28)
- Bedrijventerrein Overspoor-Oost, Wognum (4)
- Bedrijventerrein Overvecht, Utrecht (26)
- Bedrijventerrein Papendorp/Nieuwerijn, Utrecht (11)
- Bedrijventerrein Peizerweg/Suikerunie, Groningen (6)
- Bedrijventerrein Pinnepot, Oostvoorne (13)

- [Bedrijventerrein Plaspoelpolder, Rijswijk (36)](#)
- [Bedrijventerrein Plettenburg-De Wiers Zuid, Nieuwegein (36)](#)
- [Bedrijventerrein Polder Het Nieuwland, Alblasserdam (22)](#)
- [Bedrijventerrein Poldervlak, Almere-Buiten (19)](#)
- [Bedrijventerrein Poort Van Midden-Gelderland Zuid (Heterenkum), Heteren (14)](#)
- [Bedrijventerrein Prinsenland, Rotterdam (24)](#)
- [Bedrijventerrein Reeuwijkse Poort, Reeuwijk-Dorp (8)](#)
- [Bedrijventerrein Reinierpolder, Steenbergen (18)](#)
- [Bedrijventerrein Revelhorst III, Zutphen (16)](#)
- [Bedrijventerrein Rijnhaven (Alphen A/D Rijn), Alphen aan den Rijn (21)](#)
- [Bedrijventerrein Rokkehage, Zoetermeer (10)](#)
- [Bedrijventerrein Rondven, Maarheeze (30)](#)
- [Bedrijventerrein Rotterdam Noordwest, Rotterdam (130)](#)
- [Bedrijventerrein Schaapsloop 1, Valkenswaard (24)](#)
- [Bedrijventerrein Schaapsloop 2, Valkenswaard (27)](#)
- [Bedrijventerrein Schiebroek, Rotterdam (11)](#)
- [Bedrijventerrein Schoonhoven-Oost, Schoonhoven (6)](#)
- [Bedrijventerrein Schuttersveld, Enschede (14)](#)
- [Bedrijventerrein Seggelant, Vierpolders (17)](#)
- [Bedrijventerrein Slingerweg, Breda (18)](#)
- [Bedrijventerrein Sloterdijk Iii-Zuid, Amsterdam (23)](#)
- [Bedrijventerrein Smakterheide I, Venray (13)](#)
- [Bedrijventerrein Spaanse Polder, Rotterdam (109)](#)
- [Bedrijventerrein Spaanse Polder (Schiedamse Deel), Schiedam (19)](#)
- [Bedrijventerrein Spoorzicht, Nieuw-Vennep (14)](#)
- [Bedrijventerrein 'T Ges, Sneek (4)](#)
- [Bedrijventerrein T Lochter Oost II, Nijverdal (8)](#)
- [Bedrijventerrein Tonisseweg I, Oude-Tonge (15)](#)
- [Bedrijventerrein Trade Port West, Blerick (16)](#)
- [Bedrijventerrein Turfkade, Almelo (23)](#)
- [Bedrijventerrein Twentekanaal Zuid, Hengelo (9)](#)
- [Bedrijventerrein Twentepoort, Almelo (54)](#)
- [Bedrijventerrein Vaanpark, Barendrecht (60)](#)
- [Bedrijventerrein Veegtes, Venlo (22)](#)
- [Bedrijventerrein Venlo Trade Port, Blerick (46)](#)
- [Bedrijventerrein Verrijn Stuart, Diemen (22)](#)
- [Bedrijventerrein Vinkenwaard-Zuid, Alblasserdam (26)](#)
- [Bedrijventerrein Voorst, Zwolle (19)](#)
- [Bedrijventerrein Vriezerbrug, Vries (17)](#)
- [Bedrijventerrein Waarderpolder, Haarlem (64)](#)
- [Bedrijventerrein Watergoor, Nijkerk (6)](#)
- [Bedrijventerrein Weg En Land, Bergschenhoek (19)](#)
- [Bedrijventerrein Weitzelpoort 3, Vriezenveen (11)](#)
- [Bedrijventerrein West Kanaaldijk, Nijmegen (10)](#)
- [Bedrijventerrein Westerspoor-Zuid, Zaanstad (11)](#)
- [Bedrijventerrein Wijchen Oost, Wijchen (17)](#)
- [Bedrijventerrein Zandhorst I + II, Heerhugowaard (14)](#)
- [Bedrijventerrein Zandhorst III, Heerhugowaard (28)](#)
- [Bedrijventerrein Zendijk, IJsselmuiden (9)](#)
- [Bedrijventerrein Zoutman, Reeuwijk-Dorp (11)](#)
- [Bedrijventerrein Zuiderdel, Broek op Langedijk (10)](#)

● [Bedrijventerrein Zwolsehoek Fase III, Urk (21)](#)	
● [Bedrijventerrein Zwolsehoek Fase IV, Urk (28)](#)	

Case 1: ABC-Westland

#	Park management	Manageme nt of the company	Empl oyees		Policy maker local government		Representative of cooperative (VNO-NCW)
What is social sustainability for you in the context of industrial parks located in your region of governance?	For me is social sustainability creating jobs for the communities in our region.	-	-	What is social sustainability for you in the context of industrial parks located in your region of governance?	Our policy focusses mainly on energy transition. Sustainability is a challenge for us. There many subsidy's in this regard to facilitate sustainable energy transition. In 2050 we want to be energy neutral. When it's come to social sustainability, we do not much. Because companies are for hard working industries to produce. However, we do have aspects of social sustainability incorporated in our policy e.g. created jobs for invalid persons and creating jobs. We delegate this to MVO Westland who focusses on social sustainability.	What is social sustainability for you in the context of the outcome of the activities of SME's which you represent?	We represent SME's in the Netherlands and Brussels. For me social sustainability is that SME's contribute to job creation in the Netherlands in a sustainable way.
What motivated you to establish the industrial park on this site?	Because of the central location, the fruit and vegetables cluster of growers. And it was an empty space which shareholders have bought it from the local government. And to develop the sector here.	-	-	How where you involved during the planning phase of the industrial park?	It's a private industrial site owned by shareholders who have bought the space and rents it to companies. However, we are involved in terms of regulations and we have policy on what kind of companies are allowed to base there.	How do you make sure that the labour conditions within companies you represent are well development and implemented?	We do inform the companies about the need for labour conditions and there are rules and regulations from the government. However, we do not directly influence the companies.

How where you involved during the planning phase of the industrial park?	It's private industrial site so we were from the beginning involved.	-	-	How do you involve the communities in and around the industrial park in the decision-making processes regarding the production of the space planned for (the expansion) industrial parks? This is in order to enhance civility and safeguard the democratic rights of the community.	We do not involve communities in decision making processes. The park management does this by organizing information gatherings. However, we do inform the communities through local newspaper regarding expansion of the industrial site. On top of that, we have the destination plan documents which is published on our website for the communities.	How do you stimulate the companies to create proper jobs for the communities in and around the industrial park where those companies are based?	We do not directly focus on this, but we do inform the companies we represent .
How is the communication structured/ organized within the industrial park?	Within the industrial site we have annual meetings to discuss changes, plans etc. and we also meet on regular basis with other industrial sites in the region to discuss how the develop land, how to innovate, how to organize infrastructure	-	-	How do you guarantee the safety and health of the communities in and around the industrial park?	We have safety policy and guidelines that we implement.	How do you stimulate the companies to contribute to the wellbeing and human capital development through formal and non-formal educational activities, in and around the industrial park where those companies are based?	By addressing it during the conferences we organize. In this we cooperate with the government.
How do you involve the communities in and around the industrial park in the decision-making processes regarding the production of the space planned for the expansion of the industrial park? This is in order to enhance civility and safeguard the democratic rights of the community.	We have a foundation that focusses on the communications with communities and we have newspaper.	-	-	How do you prevent future casualties and guarantee the security of the communities in and around industrial sites?	We have safety policy and guidelines that we implement.	How do you stimulate those companies to contribute to the development of the region in terms of poverty reduction, job creation for vulnerable people, promotion of entrepreneurship among unemployed youth?	By addressing it throughout our informative and discussion activities and sharing the policies.
How do you inform the communities in and around the industrial park	Through our newsletter and informative gatherings.	-	-	How do you ensure that industrial parks contribute to	By monitoring it. We see a significant growth of job creation and we	Do you promote development and implementation of gender	Not directly, but we do organize events around different

about your activities?				the development e.g. job creation for the region?	have the lowest number of unemployment in our region.	policies by the companies you represent? If so, how? If not, why not?	governmental policies.
How do you guarantee the safety and health of the communities in and around the industrial park?	We have camera's, and rules and regulations in place that companies have to commit to	-	-	How do you measure the positive socially related impacts of the industrial parks to the community in your area of governance?	We do not do that. However, the MVO Westland monitors it.	Do you stimulate the companies which you represent, to enable qualified disabled people to work at those companies?	Not directly, but we have campagnas. In the same time we realize that it is a big investment for companies
How do you prevent future casualties and guarantee the security of the communities in and around industrial sites?	By lessons learned and by annually updating our rules and regulations. Municipality is responsible for this	-	-	Have you established indicators in order to measure the industrial parks impacts?	No indicators	Do you stimulate the companies which you represent to enable migrants or newcomers to work at those companies?	No
Does the park have a secured access? What criteria are checked?	Yes, we have cameras, and rules and regulations in place so that companies do not bring chemical stuff on the site without safety.	-	-	How do you facilitate public transportation which guarantees an efficient service from dwelling sites to industrial park for the community/ visitors?	We have a good infrastructure for cars and goods transportation means. And we have developed our policy to focus more on this in the coming years. However, the public transportation is poor and we are working on this.	Do you promote the implementation of CSR or similar schemes at companies you represent?	Yes, to the extent of governmental policies in this regard.
How does your industrial park contribute to improve the labor conditions in the region?	It's up to individual companies. We do try to stimulate them through our informative gatherings.	-	-	Do you have policies in place that the industrial parks have to commit themselves to? If so, what does these policies include?	No	Do you measure and report the social impact of the companies you represent? If so, how do you do that?	If not, why not? No, we don't.
How do you contribute to job-creation for the communities in and around the industrial park?	By developing the sector in the region and keeping the knowledge and jobs here through clustering approach	-	-	Based on your experience as a policy maker, do you have suggestions for missing indicators that are not yet addressed in existing frameworks for sustainability measurement	Not really	Based on your experience as a practitioner, do you have suggestions for missing indicators that are not yet addressed in existing frameworks?	Not really.

				of industrial parks?			
Is the job creation contribution of your industrial park to the region substantial? Are jobs with value created?	Yes, we have the lowest unemployment rate of the country here and throughout the years we have created dozens of jobs here for the communities.	-	-				
How does your industrial park contribute to the wellbeing and human capital development through formal and non-formal educational activities in and around the industrial park?	We have a lab were workshops are provided for the primary school. In the future we want also provide education here to foreigners seeking for knowledge.	-	-				
Does your industrial park contribute to the development of the region in terms of poverty reduction, job creation for vulnerable people, promotion of entrepreneurship among unemployed youth ? If so, how ? If not, why not?	Yes, we do contribute to job creation but not precisely on other aspects.	-	-				
Does a center exist which provides education, leisure, local supply, common catering, medical services for the tenants?	Yes, we have a lab for primary school but we have to develop it further.	-	-				
How do you create a sense of community for the employees of the industrial park and the communities in and around the industrial park?	Most of the people working here are from the region. Therefore the people know each other, however, we do not have special activities focusing on this?	-	-				
Are there any gender policies implemented in the resident companies? Has the park itself a policy related to it?	No we do not focus on this specifically. We rather focus on the capacity of the employee and that is how we select employees.	-	-				
Are there any policies	Not specifically, we focus on the	-	-				

implemented to enable qualified disabled people to work at Industrial parks?	capacities of individual employee.						
Are there any policies implemented to enable migrants or newcomers to work at the Industrial park?	no	-	-				
Is CSR or similar schemes implemented?	no	-	-				
Do you have any guidelines, rules & regulations that the companies have to commit themselves to in the procedure of basing their company at your industrial park? If so, what do these documents include?	Not yet	-	-				
Do you measure and report the social impact of the industrial park? If so, how do you do that?	Not yet	-	-				
Based on your experience as a practitioner, do you have suggestions for missing indicators that are not yet addressed in existing frameworks?	Not yet	-	-				

Case 2: Schiebroek

#	Park management	Management of the company	Employees		Policy maker local government		Representative of cooperative (VNO-NCW)
What is social sustainability for you in the context of industrial parks located in your region of governance?	At our industrial site there are around 60 owners who owns the space in total and rent their space. We as park management are more less like concierge who takes care of the	-	-	What is social sustainability for you in the context of industrial parks located in your region of governance?	Our policy focuses mainly on energy transition. Sustainability is a challenge for us. In 2050 we want to become energy neutral." "When it's comes to social sustainability, we do not much. Because	What is social sustainability for you in the context of the outcome of the activities of SME's which you represent?	We represent SME's in the Netherlands and Brussels. For me social sustainability is that SME's contribute to job creation in the Netherlands in a sustainable way.

	trees etc. social sustainability is for me creating jobs.				companies are for hard working industries to produce. However, we do have aspects of social sustainability incorporated in our policy e.g. created jobs for vulnerable people and creating jobs for the region.		
What motivated you to establish the industrial park on this site?	It's private owned by around 60 shareholders. It is because of the central location	-	-	How where you involved during the planning phase of the industrial park?	I was not involved in the foundation of the industrial site late 80's and begin 90's.	How do you make sure that the labour conditions within companies you represent are well development and implemented?	We do inform the companies about the need for labour conditions and there are rules and regulations from the government. However, we do not directly influence the companies.
How where you involved during the planning phase of the industrial park?	We were not involved.	-	-	How is the communication structured/ organized between the industrial park and your authority?	Via the park manger and entrepreneurs association	How do you stimulate the companies to create proper jobs for the communities in and around the industrial park where those companies are based?	We do not directly focus on this, but we do inform the companies we represent .
How is the communication structured/ organized within the industrial park?	There are informative meetings, but it's rarely joined by companies because they are busy with their work.	-	-	How do you involve the communities in and around the industrial park in the decision-making processes regarding the production of the space planned for (the expansion) industrial parks? This is in order to enhance civility and safeguard the democratic rights of the community.	The changes and expansion of the industrial site goes through formal request procedures coordinated by the municipality. At this moment, no expansion is planned.	How do you stimulate the companies to contribute to the wellbeing and human capital development through formal and non-formal educational activities, in and around the industrial park where those companies are based?	By addressing it during the conferences we organize. In this we cooperate with the government.
How do you involve the communities in and around the	We inform the community but do not	-	-	How do you guarantee the safety and health of the	Through implemented formal procedures and	How do you stimulate those companies to contribute to the	By addressing it throughout our informative and discussion

industrial park in the decision-making processes regarding the production of the space planned for the expansion of the industrial park? This is in order to enhance civility and safeguard the democratic rights of the community.	involve them directly in the process			communities in and around the industrial park?	monitoring system as stated in the destination plan i.e. environmental circle tool and type of companies).	development of the region in terms of poverty reduction, job creation for vulnerable people, promotion of entrepreneurship among unemployed youth?	activities and sharing the policies.
How do you inform the communities in and around the industrial park about your activities?	Through local newspaper and newsletter. And via our website. However, it's very limited.	-	-	How do you ensure that industrial parks contribute to the development e.g. job creation for the region?	By maximal facilitating companies. We do not have any policy that forces the companies to higher certain type of employees.	Do you promote development and implementation of gender policies by the companies you represent? If so, how? If not, why not?	Not directly, but we do organize events around different governmental policies.
How do you guarantee the safety and health of the communities in and around the industrial park?	There are rules and regulations from the municipality. And we have destination plan. Not all kind of companies are allowed to base here.	-	-	How do you measure the positive socially related impacts of the industrial parks to the community in your area of governance?	By monitoring the number of jobs created and addressing the complaints of surrounding communities.	Do you stimulate the companies which you represent, to enable qualified disabled people to work at those companies?	Not directly, but we have campagnas. In the same time we realize that it is a big investment for companies
How do you prevent future casualties and guarantee the security of the communities in and around industrial sites?	There are rules and regulations from the municipality.	-	-	Have you established indicators in order to measure the industrial parks impacts?	The number of jobs and signals/ observations from surrounding communities	Do you stimulate the companies which you represent to enable migrants or newcomers to work at those companies?	No
Does the park have a secured access? What criteria are checked?	Yes, we have cameras and the infrastructure	-	-	How do you facilitate public transportation which guarantees an efficient service from dwelling sites to industrial park for the community/ visitors?	The industrial site is on walking distance from public transportation (bus and tram) and is directly connected to surrounding communities.	Do you promote the implementation of CSR or similar schemes at companies you represent?	Yes, to the extent of governmental policies in this regard.
How does your industrial park contribute to improve the labor conditions in the region?	We do not have direct influence on that. It's up to individual companies.	-	-	Do you have policies in place that the industrial parks have to commit themselves to? If so, what does these policies include?	Rules and regulations which are included in the destination plan.	Do you measure and report the social impact of the companies you represent? If so, how do you do that?	If not, why not? No, we don't.

How do you contribute to job-creation for the communities in and around the industrial park?	Throughout the years the amount of companies has increased and with that more jobs have been created. However, during the financial crisis there was a lot of empty space which is now recovering.	-	-	Based on your experience as policy maker, do you have suggestions for missing indicators that are not yet addressed in existing frameworks for (social) sustainability measurement of industrial parks?	- Collectively and strong networks (for companies and employees at industrial site/ the "residents") - Identity and attraction: a better and more friendly appearance. - Diversity and functionality: the number of facilities which could be used by surrounding communities too.	Based on your experience as a practitioner, do you have suggestions for missing indicators that are not yet addressed in existing frameworks?	Not really.
Is the job creation contribution of your industrial park to the region substantial? Are jobs with value created?	It could be more, but we do contribute to job creation.	-	-				
How does your industrial park contribute to the wellbeing and human capital development through formal and non-formal educational activities in and around the industrial park?	We do not have such policies	-	-				
Does your industrial park contribute to the development of the region in terms of poverty reduction, job creation for vulnerable people, promotion of entrepreneurship among unemployed youth ? If so, how ? If not, why not?	Yes, when it comes to job creation	-	-				
Does a center exist which provides education, leisure, local supply, common catering, medical services for the tenants?	Not yet, it has come from the municipality	-	-				
How do you create a sense of community for	The companies are busy with	-	-				

the employees of the industrial park and the communities in and around the industrial park?	surviving and every company is busy with its own job						
Are there any gender policies implemented in the resident companies? Has the park itself a policy related to it?	No, it's up to individual companies	-	-				
Are there any policies implemented to enable qualified disabled people to work at Industrial parks?	No, it's up to individual companies	-	-				
Are there any policies implemented to enable migrants or newcomers to work at the Industrial park?	Not especially	-	-				
Is CSR or similar schemes implemented?	It's up to individual companies. We do not monitor that	-	-				
Do you have any guidelines, rules & regulations that the companies have to commit themselves to in the procedure of basing their company at your industrial park? If so, what do these documents include?	Yes, they have to meet requirements of the destination plan of municipality	-	-				
Do you measure and report the social impact of the industrial park? If so, how do you do that?	We don't	-	-				
Based on your experience as a practitioner, do you have suggestions for missing indicators that are not yet addressed in existing frameworks?	No	-	-				

Case 3: Stepelo-De Greune

#	Park management	Management of the company	Employees		Policy maker local government		Representative of cooperative (VNO-NCW)
What is social sustainability for you in the context of industrial parks located in your region of governance?	For me it is creating jobs and contributing to the development of the region	Company A: (role model of a sustainable company in the region and beyond) "Creating jobs for the local communities." "Providing jobs to vulnerable people. In this regard we collaborate with a local organisation that helps and guides (mentally) disabled people. We hire these individuals and they work at our organisation. This has added value to our organisation." "Social sustainability means to us also creating a harmonious, joy-full and an enabling environment for our employees to flourish. This reflects in the fact that the percentage of staff leaving our organisation is close to zero." Company B: "To us it means providing good employability opportunities and proper work conditions to our region."	-	What is social sustainability for you in the context of industrial parks located in your region of governance?	"To us it means creating sustainable jobs for the communities by attracting sustainable companies to the industrial site." "We find it also important that the industrial sites are doing more socially related activities in the region for example open days, non-formal education etc."	What is social sustainability for you in the context of the outcome of the activities of SME's which you represent?	We represent SME's in the Netherlands and Brussels. For me social sustainability is that SME's contribute to job creation in the Netherlands in a sustainable way.
What motivated you to establish the industrial park on this site?	Because of the central location		-	How where you involved during the planning phase of the	I was not involved.	How do you make sure that the labour conditions within	We do inform the companies about the need for labour conditions and

				industrial park?		companies you represent are well development and implemented?	there are rules and regulations from the government. However, we do not directly influence the companies.
How where you involved during the planning phase of the industrial park?	As park management de wo not exist since the start of the development of the site. Therefore we were not involved.		-	How is the communication structured/ organized between the industrial park and your authority?	We have direct communication with the park management and entrepreneurs association.	How do you stimulate the companies to create proper jobs for the communities in and around the industrial park where those companies are based?	We do not directly focus on this, but we do inform the companies we represent .
How is the communication structured/ organized within the industrial park?	We have meetings on regular basis were companies can attend		-	How do you involve the communities in and around the industrial park in the decision-making processes regarding the production of the space planned for (the expansion) industrial parks? This is in order to enhance civility and safeguard the democratic rights of the community.	We have a stakeholders association and have annual gathering during which we discuss the developments and our plans. Furthermore, we have a magazine and use local newspaper.	How do you stimulate the companies to contribute to the wellbeing and human capital development through formal and non-formal educational activities, in and around the industrial park where those companies are based?	By addressing it during the conferences we organize. In this we cooperate with the government.
How do you involve the communities in and around the industrial park in the decision-making processes regarding the production of the space planned for the expansion of the industrial park? This is in order to enhance civility and safeguard the democratic rights of the community.	We have a foundation that coordinates the communication. And when we plan anything we involve the community to participate in the informative/ discussion gathering evenings.		-	How do you guarantee the safety and health of the communities in and around the industrial park?	We have safety policies and guidelines in place. Furthermore we use camera systems and surveillances.	How do you stimulate those companies to contribute to the development of the region in terms of poverty reduction, job creation for vulnerable people, promotion of entrepreneurship among unemployed youth?	By addressing it throughout our informative and discussion activities and sharing the policies.
How do you inform the communities in and around the industrial park	through our foundation, newsletter and local newspaper		-	How do you ensure that industrial parks contribute to the	By closely monitoring the number of jobs created.	Do you promote development and implementation of gender	Not directly, but we do organize events around different

about your activities?				development e.g. job creation for the region?		policies by the companies you represent? If so, how? If not, why not?	governmental policies.
How do you guarantee the safety and health of the communities in and around the industrial park?	There are rules and regulations in place and destination plan from the municipality		-	How do you measure the positive socially related impacts of the industrial parks to the community in your area of governance?	We do not do this in a structured way yet. But we do plan to do that if possible in the near future.	Do you stimulate the companies which you represent, to enable qualified disabled people to work at those companies?	Not directly, but we have campagnas. In the same time we realize that it is a big investment for companies
How do you prevent future casualties and guarantee the security of the communities in and around industrial sites?	There are rules and regulations in place and destination plan from the municipality		-	Have you established indicators in order to measure the industrial parks impacts?	Not yet.	Do you stimulate the companies which you represent to enable migrants or newcomers to work at those companies?	No
Does the park have a secured access? What criteria are checked?	We have camera systems		-	How do you facilitate public transportation which guarantees an efficient service from dwelling sites to industrial park for the community/ visitors?	There are public bus station an walking distance, but this are not yet very visitors and employees friendly.	Do you promote the implementation of CSR or similar schemes at companies you represent?	Yes, to the extent of governmental policies in this regard.
How does your industrial park contribute to improve the labor conditions in the region?	By informing the companies about the subject and the companies develop their own rules and regulations in this regard		-	Do you have policies in place that the industrial parks have to commit themselves to? If so, what does these policies include?	Yes we do. We have the so called, destination plan to which industrial site needs commit.	Do you measure and report the social impact of the companies you represent? If so, how do you do that?	If not, why not? No, we don't.
How do you contribute to job-creation for the communities in and around the industrial park?	There are around 100 companies based here and we try to hire as much people from the region by inviting the communities with companies open days		-	Based on your experience as policy maker, do you have suggestions for missing indicators that are not yet addressed in existing frameworks for (social) sustainability measurement of industrial parks?	Nothing special.	Based on your experience as a practitioner, do you have suggestions for missing indicators that are not yet addressed in existing frameworks?	Not really.
Is the job creation contribution of your industrial	Yes, we try to create as much jobs as possible for the		-				

park to the region substantial? Are jobs with value created?	communities around the industrial site. However, we do not monitor it.						
How does your industrial park contribute to the wellbeing and human capital development through formal and non-formal educational activities in and around the industrial park?	We try to work with primary school by inviting to the companies in the field of technical education		-				
Does your industrial park contribute to the development of the region in terms of poverty reduction, job creation for vulnerable people, promotion of entrepreneurship among unemployed youth ? If so, how ? If not, why not?	Yes we contribute to job creation, but we do not monitor it		-				
Does a center exist which provides education, leisure, local supply, common catering, medical services for the tenants?	Not yet, but we are planning to do that		-				
How do you create a sense of community for the employees of the industrial park and the communities in and around the industrial park?	By initiating activities together and organizing informative gatherings together with the municipality		-				
Are there any gender policies implemented in the resident companies? Has the park itself a policy related to it?	Not yet, we rather focus on the capacities of individuals		-				
Are there any policies implemented to enable qualified disabled people	Not yet, we rather focus on the capacities of individuals		-				

to work at Industrial parks?							
Are there any policies implemented to enable migrants or newcomers to work at the Industrial park?	Not yet		-				
Is CSR or similar schemes implemented?	There are agreements that has to signed by individual companies who want to base here		-				
Do you have any guidelines, rules & regulations that the companies have to commit themselves to in the procedure of basing their company at your industrial park? If so, what do these documents include?	Yes, the municipality		-				
Do you measure and report the social impact of the industrial park? If so, how do you do that?	Maybe with the municipality, but I don't know. We as park management don't do that		-				
Based on your experience as a practitioner, do you have suggestions for missing indicators that are not yet addressed in existing frameworks?	Not really		-				