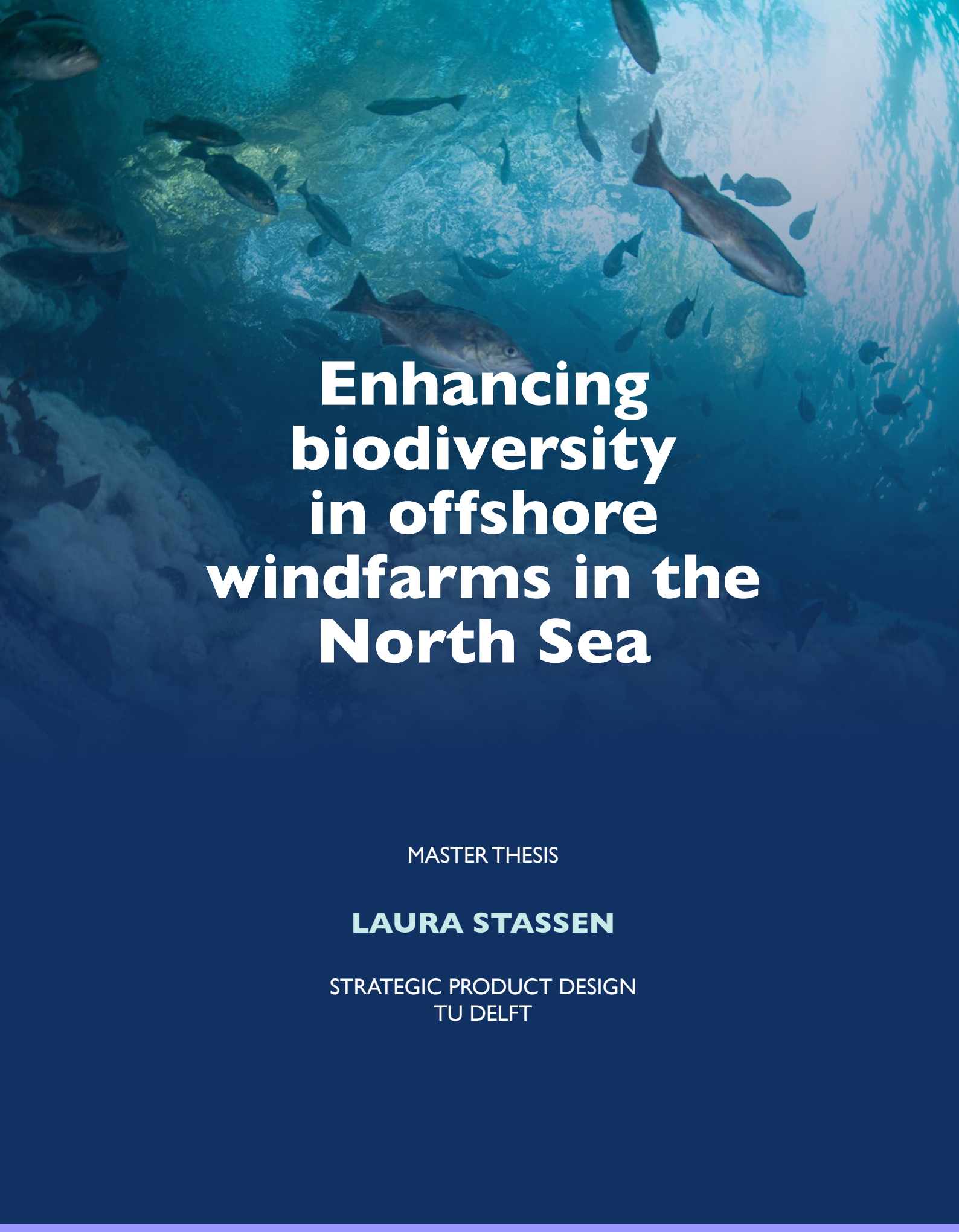

# Enhancing biodiversity in offshore windfarms in the North Sea

MASTER THESIS


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**MASTER THESIS**
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**IN COLLABORATION WITH**
TU Delft, Accenture Song & De Rijke Noordzee

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# PREFACE

Welcome to my thesis for the master Strategic Product Design at the Delft University of Technology. I am proud and honored to have joined this amazing study in Delft with a fine balance between engineering, business and design. Especially, I am thankful for the people I have met during this time.

During my study, I became interested in energy transition and biodiversity which motivated me to contribute in these areas for a more sustainable future. In this project, I am happy that I found an opportunity to explore this further. Besides, I have always wanted to explore the world of consultancy which I also did during this project. The project could not have been done without the support of others.

First and foremost, I want to thank my supervisors from the TU Delft, Sicco Santema and Gert Hans Berghuis for their support during this final project. Sicco, thank you for teaching me a real academic perspective. Gert Hans thank you for challenging me as a consultant and on linguistics (even from Sweden).

Besides, I want to thank my supervisors from Accenture, Dita and Sander for letting me explore the world of consultancy. I learned a lot from your knowledge and approaches as creative design consultants. Lastly, I would like to thank my other colleagues at Accenture for making the graduation time more fun.

Importantly, I want to thank my family, Lucas, Judith, Puck and Benjamin for the always encouraging support throughout my studies. And lastly a big thanks to my friends, housemates and study buddies who were always eager to help or distract me when needed!

Enjoy reading!

Laura

# ABSTRACT

De Rijke Noordzee (DRN) is a Dutch organization with a mission to enhance nature utilizing the opportunities which offshore wind farms offer. The organization is currently working on several nature enhancement projects in offshore wind farms in the Dutch part of the North Sea. However, DRN's mission to enhance biodiversity does not stop at the borders of the North Sea. Therefore, I explored in this report the opportunities for DRN to collaborate with the North Sea countries in offshore wind farms (OWFs).

To find opportunities for DRN, I started with an analysis of De Rijke Noordzee by interviewing employees of DRN. Based on this analysis, I found two critical needs regarding international collaboration. The need for a strategy on international collaboration between North Sea countries and a way to share knowledge on nature enhancement. Furthermore, I identified three valuable strengths of DRN: 1) connector between science, industry and government, 2) practical performer in nature enhancement projects, 3) opportunity focussed.

Thereafter, I created future contexts on Enhancing biodiversity in the North Sea by 2030 with the so called ViP method. I selected the most promising two future contexts which align with DRN's needs and strengths: A) North Sea cooperation plays a significant role in educating people about nature topics and B) Nature education starts by engaging locally.

Based on the two analyses, I primarily focussed on the development of a strategy on North Sea collaboration (including looking for a country to start knowledge sharing with). Furthermore, on the development of ideas for DRN to share knowledge on nature enhancement projects by engaging locally.

To assess the North Sea countries, I built a decision tree based on a list of factors which influences the suitability for DRN to share knowledge with this country. The North Sea countries Germany, Denmark, UK and Belgium appeared to be suitable for collaboration from 2024 on, where Germany has the highest score. Furthermore, France and Norway might be suitable to share knowledge with in the future.

To come up with different ideas on sharing knowledge on nature enhancement by engaging locally, I organized multiple brainstorm sessions. Four ideas were selected for DRN which create the highest impact and at the same time acquire low effort to be implemented in 2024.

Consequently, I formulated a strategy on how to approach the North Sea collaboration to enhance biodiversity by 2030. This strategy is illustrated in a roadmap including selected ideas for horizon 1. The strategy is summarized as following:

Horizon 1: Share knowledge with Germany by engaging locally while: eating OWF seafood in restaurants, walking along the coast line or joining a music festival.

Horizon 2: Share and gain knowledge with and from Denmark, the UK and Belgium.

Horizon 3: Scale knowledge with France and Norway.

Besides the developed strategy, the decision tree is a structured tool for DRN to evaluate countries for collaboration in the future. Together with DRN, I discovered how the decision can be feasible, viable and desirable for them. As a result a poster was developed to inspire DRN employees. Besides, the decision tree is valuable in acquiring new funding and informing new and current stakeholders.

In addition to these outcomes for DRN, I discovered the contribution for Accenture. Together with fellow design consultants from Accenture, I explored the use of the ViP method within Accenture. I organized a brainstorm session to discuss the potential value. The session resulted in a positive response towards a VIP by a majority of my colleagues. Therefore, I designed a guide to integrate the ViP method within Accenture.

# GLOSSARY

This glossary provides some commonly used terms in my report. Even though some definitions for the same terms might exist, the following explanations align with the meaning in this report.

| | |
|---|---|
| **DRN** | De Rijke Noordzee |
| **OWFs** | offshore wind farms |
| **FACTOR (ViP)** | a state, principle, trend or development |
| **CLUSTERS OF FACTORS** | group of factors |
| **ViP METHOD** | Vision in Product Design methodology |
| **DEPEST** | Demographic,Economic, Political, Environmental, Social and Technological |
| **SPD** | Strategic Product Design |
| **CRITERION** | principle by which something may be decided |
| **CONSTRAINT** | a factor that limits something |

## De Rijke Noordzee

Enhancing biodiversity in offshore windfarms

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DEVELOP



DELIVER



DEVELOP & DELIVER

# INTRODUCTION

## 01 PROJECT INTRODUCTION

# 01 INTRODUCTION

## 1.1 PROJECT SCOPE

De Rijke Noordzee (DRN) is a Dutch organization with a mission to enrich the North Seas marine ecosystem while contributing to the energy transition. They do this by utilizing the opportunities of Offshore Wind Farms (OWF s) to enhance nature. DRN has a wide range of partners with which they can collaborate in order to fulfill this mission. These are partners in e.g. the wind energy sector, nature organizations, start-ups, the government and consultancy firms like Accenture.

Accenture is working for DRN as digital consultant and can support in different ways. As part of Accenture, I support DRN in identifying opportunities to work internationally. To limit the scope of the project, I focus on international collaboration with the North Sea countries which are: Germany, France, Belgium, Denmark, Norway and the United Kingdom.

## 1.2 OPPORTUNITY DEFINTION

Currently DRN is operating in the Dutch part of the North Sea where they work on nature enhancement projects with various stakeholders. In the beginning of 2024, DRN has the ambition to start new nature enhancement projects crossing the borders of the Dutch North Sea. DRN would like to know which international steps can be taken in their new project between 2024-2028. Therefore, I will explore the opportunities to work internationally on nature enhancement projects.

Main research question:

*What are the opportunities for De Rijke Noordzee to collaborate with the North Sea countries on nature enhancement in offshore wind farms?*

In order to answer this question the following sub questions need to be answered:

- *What are the strengths and weaknesses of DRN?*
- *What are the needs and barriers of DRN regarding international collaboration?*
- *What does the future look like around biodiversity in OWFs in the North Sea?*

The research and design assignment can be formulated as following:

Design a future vision on "Enhancing biodiversity in OWFs in the North Sea in 2030". Operationalize this in a roadmap which makes clear what the steps are between 2024-2028 for DRN.

As part of Accenture I also would like to discover the potential value for them. Therefore an additional assignment is:

Discover what the contribution for a consultancy firm like Accenture can be.

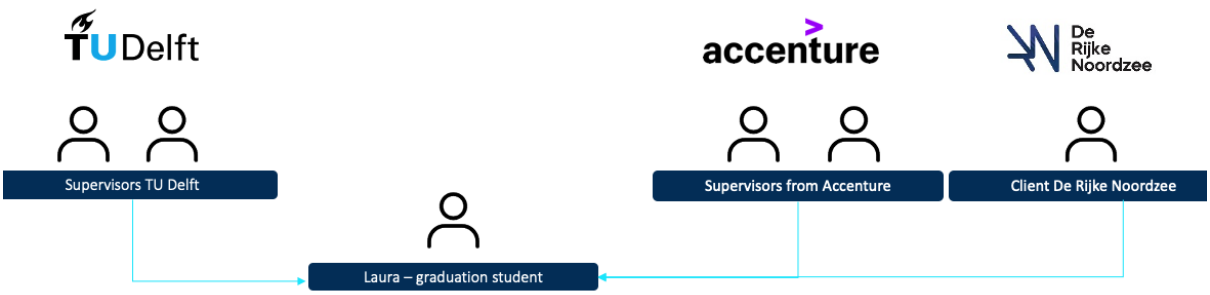
The outcomes should support DRN in starting their mission abroad and unlock possible value for Accenture.

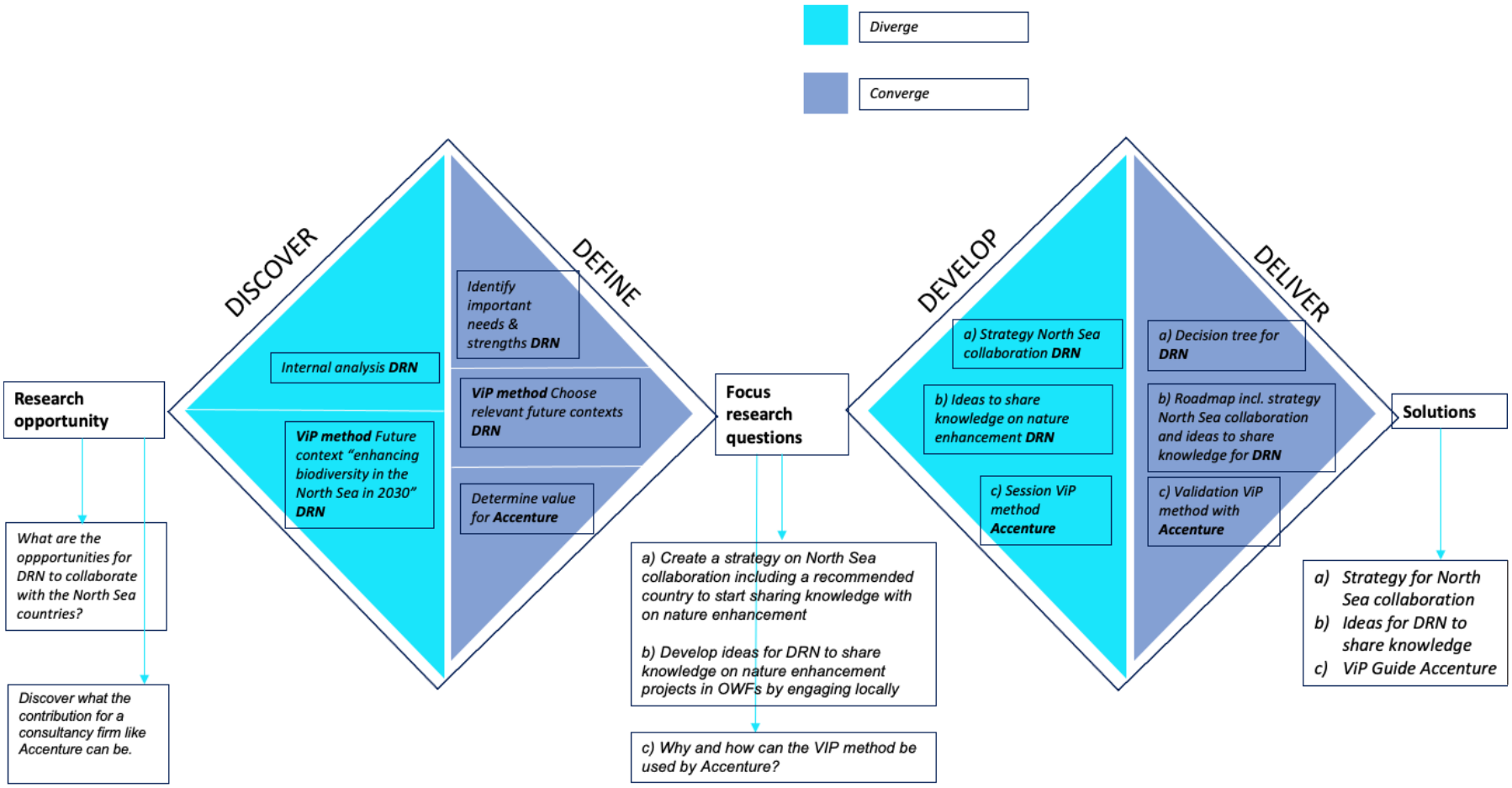
## 1.3 STRUCTURE OF THE REPORT

This report is structured according to the design methodology called The Double Diamond (Design Council, 2019). The double diamond approach contains four phases: discover, define, develop and deliver.

Within this structure, I use the ViP method in the discover and define phase. The ViP method is an approach to explore the opportunities for tomorrow instead of solving the problems of today (Hekkert & Van Dijk, 2016). This approach is suitable for my project since my client is seeking opportunities in the future. The ViP method contains the following steps within creating the future context: domain, context factors, context structure and statement.

Within this structure, three stakeholders are involved in my project: TU Delft, Accenture and De Rijke Noordzee. In the next section, I address where their values are reflected in the report.




Diverge
Converge
DISCOVER
DEFINE
DEVELOP
DELIVER
Research opportunity
What are the oppportunities for DRN to collaborate with the North Sea countries?
Discover what the contribution for a consultancy firm like Accenture can be.
Internal analysis DRN
ViP method Future context "enhancing biodiversity in the North Sea in 2030" DRN
Identify important needs & strengths DRN
ViP method Choose relevant future contexts DRN
Determine value for Accenture
Focus research questions
a) Create a strategy on North Sea collaboration including a recommended country to start sharing knowledge with on nature enhancement
b) Develop ideas for DRN to share knowledge on nature enhancement projects in OWFs by engaging locally
c) Why and how can the VIP method be used by Accenture?
a) Strategy North Sea collaboration DRN
b) Ideas to share knowledge on nature enhancement DRN
c) Session ViP method Accenture
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b) Roadmap incl. strategy North Sea collaboration and ideas to share knowledge for DRN
c) Validation ViP method with Accenture
Solutions
a) Strategy for North Sea collaboration
b) Ideas for DRN to share knowledge
c) ViP Guide Accenture

## 1.4 DOUBLE DIAMOND AND STAKEHOLDER VALUE

### 1.4.1 DISCOVER

In the discover phase, I focus primarily on DRN. This phase can be divided into two parts: internal analysis and creation of future contexts. In the first part, DRN is analyzed by discovering the strengths and weaknesses. Besides, I identify their needs and barriers towards international collaboration. In the second part, the aim is to explore the future context where I use the ViP method to structure this process. First a domain will be defined together with the client. Secondly, I will explore context factors which drive the future. Thirdly, I structure the context factors into clusters of factors. Lastly, I create future contexts by combining clusters of factors.

### 1.4.2 DEFINE

In the define phase, I summarize the findings from the internal analysis and future contexts. Thereafter, I will look for synergy between internal analysis and the future contexts. Based on this, I define the focus for development of the opportunities for DRN. Besides, defining the focus for DRN, the potential value for Accenture is determined in this phase.

### 1.4.3 DEVELOP

In the develop phase, I develop ideas for the opportunities for DRN and assess the North Sea country on suitability for collaboration. by the development of a decision tree. Besides, I organize a brainstorm session to validate the value for Accenture.

### 1.4.1 DELIVER

In the deliver phase, I present the decision tree to assess countries internationally and a roadmap including a strategy for DRN and the developed ideas. Furthermore, I present a guide for Accenture to use the ViP methodology within the firm.

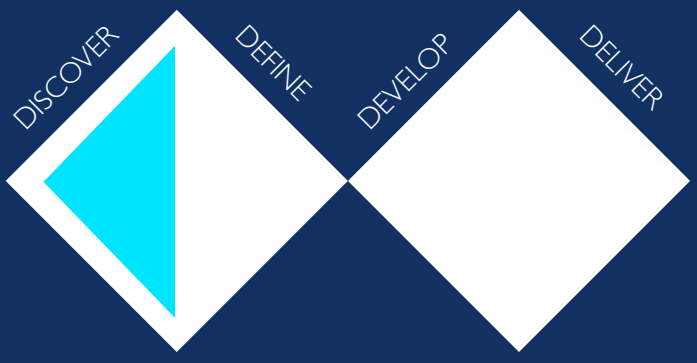
A visualization of this approach is presented on the page on the left.

# DISCOVER

## 02 INTERNAL ANALYSIS

## 03 FUTURE CONTEXT

To explore the opportunities for DRN regarding internati-onal collaboration, I first do an internal analysis by intervie-wing employees of DRN. Secondly, I use the ViP methodolgy to explore the opportunities for collaboration within a future world of enhancing biodiversity on the North Sea.



# 02 INTERNAL ANALYSIS DRN

In this chapter, I conduct an internal analysis of DRN. The first section contains an overview of their mission and projects. In the second section, I elaborately conducted interviews with employees of DRN to identify a) the organization's strengths and weaknesses b) needs and barriers regarding international collaboration.

## 2.1 MISSION AND PROJECTS

DRN, a Dutch organization initiated by Natuur & Milieu en Stichting de Noordzee, has the dream to provide a North Sea full of life, rich in nature and a source of energy. They do this by utilizing the opportunities of OWFs to enhance nature and fostering collaboration between stakeholders in the wind energy sector and nature conservation organizations.

A notable example of a project is Blauwwind, in this project flat oysters are placed on the bottom of the wind turbines. The goal of the project is to see whether these flat oysters reproduce and enrich the nature around the OWF. In total, DRN executed eight different nature enhancement projects until now with different stakeholders involved (DRN, 2023).

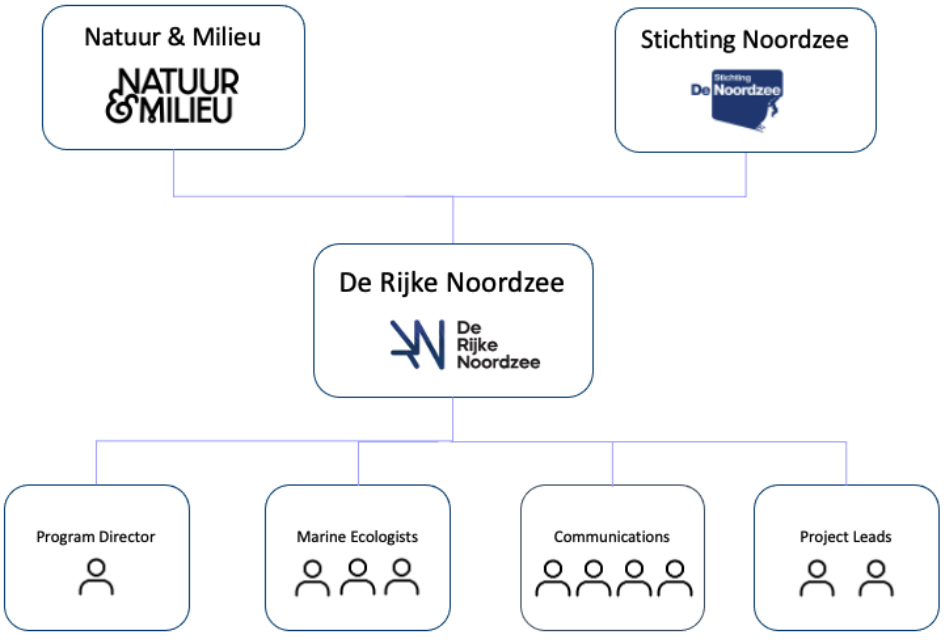



*Figure 2: Overview of DRN as an organization*

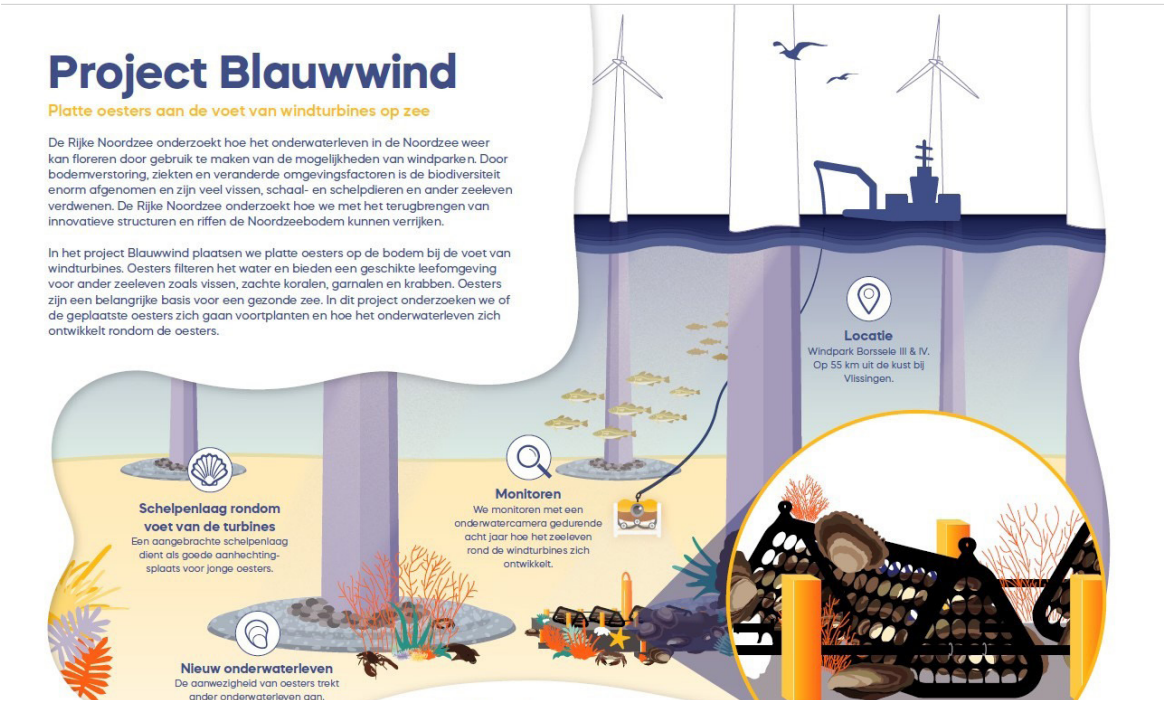



*Figure 3: Project Blauwwind (DRN, 2023)*

## 2.2 EMPLOYEE INTERVIEWS DRN

To better understand the organization's ability to work internationally, I conduct interviews with employees of DRN and validate insights with external organizations identified in section 3.2.4. The aim is to find out the organization's strengths and weaknesses, their needs for international collaboration and the current barriers for international collaboration. Moreover, I discuss their future vision on international collaboration which could be relevant for the creation of the future context in chapter 3.

### 2.2.1 METHOD

First, interviews will be conducted with employees of DRN where their perspective on their strengths, weaknesses, needs and barriers are identified. A strength, weakness, need or barrier is considered valuable when it is at least mentioned by two independent individuals of DRN.

To assess if outcoming strengths are valuable to take into further research, I compare DRN to external organizations working in the field of nature enhancement or wind energy. The comparison is made by finding correlation between strengths acknowledged by external parties and DRN. Strengths correlating with an external organization's acknowledgement are taken into account as relevant strengths of DRN. The external parties are identified in section 3.2.4 and the interview approach is described in section 3.2.5.


### 2.2.2 INTERVIEW SET-UP AND PARTICIPANTS DRN

The interviews are conducted with five employees of DRN, a project manager, a communications advisor, two marine ecologists and a project director. Hereafter, I call the employees DRN 1, DRN 2, DRN 3, DRN 4 and DRN 5. Appendix 1 shows the interview guidelines that lead the semi-structured interviews.

### 2.2.3 DATA COLLECTION

Before the interviews, the participants were asked for the consent of data usage for my graduation project. The interviews were scheduled for one hour over Teams and recorded. After the interview I transcribed the answers and validated the data with an employee of DRN to make sure the interpretations are aligned.

### 2.2.4 DATA ANALYSIS AND SYNTHESIS

To analyze and synthesize the answers from the interviews, I use the grounded theory method (GTM) from Strauss and Corbin (1990). Appendix 2 shows the overview of the steps I follow in this method. 1) In the first step I transcribe the collected data on sticky notes. 2) In the second step, I organize the sticky notes and give them a label. 3) In the third step, I look for overlap between the labels and make categories e.g. strengths, weaknesses. 4) As fourth, I select core categories and strengths, weaknesses, needs and barriers. Within these categories I structure the insights and give them an overarching name. Leftover categories might be used in the next chapter to create the future context.

## 2.3 RESULTS

### 2.3.1 STRENGTHS

2.3.1.1 EVALUATION DRN

Evaluating the category strengths, I gathered the following insights from the sticky notes.

DRN 1 mentions: *"We have a unique collaboration between industry and science".* DRN 2 says: *"We are the spider in the web between industry, government and science."* DRN 4 mentions: *"Create a unique shared interest between industry and science"* and *"we bring people together to the table and talk."* DRN 5 says: *"we are playing between the football lines: science, government and industry."*

The insights reveal to me DRN's perception of themselves as a connector between different stakeholders. Besides, at least two employees mention that DRN is involved with three different stakeholders: industry, science and government. Considering these insights I formulate the following strength: **Connector between science, industry and government.**

The following quotes relate to the practical expertise of DRN which is summarized in strength two: **Practical performer in nature enhancement projects.**

DRN 1 mentions: *"Team Members have a practical experience in the field",* DRN 3 mentions: "*We are very good in performing practically - e.g. monitoring, placement of replica."* and DRN 5 mentions: *"We have a practical mindset in the ecological part."*

Another strength, mentioned two times by different employees, is regarding equal contribution. DRN 1 states: *"There is a 50/50 contribution with industry partners in money or facilitation"* and DRN 3 mentions: *"Stakeholders involved are equally contributing to the nature enhancement projects in terms of money and resources."* This results in the following strength according to employees of DRN: **Equal partner in collaboration.**

The fourth overlap is noticed between their way of working. DRN 1 mentions: *"We are working only on science-based results."* and DRN 5: *"We evaluate based on experiments what works and what does not work."* According to the Cambridge dictionary (2023), *science is the careful study of the structure and behavior of the physical world, especially by watching, measuring, and doing experiments, and the development of theories to describe the results of these activities.*

Based on this definition, evaluating based on experiments by DRN 5 can be considered as science-based. This results in the following strength of DRN: **Science-based.**

The last overlap is noticed between two

quotes by DRN 2 and DRN 3 "*Freedom in what we can do and open for opportunities.*" and "*Comparing to other parties we focus on opportunities instead of holding things back and setting restrictions like most NGOs.*"

Therefore, I formulate this strength as: **Opportunity focussed.** A visualization of the quotes and overlapping strengths is shown in appendix 20.

#### 2.3.1.2 EVALUATION EXTERNAL INDUSTRY PARTIES

As mentioned in the method section, 2.2.1, I want to ensure that the resulting strengths are valuable. Therefore, I discussed DRN strengths in interviews with external parties. A detailed description of the identified external parties and interview approach is given in section 3.2.4 and 3.2.5. The interview results are presented in appendix 6 where the valuable insights for this section are marked blue. The insights are the following:

E1 mentions: "*DRN is a wanted partner because of their knowledge on nature enhancement which industry partners can use.*" This quote supports strength 1, connector between science, government and industry, because I consider knowledge on nature enhancement as science in this case and thus sharing knowledge between science- and industry partners.

E2 states: "*With innovation projects there are many different stakeholders involved which makes DRN a good facilitator.*" This quote shows the involvement of many stakeholders which I assume in this research as the parties in science, government and industry partners.

E4 mentions: "*I see DRN as a connector between different parties - also internationally.*" Here I assume the same as above, DRN is a connector between the different parties e.g. science, government and industry.

Strength two, practical performer in nature enhancement projects, is acknowledged by two external interviewees: E2: "*Monitoring biodiversity is one of the biggest challenges which DRN has started to do.*" Monitoring is a practical performance and therefore considered as correlating with this strength. E5:"*DRN is a very good practical performer.*"

Strength 5, opportunity focussed is acknowledged by E3: "*making positive impact to nature is difficult but using the windfarms to enhance nature is creating positive impact and supporting the energy transition.*" In this case I considered using the windfarms to enhance nature as the opportunity.

Considering this evaluation from external insights, I conclude strengths 1, 2 and 5 are at least one time acknowledged by an external stakeholder. Therefore, I take these strengths into account as valuable. Strength 3 and 4, namely equal partners in collaboration and

science-based are not acknowledged by an external partner. Therefore, I eliminate these strengths for further research.

The correlation between the strengths and external acknowledgements is visualized in appendix 20.

#### 2.3.1.2 RESULTING STRENGTHS

Based on the evaluation above, three strengths are valuable to take into consideration in further research. A short explanation on the three identified strengths to generate understanding:

**Connector between science, industry and government:** DRN has a mission which involves science-, industry- and government parties. They utilize knowledge and power of the different stakeholders and connect them to collaborate on nature enhancement in offshore wind farms.

**Practical performer in nature enhancement projects:** DRN is actively involved in the execution of nature enhancement projects on the North Sea. They implement innovations directly, monitor the effects and improve. External parties acknowledge this as a strength because of the big challenges in monitoring biodiversity.

**Opportunity focussed:** Where most nature organizations set restrictions to protect nature, DRN uses the opportunities of windfarms to fight for nature. Besides, DRN is open to experimenting with new innovations. This makes their mission positive for nature but also for the industry and science organizations.

### 2.3.2 WEAKNESSES

Evaluating the category weaknesses, I notice the following overlap between insights:

DRN 1 states that the organization is *"Dependent on financial support from third parties."* DRN 4 mentions *"We are currently busy with new funding."* and DRN 5 acknowledges this by saying *"We need money to continue our mission."* In these quotes I notice the financial dependency of the organization to continue their mission. Therefore, I find the term financial dependency comprehensive.

The second overlap I find between two quotes of DRN 3 *"the team is currently too small to operate in international waters."* and DRN 4 *"we need to realize scalability."* In my opinion this refers to the fact that the organization currently has limited operational capacity to be internationally active. Therefore, I name the weakness: limited operational capacity.

The last notable weakness is found between the two insights: *"We need to communicate with our mother NGO's and align our message"* - DRN 2 and "*We are born from two mother organizations - so we discuss our strategy with them."* - DRN 4. Both insights state that DRN has to communicate with the two NGOs about their way of working. Summarizing this into the weakness leads to accountability to two NGO's.

The analysis is shown in appendix 20.
To summarize, I give a short explanation on each weakness of DRN:

**Financial dependency:** DRN is an organization financed by the "Droomfonds van de Postcodeloterij" with a fixed budget. This makes DRN limited in growing. Plus, at the end of 2023, the financial support stops and DRN needs to find new funding to remain existing.

**Limited operational capacity:** Since there is a limited budget, DRN has relatively a small team where people have multiple jobs. This makes the time to work on international projects limited.

**Accountability to two NGOs:** DRN is committed to Natuur & Milieu and Stichting de Noordzee to report and communicate with them. As a result, they may not have the freedom to independently convey their own message.

Important to mention is the high likelihood of the organization's continuity. Currently DRN is talking with multiple funders which can provide financial support from the beginning of 2024. If the organization is not able to work in their current structure, projects will be continued where possible by the organizations Natuur & Milieu and Stichting Noordzee (DRN, 2023).

### 2.3.3 NEEDS

Evaluating the needs on the sticky notes, I find the following overlapping needs.

The first need is referred to by all employees: sharing knowledge on nature enhancement projects.

DRN 1: *"we want to start sharing our knowledge"* and *"we want to spread our message through OCEaN."* DRN 2 - "*I want us to be the central information center for NID inside and outside wind farms."* DRN 3 - "*We need to start the conversation at the table where we can share our knowledge and give advice."* DRN 4 - "*We would like to share our successes and failures from our nature enhancement projects on the North Sea."* DRN 5: *"We want to share our best techniques around nature enhancement"* and *"we want to collect all the knowledge gained and make it open source"* and *"we want to create a kind of shop window where we can share our projects internationally."*

The second overlap is found between the following quotes:

DRN 2: *"we need to know what is done in other countries, we need a database for benthic."* and DRN 3: *"Oceans and RGI have a network and know more about other countries - we could use that to gain more information."*

In both quotes the need to know more about other countries can be noticed, therefore the second need is summarized as: gain knowledge on nature enhancement projects internationally.

Three out of five employees refer to the need to get in touch with international parties.

DRN 1: *"We want to connect with English NGO's."*, DRN 3: *"we need to start international relations."* and *"we need to find NGOs in countries with the same mission."* and DRN 4 - "*we are the ones that need to start international bonds with other countries."*

The last need is mentioned by four individual employees: DRN 1 - *"we miss an approach on international collaboration."* , DRN 3 - *"Where do you start? What are logical steps to take and what are logical countries to start with or in?"* DRN 4 - *"an approach for international collaboration is needed."* and DRN 5 *"where does international collaboration start?"* and "*how do we cope with the international component - we need to be clear in our goals."*

These needs are summarized in an approach for international collaboration. According to Collins dictionary (2023) approach is a synonym for strategy.

Therefore, the need can be formulated as a strategy on international collaboration. The analysis of these quotes is summarized in

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These needs are summarized in an approach for international collaboration. According to Collins dictionary (2023) approach is a synonym for strategy.

Therefore, the need can be formulated as a strategy on international collaboration. The analysis of these quotes is summarized in appendix 20.

Hereby I present a summary on the needs for DRN on international collaboration:

1) DRN would like **to share knowledge on nature enhancement projects.** This includes sharing failures and successes from the past but also inspiring others to start on nature enhancement projects.

2) DRN needs **to gain knowledge on nature enhancement projects internationally.** They want to learn from others. OCEaNS, a coalition of partners from RGI, can be used to gain knowledge and identify possible partners.

3) DRN wants to **get in touch with international parties.** They need to prioritize which parties and how the reach out is done.

4) There is **a need for a strategy on international collaboration** within DRN. This includes when and with whom they start collaboration and setting goals.

### 2.3.4 BARRIERS

Within the category barriers, I notice the following overlap. This overlap is visualized in table appendix 20.

DRN 2 - *"we are not doing 20 projects because we have limited people and money available."* and DRN 3 - "*the team we currently have is too small to operate in international waters."* DRN 4 "*in order to scale up projects - we need to grow."* DRN 5 - *"we need more money to grow internationally."* and *"we are currently too small to grow internationally."*

These insights are summarized in Limited resources available.

The second barrier, Different languages makes learning from other countries difficult, is referred to by two employees: DRN 1 and DRN 2: *"Simply said we can not learn from other countries because it's written in the original language."* and *"Some ecological research is difficult to understand because of other languages."*

The third barrier identified is: Limited knowledge about rules and regulations in North Sea countries. This is based on insights mentioned by three different employees. DRN 1 - *"there is limited knowledge about rules and regulations of other countries."* DRN 4 *"I want to discuss the future of national and international rules and regulations."* DRN 5 - *"There are other countries where you can find inspiration on nature enhancement – we need to figure out how exactly.'*

The last barrier I notice is about the lack of Effective tools to communicate on nature enhancement. This is based on the following three insights: DRN 2 - *"A useful platform is missing to communicate."* DRN 3 - "*we need to make the toolbox as international as possible – to gain as much knowledge as possible."* DRN 4 - *"Most of the time webinars and congresses are either wind- or nature events - not combined into nature enhancement in OWF."* and DRN 5 - *"we want to use an open source platform."*

Summarizing the four barriers regarding international collaboration:

1) There are **limited resources available.** There is a limit in money available from the Droomfonds of the Postcodeloterij. Limit in money also affects the possible growth of the team. Employees from the team do not have enough time available to work on international projects but there is currently no money available to hire new employees.

2) A simple but significant barrier to work internationally is **language**. Especially for marine ecologists who would like to read insights on research projects on nature enhancement find difficulties in translating all findings.

3) Within DRN there is **limited**

**knowledge about rules and regulations in North Sea countries.** Therefore they don't know if and how to execute a nature enhancement project within those regulations.

4) **Effective tools are missing to communicate** with other countries on nature enhancement projects.

## 2.3 LIMITATIONS OF THE METHOD

The approach I used above comes along with certain limitations which might have influenced the results. In this section, I discuss the most important ones.

The first limitation is that interviews are conducted with employees of DRN who might be internally biased and can not be fully objective in assessing the organization's strengths and weaknesses. I tried to overcome this by interviewing external stakeholders of DRN where I validated the strengths presented.

While external organizations validated the strength of DRN, a second limitation is that these stakeholders represent a relatively small group and thus perspectives. Including more stakeholders would provide a more holistic view of DRN capabilities.

A third limitation I found is regarding categorizing and labeling of the insights from the interview. My own interpretation as a researcher could introduce bias and subjectivity. Therefore, I only used insights which were mentioned multiple times by identifying similar word use of the participants to minimize bias.

Lastly, my presence as researcher could have influenced the answers of the employees of DRN or external stakeholders during the interviews. By following a semi-structured interview guide, I tried to minimize my own influence.

## 2.4 CONCLUSION

Summarizing the insights from the internal analysis, I present the following overview below.

Even while all these outcomes are relevant for DRN, I need to create a focus for further research and design within this project. In chapter 4, I evaluate which needs, barriers, strengths and weaknesses are relevant to continue with.

**Strengths**

1. Connector between science, industry and government
2. Practical performer in nature enhancement projects
3. Opportunity focussed

**Weaknesses**

1. Financial dependency
2. Limited operational capacity
3. Accountability to two NGOs

**Needs**

1. A way to share knowledge on nature enhancement projects
2. Gain knowledge on nature enhancement projects internationally
3. Get in touch with international parties
4. Strategy on international collaboration

**Barriers**

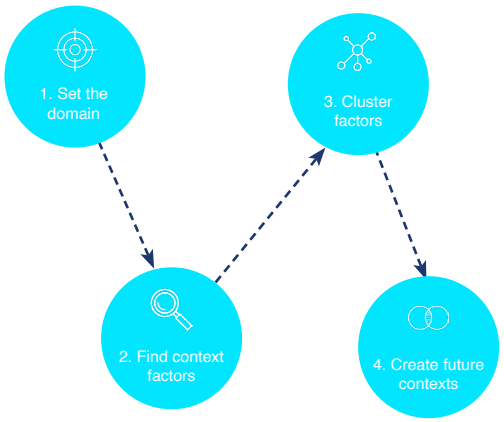
1. Limited resources available
2. Different languages makes learning from other countries difficult
3. Limited knowledge about rules and regulations
4. Effective communication tools are missing for nature enhancement

# 3. CREATING THE FUTURE CONTEXT

In this chapter, I show the development and exploration of the future contexts in order to unlock opportunity areas for DRN to collaborate with North Sea countries. I create future contexts using steps of the ViP method. The outcome is a two dimensional framework which illustrates potential future contexts for enhancing nature in offshore wind farms. The contexts serve as opportunities to solve DRN's needs.

## 3.1 APPROACH

The ViP method (Hekkert & Van Dijk, 2016) consists of the following four steps to create the future context, namely ***1. domain, 2. context factors, 3. clusters of factors, 4. future context.*** For each step, I explain briefly how I apply the steps in my project to achieve the desired outcomes. A more detailed description can be found in appendix 21.




### 3.1.1 DOMAIN

According to Hekkert & Van Dijk (2016) the domain is the area where you aim to make a contribution. It should be interesting and relevant for the organization and is formulated from the perspective of the end user. In this project, I discuss the domain with DRN to make sure it covers the clients needs and supports their mission. The end users in this project are stakeholders (e.g. nature organizations, industry partners, universities) with whom DRN is collaborating or wants to collaborate in the future. Since the end users are a wide range of stakeholders and mostly businesses instead of humans, I discuss this with the founders of the ViP method.

### 3.1.2 FIND CONTEXT FACTORS

Factors are observations, thoughts, laws, considerations, beliefs or opinions (Hekkert & Van Dijk, 2017). To find interesting factors, I use newspapers, scientific research, books, my own observations and the interviews with DRN. Besides, I conduct interviews with experts in the field of OWF development which were identified in section 3.2.4. In section 3.2.5, the interview approach is explained.

### 3.1.3 CLUSTER FACTORS

The goal of clustering is to connect factors and thus create a vision of the future context. To comprehensively analyze the factors found and group them into clusters, I facilitate a co- creation session. This collaborative approach unlocks fresh perspectives and enhances the generation of ideas and opportunities (Sanders & Stappers, 2012). The co-creation session is held with three other Strategic Product Design (SPD) students and is scheduled for four hours on a Monday afternoon.

### 3.1.4 CREATE FUTURE CONTEXTS

The final step is to create the final future contexts based on the clusters of factors. To design axes for the two dimensional framework, I look for two overarching themes within the cluster of factors.

When the framework is set up, I describe future worlds by finding synergy between two factors. This is done by multiplying two cluster of factors from a different axes:

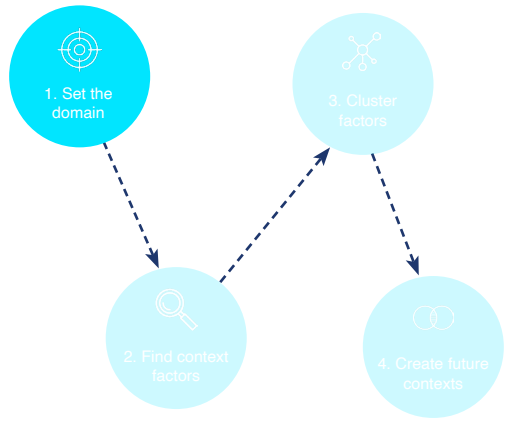
***Cluster of factor X x Cluster of factor X = Description of a future world***

To make sure the outcomes are comprehensive, I iterate on these descriptions of the future context in three sessions with two SPD students and a ViP expert. This generates diverse perspectives and more critical eyes on the outcoming future world. I schedule a call for half an hour over Teams and discuss the descriptions. After three sessions, final descriptions of the future contexts will be presented.

## 3.2 DOMAIN

### 3.2.1 ESTABLISHING THE DOMAIN

In this section, I take the first step of the ViP method: establishment of the domain. The domain is based on DRNs mission and aspirations. Section 3.1.1 provides a more detailed approach to set the domain.




DRN has outlined the following mission:

*A healthy North Sea, a source of renewable energy, rich in nature and full of life. That's our dream. At the core lies a simple yet effective insight: in offshore wind farms, bottom trawling is prohibited, allowing them to serve as nurseries for underwater wildlife (DRN, 2023).*

DRN has asked me to research the opportunity for international collaboration because their mission extends beyond the borders of the Dutch North Sea. Marine life migrates across these borders to UK, Danish, French, Belgium and German parts of the North Sea.

DRN aims to start international collaboration from 2024 onwards. Within the offshore wind industry, the Netherlands and other European countries plan to expand the part of renewable energies before 2030 (RVO, 2023). The EU restoration law regarding restoring biodiversity with 20% is also set before 2030 (European Commission, 2022).

Considering these insights, I have selected the following domain:

***Enhancing biodiversity in OWFs in the North Sea by 2030.***

A discussion with founders of the ViP method is held to identify the end user of this domain. The outcome of this discussion is to prioritize people as end users by recognizing that the mindset of individuals towards the future ultimately influences the mindset of organizations as well.

Before I dive into the factors to create a vision for the future, I first deconstruct the domain in order to understand what it is and how it is currently working.

### 3.2.2 DECONSTRUCTION OF THE DOMAIN

As mentioned, I first elaborate on the current context around enhancing biodiversity in OWFs in the North Sea before we look into the future world of 2030. The current context can be divided in three parts:

- **Enhancing biodiversity**
- **Offshore wind farms**
- **The North Sea**

For each part, I give an explanation on what it is, why it is important, how it is used and which types of stakeholders are involved.

#### 3.2.2.1 ENHANCING BIODIVERSITY

*Figure 4: Biodiversity in the ocean*

Biodiversity refers to the variety of living species on Earth, including plants, animals, bacteria, and fungi (National Geographic, 2021). In this project the focus is on marine biodiversity, the variety of living species in our ocean.

While Earth's biodiversity is rich, 30-50% of marine biodiversity has been lost in the past decades. It is being threatened by human activities, invasive species and climate change (Stedmon, 2022). Marine biodiversity is important to keep the ocean productive, resilient, adaptive to environmental changes (Stedmon, 2022). It is one of the planetary boundaries to keep our planet safe for humans to live on (Raworth, 2017).

To increase marine biodiversity this could be done either active or passive. Passive includes for example, creating marine protected areas. These are areas where human activity like fishing is prohibited (Stichting Noordzee, 2022). Active biodiversity enhancement includes for example nature reinforcement or nature restoration. Nature restoration the aim is to recover the natural ecosystem to a healthier state as it was. The definition of nature reinforcement is to enhance or strengthen ecosystems that are threatened (DRN, 2023). In this project, the focus is on underwater nature reinforcement. Examples of nature reinforcement are placing oysters in the seabed or placing artificial reefs.

Currently there are several parties involved in active nature restoration with DRN. I categorize them as following with a few examples of stakeholders:

Start-ups: e.g. Reefy, Reefsystems, EXO Engineering
Science partners: e.g. TU Delft, Wageningen Marine Research
NGO's: e.g. Vogelbescherming, RGI

### 3.2.2.2 OFFSHORE WIND FARMS

Offshore Wind is a renewable energy technology to generate electricity (Orsted, 2023). In an Offshore Wind farm a range of a few until up to thousands of wind turbines are placed together on suitable locations in the ocean (Alliant Energy, 2023). This rapidly growing form of energy plays a large role in the energy transition.

*Figure 5: Windenergie op zee*

Therefore, the Netherlands has, in cooperation with the European Parliament, set the ambition to reduce CO2 emissions by 55% in 2030 compared to 1990. In 2030, a total capacity of 21GW should be generated by wind energy on the North Sea. Figure 6 shows an overview of currently operating-, developing- and planned offshore wind farms on the Dutch part of North Sea including their generated capacity.

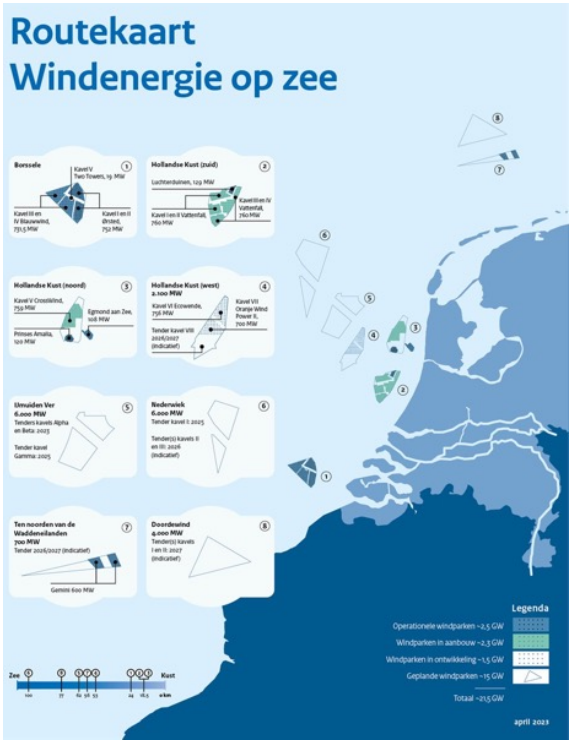



*Figure 6: Routekaart Windenergie op zee (Noordzeeloket, 2022)*

The development of OWFs is a large project with multiple stakeholders involved. To give an understanding of the OWF lifecycle, I will take you to steps in the lifecycle with an example of a stakeholder involved (Ulstein, 2019).

**1. Planning and Development**

In this phase the planning and development of a new OWF is done. The government designates tenders to offshore wind developers. Different developers can apply for a tender and the government selects the OWF party with the best approach for that

location. Therefore, OWF developers have an expertise in site selection, feasibility- and environmental assessments.

*e.g. Government: EZK & OWF Developers: Orsted, Eneco, Shell, Vattenfall*

**2. Structure & Installation**
Now the area has been selected, the next step is to construct and install the windfarm. Manufacturers provide substructures, towers and turbines, and oversee the installation.

*e.g. Manufacturers: Siemens, Vestas*

**3. Installation & Commissioning**
For the installation and construction of wind turbines marine contractors are involved. They execute the installation of foundations, substructures, subsea cables, and other offshore infrastructure components.

*e.g. Marine contractors Van Oord, Heerema*

**4. Operations & Maintenance**
The operation and maintenance of a wind farm is important to make sure the reliability and efficiency of operating wind turbines. Parties involved provide maintenance, monitoring, and repair services.

*e.g. operators Vestas*

**5. Decommissioning & Repowering**
At the end of the lifecycle the decommissioning of offshore wind farms is done. This includes the safe removal and disposal of wind turbines, substructures, and associated infrastructure.

*e.g. Marine contractor DEME Group*

Throughout the phases of the lifecycle of OWF it is important to take the effects on nature in consideration. Therefore, DRN collaborates with all sorts of stakeholders types within OWFs.

3.2.2.3 THE NORTH SEA


*Figure 7: a visualization of the North Sea*

The North Sea is the area between Great Britain, Denmark, Norway, Germany, the Netherlands, Belgium and France. The area is approximately 570,000 square kilometers. The North Sea boasts diverse ecosystems, is rich in marine biodiversity, and vast natural resources (Stichting Noordzee, 2022). The North Sea is used for various industries including, shipping, fishing, tourism, oil and gas and renewable energies.

### 3.2.4 STAKEHOLDER SELECTION


*Figure 8: Stakeholders identified with the deconstruction of the domain and other stakeholders from DRN*

After deconstruction of the context, I noticed the wide range of stakeholders involved in nature enhancement in offshore wind farms. Before I move on to the exploration of factors driving the future contexts, I identify which of these stakeholders are most relevant for my domain.

I assess the stakeholder groups I mentioned above with a power of interest grid (LMT, 2022). The first criterion is that the stakeholders are internationally active. Second, the stakeholder has a high affinity with nature enhancement on the North Sea and has a high power on governmental decision making.

The grid can be found in appendix 3. The stakeholders in the upper right section are most relevant to talk with regarding the future of nature enhancement in offshore wind within the North Sea. These groups are international parties in OWF development e.g. Vattenfall, Orsted, Eneco, Shell and an international coalition of NGOs in the field of energy and nature: RGI.

### 3.2.5 INTERVIEWS EXPERTS OFFSHORE WIND INDUSTRY

To gain more depth in researching the future context of biodiversity in OWFs, I conducted 5 semi-structured interviews with experts in

this field. The outcomes will be translated into factors which are used to build the future contexts.

#### 3.2.5.1 INTERVIEW SET UP AND PARTICIPANTS

The interviews are conducted with five experts in the field of OWF development, a project engineer ecology at Shell Netherlands, project manager Eneco Netherlands, project manager Ørsted Denmark, marine ecologist Eneco Netherlands, project manager at RGI in Berlin. The interviews are anonymous so hereafter I refer to E1, E2, E3, E4, E5. Appendix 1 shows the interview guidelines that lead to the semi structured interviews. Summarizing the themes discussed:

- Introduction company
- International collaboration - North Sea countries
- Nature enhancement projects in OWFs
- DRN as partner
- Future of OWFs and ambitions regarding ecology

#### 3.2.5.2 DATA COLLECTION

The interviews were held at different places. Three interviews were scheduled over Teams, one interview was scheduled in person and one interview was over a phone call. All interviews were scheduled for an hour. Before all interviews, the participants were asked for the consent of data usage for my graduation project. The interviews were not recorded since the information was sensitive for their organization and they valued their privacy. Therefore, I made notes and transcribed the insights on sticky notes after the interview.

#### 3.2.5.3 DATA ANALYSIS AND SYNTHESIS

To analyze the data I collected the sticky notes with insights. Insights were considered valuable if they were relevant for the domain as a factor or to DRN as a company. Furthermore, insights should be mentioned by at least two individuals, correlate with another factor found or be individually remarkable.

#### 3.2.5.4 RESULTS

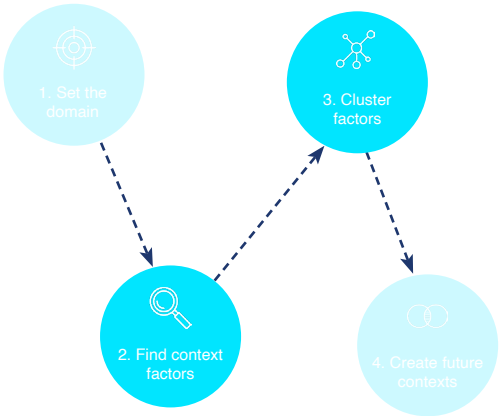
In appendix 6 an overview is given of the valuable insights in the form of quotes. These quotes are taken into account as a factor or strengthen an existing factor in the DEPEST analysis in appendix 7.

## 3.3 FIND CONTEXT FACTORS

The second step of the ViP method is to find context factors. According to the approach described in section 3.1.2 explore context factors within the established domain. The resulting context factors are organized in a DEPEST framework in appendix 7.

## 3.4 CLUSTERS OF FACTORS

With the domain defined and a broad selection of factors, the third step is to cluster the factors. From the co-creation (see section 3.1.3) I found twelve clusters of factors. Seven out of twelve clusters of factors are considered relevant within my scope of research and are presented below. The other clusters can be found in appendix 8.2.




### 3.4.1 ENGAGING LOCALLY

Local communities will be more involved in conserving biodiversity. Comparing the involvement of humans in reducing greenhouse gasses and carbon emissions, nature conservation is more on community basis (ITONICS, 2023)(E4, 2023).

### 3.4.2 NATURE EDUCATION

The attention for nature related topics is growing by the public and people are willing to learn how they can contribute (E3, 2023). This will involve education in local communities by NGOs and research institutions (ITONICS, 2023). Climate education is on its rise and nature education will follow and will gain a role in society (Darel, 2023).

### 3.4.3 NORTH SEA COOPERATION

Since the war between Russia and Ukraine there has been a growing interest in collaboration among North Sea countries. North European countries want to be independent of countries delivering fossil fuels (European Commission, 2022). In order to achieve this requires a growth in renewable energy sources (State of Green, 2023) (RVO, 2022). Offshore wind farms play a huge role in this where the goal is to create a capacity of 70 GW from OWFs on the North Sea. Additionally, there is growing interest in the utilization of hydrogen as an energy source among these countries (Clifford Chance, 2023). However, challenges persist in energy storage, transformation and the transportation of energy. (E3, 2023) To deliver the energy generated in the North Sea efficiently, cooperation between those countries will become important in the future. (Volkskrant, 2023)

### 3.4.4 PROMOTING BIODIVERSITY AS PART OF COMPANY'S STRATEGY

There is an increasing societal awareness for the importance of nature and climate change. Humans become aware that biodiversity is crucial as it makes Earth a viable place for them to live (Raworth, 2017). The nature restoration law is going to play a big role in increasing biodiversity (Nordic Energy Research, 2022)(E5, 2023). Therefore, companies are going to make commitments to create a net positive impact on nature (WWF, 2021)(E1, 2023)(E2, 2023)(E5, 2023). In the future this will become a standard part of their corporate strategy.

### 3.4.5 PUBLIC FIGURES CREATING AWARENESS FOR NATURE

Companies and high profile individuals increasingly take a stance on political and societal issues (Itonics, 2023). This also implies for nature related topics, where companies use media platforms more to convey their message about nature (Howarth, 2023) (The Future 100: 2023, 2023). The brand activism of Patagonia and Oatly are examples of successfully using media to create attention (Latana, 2022). Moreover, celebrities are playing an increasingly significant role in the climate debate. Public figures like Carice van Houten are drawing attention to environmental issues (De Volkskrant, 2023). Additionally, more documentaries are made on how to save our planet earth and they are shared massively all over the world. In the future, more examples of brand activism will follow where companies and high profile individuals will share their perspective on nature.

### 3.4.6 NATURE POSITIVITY PUZZLE

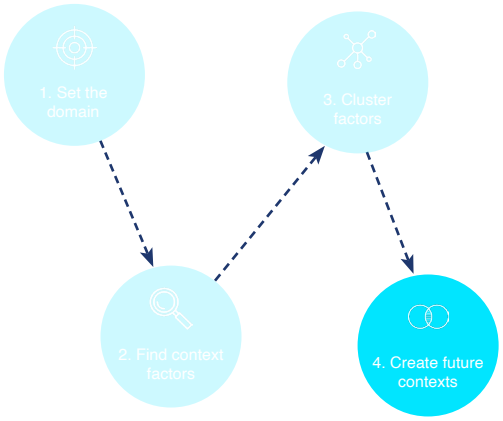
Due to the complexity of quantifying nature positivity, there is an uncertainty about how humans and business do good for nature (E2, 2023) (E4, 2023). There is ongoing discussion about whether nature needs enhancement, restoration or leave it at rest (DRN, 2023). What makes it even more complex is the time to measure impact on nature. It often takes several years, sometimes even a decade, to observe the outcomes of nature enhancement projects (E3, 2023)(E4,2023). Besides the complexity of measuring nature positivity, we live in a world with an overload of information and growing amounts of fake news (Harari, 2021). Therefore, it will be a struggle to find out how we can do good for nature.

### 3.4.7 INCREASE OF TRANSPARANCY

Even in a competitive industry in offshore wind, businesses can not ignore the fact that transparency will become key. Supply and demand for data is increasing. Leaders should build trust by sharing data pro actively. (Accenture, 2022) Companies confirmed this in various interviews that their aim is to share their knowledge in open source platforms, especially on climate related topics (E4, 2023)


## 3.5 CREATING THE FUTURE CONTEXT

With the factors clustered, we arrive at step 4 of the ViP method: creating the future contexts. Based on the approach explained in 3.1.4 present in this chapter the steps taken and the final future contexts.




### 3.5.1 BUILDING THE TWO DIMENSIONAL FRAMEWORK

The relations between the clusters of factors is shown in appendix 8.1. The result is that cluster of factors 2,4,6 are (X) challenges in nature enhancement and clusters of factors 1,3,5,7 are (Y) approaches to enhance nature. These themes are placed on the axis X and Y of the two dimensional framework.

### 3.5.2 DESCRIBING THE FUTURE CONTEXT

As described in the approach in 3.1.4, I multiply clusters of factors which result in the following twelve future contexts A - L:

*A) In the future, North Sea collaboration is significant in educating people about nature topics.*
*B) In the future, nature education starts by engaging locally.*
*C) In the future, public figures are speaking up to educate on nature related topics.*
*D) In the future, transparent data will support self-education on nature related topics.*
*E) In the future, North Sea collaboration contributes in figuring out positive effects on nature.*
*F) In the future, nature positivity is defined in locally engaged projects.*
*G) In the future, public figures speak up to define nature positivity.*
*H) In the future, transparent data will help in measuring nature positivity.*
*I) In the future, North Sea collaboration guides companies in adapting biodiversity in their business models.*
*J) In the future, engaging local communities on biodiversity is part of the company's strategy.*
*K) In the future, public figures are used to promote the biodiversity of companies.*
*L) In the future, transparency exposes company's business models and thus how they incorporate biodiversity.*

A visualization of future contexts which emerged from this process is shown in figure 9. In chapter 4, I will evaluate the future contexts to generate focus for further research.

*X axis: Challenges in nature enhancement*

| *Y- axis: Approach to enhance nature* | Cluster of factors 2 Nature education | Cluster of factors 6 Nature positivity puzzle | Cluster of factors 4 Promoting biodiversity as part of companies strategy |
|---|---|---|---|
| Cluster of factors 3 North Sea collaboration | A) In the future, North Sea collaboration is significant in educating people about nature topics. | E) In the future, North Sea collaboration contributes in figuring out positive effects on nature. | I) In the future, North Sea collaboration guides companies in adapting biodiversity in their strategy. |
| Cluster of factors 1 Engaging locally | B) In the future, nature education starts by engaging locally. | F) In the future, nature positivity is defined in locally engaged projects. | J) In the future, engaging local communities on biodiversity is part of company's strategy. |
| Cluster of factors 5 Public figures create attention for nature | C) In the future, public figures are speaking up to educate on nature related topics. | G) In the future, public figures speak up to define nature positivity. | K) In the future, public figures are used to promote biodiversity of company their strategy. |
| Cluster of factor 7 Increase of transparancy | D) In the future, transparent data will support self-education on nature related topics. | H) In the future, transparent data help in measuring nature positivity. | L) In the future, transparency exposes company's strategy and thus how they incorporate biodiversity. |

*Figure 9: Creation of future contexts within enhancing biodiveristy in OWFs in the North Sea*

## 3.6 LIMITATIONS OF THE METHOD

The ViP approach I used above to create future contexts comes along with certain limitations which might have influenced the outcome. In this section, I discuss the most important limitations.

My first limitation was a limited time-span to work with the ViP methodology. Using a complete ViP methodology acquires too much time within the scope of this research and therefore I used a simplified version of this method. This could have led to less surprising or innovative findings. By using external stakeholders input and various resources I tried to overcome this.

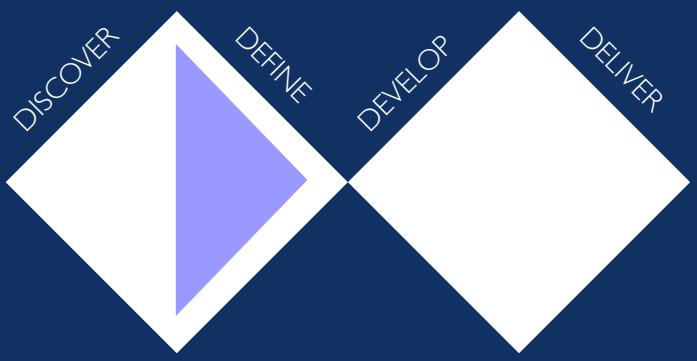
The second limitation is regarding the clustering and selection process of factors. Subjectivity of me and fellow students could have played a role in this process. Different researchers might prioritize different factors, which could have led to other resulting future contexts. Therefore, I did the clustering and selection process with multiple students in a co-creation session to minimize the change of different outcomes.

The third limitation is the small sample size of stakeholders which participated in the interviews. It is unlikely to cover all opinions and insights of experts on offshore wind farms in the future. To overcome this I tried to vary in stakeholders from different companies and function to enhance variety in their answers and perspectives.

# DEFINE

## 04 SYNERGY INTERNAL ANALYSIS DRN AND FUTURE CONTEXTS

In the discover phase, I explored future contexts within enhancing biodiversity on the North Sea by 2030 and presented many insights on the capabilities and needs of the organization DRN regarding international collaboration. Based on these findings, I look for synergy between promosing future contexts and most important needs and conclude with design challenges for DRN. Furthermore, I formulate a relevant design challenge for Accenture.



# 4. SYNERGY INTERNAL ANALYSIS AND FUTURE CONTEXT

In this chapter, I first evaluate the internal analysis followed by a conclusion with the most relevant aspects to focus on. In the second part of this chapter, I evaluate the future contexts and identify where the most opportunities lie for DRN. Finally, I evaluate where the synergy lies between the future contexts and identified needs. This leads towards two design challenges. The approach is visualized in figure 10 below.

## 4.1 EVALUATING THE INTERNAL ANALYSIS

Ideally, all needs are met and barriers are eliminated. Taking into consideration the limited time span of this graduation project, I select a main focus for further research. This is presented in the form of a design challenge. The identified strengths will be used in the next phase: develop. The weaknesses will be left out of this research scope because they are difficult to be solved within the given time span of this project.

### 4.1.1 METHOD

With the use of a Harris Profile, I choose focus for the most relevant needs and barriers. A Harris profile is often used to evaluate design concepts, however it can be used throughout all design phases of a project (Van Boeijen, A. et al., 2014).

The criteria set to evaluate the needs and barriers are based on three interests: DRN interest, Accenture's interest, and my own interest as a SPD student. The criteria are discussed with one employee of DRN and two employees of Accenture. After the

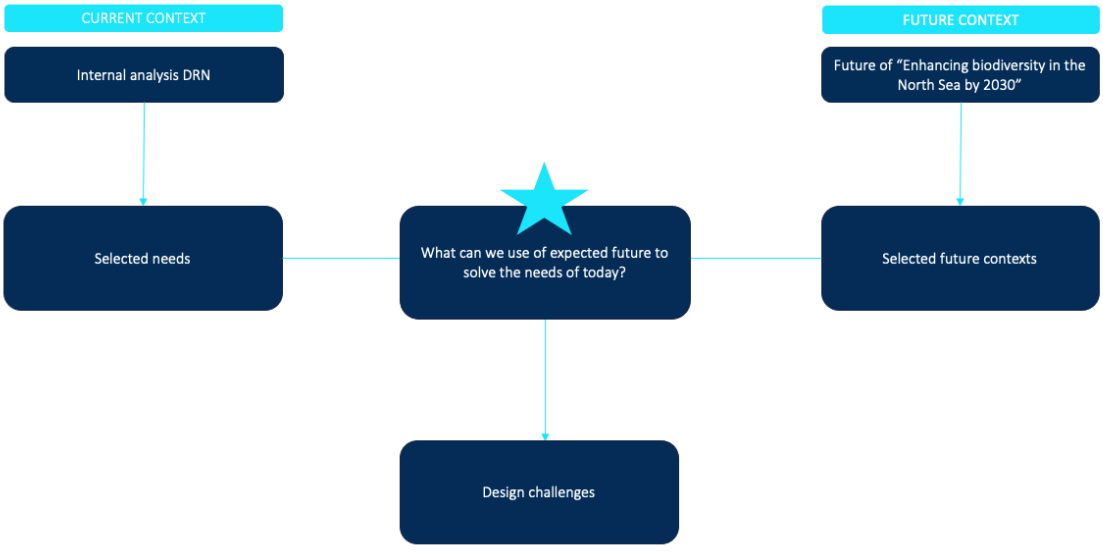



*Figure 10: approach to find synergy between needs and future contexts*

discussion, all criteria are given a score. The consideration for each score is discussed in appendix 9. Needs and barriers with a highest overall score are most likely to be the main focus in this research. The focus is discussed with DRN and Accenture to make sure everyone is aligned and satisfied with the direction.

Within my own interest as an SPD student I take into account the following three criteria:

- **Time**: is meeting the need manageable within the given time for my project?
- **SPD**: is meeting the need related to strategic design and do I have the resources to tackle this need as an SPD student?
- **Exclusive**: Is meeting the need a task on my own which makes the project "mine" and not mixed up with other research projects?

For DRN interests the following criteria are important:

- **Relevance**: is meeting the need relevant for DRN?
- **New value:** is solving the need creating new value for DRN?

For Accenture's interests the following criteria are important:

- **Relevance**: Does meeting the need fit in a certain way to "Toolbox' developed by Accenture?
- **New value:** Will solving this need give a chance to create new value for Accenture as a stakeholder?

### 4.1.2 RESULTS

Based on the outcome of the approach described above, I notice that sharing knowledge on nature enhancement projects and a strategy on international collaboration are the most relevant for the stakeholders involved in this project. Evaluating this outcome with DRN and Accenture confirms this result. This does not imply that the other two needs are eliminated for further research but the main focus is on solving these two needs.

Looking at the evaluation of the barriers to eliminate in this research the results are not significant. The most relevant barrier to further research is the use of effective communication tools. Because the relevance is relatively low, I will not take this into further research.

### 4.1.3 CONCLUSION

Based on the results presented above, I defined the following two needs for DRN:

1. Develop ideas for DRN to share knowledge on nature enhancement projects (need 1)

2. Create a strategy on international

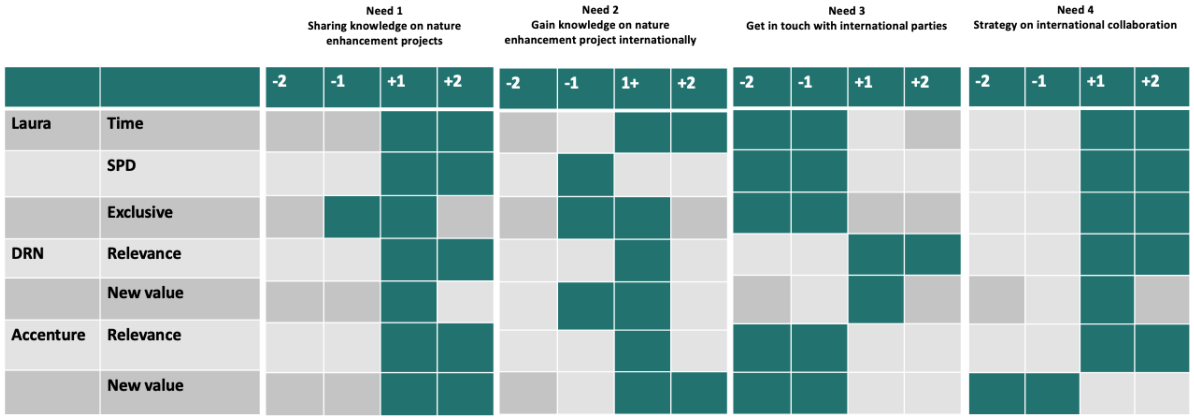



*Figure 11: Harris profile to evaluate needs*

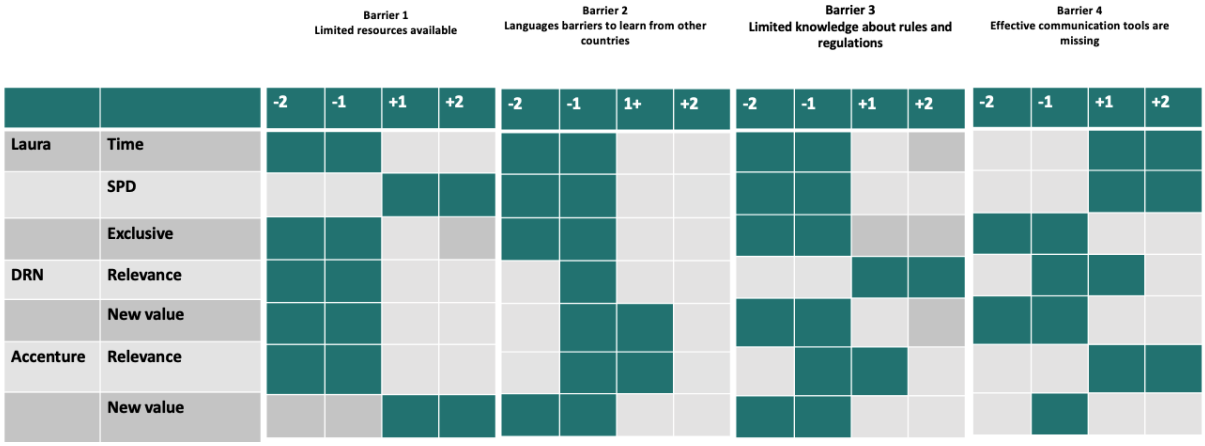



*Figure 12: Harris profile to evaluate barriers*

collaboration (need 4)

In section 4.3,I evaluate which future contexts can help to solve the two needs.

## 4.2 EVALUATING THE FUTURE CONTEXTS

### 4.2.1 METHOD

To evaluate the future contexts I validate my response towards the different future worlds according to Hekkert & van Dijk (2016). I discuss the response with two ViP experts to make sure it has potential for further research.

### 4.2.2 RESULTS

Evaluating the twelve future contexts presented in section 3.4.1, I see potential in the future contexts related to nature education.I believe education is fundamental in understanding the world and making changes. In the discussion with two ViP experts, it turns out they see potential in researching ways of educating people towards nature in the future. Therefore, I focus on four out of twelve future contexts:

**A. In the future, North Sea**

**cooperation plays a significant role in educating people about nature topics.**

**B. In the future, nature education starts by engaging locally.**

**C. In the future, more public figures are speaking up to educate on nature related topics.**

**D. In the future, transparent data enables self-education on nature related topics.**

4.2.3 CONCLUSION

The four future contexts mentioned above are most promising and are evaluated further in the next section.

## 4.3 SYNERGY BETWEEN INTERNAL ANALYSIS AND FUTURE CONTEXTS

At this point, I have identified two needs for DRN to overcome and selected the most promising future contexts. In this section, I examine how the identified future contexts can effectively contribute to solving the needs.

4.3.1 METHOD

To start with, I align the needs with the four selected future contexts, aiming to identify synergies and mutual reinforcement. In cases where necessary, I examine DRN's strengths to determine which future contexts are the most compatible.

4.3.2 EVALUATION

**Need 1 - Create a strategy on international collaboration**

This need aligns with the future context A: *North Sea cooperation plays a significant role in educating people about nature topics*. DRN could use the Northern EU cooperation as an opportunity to share knowledge on nature enhancement.

**Need 2 - Develop ideas for DRN to share knowledge on nature enhancement projects**

This need aligns with all four future contexts, as they all are about educating people on nature. After evaluating the compatibility of DRN's strengths with these four contexts, it is clear that the context *nature education starts by engaging locally* aligns closest to DRN's strengths. Therefore, DRN should use the opportunity of sharing knowledge by engaging locally. The details of this evaluation can be found in appendix 12.

### 4.3.3 CONCLUSION

Based on the synergy between future contexts and needs, I formulate the two following design challenges:

***a) Create a strategy on North Sea collaboration including a recommended country to start sharing knowledge with on nature enhancement***

***b) Develop ideas for DRN to share knowledge on nature enhancement projects in OWFs by engaging locally***

## 4.4 DISCOVER THE CONTRIBUTION FOR ACCENTURE

As mentioned in the beginning of this research, I evaluate after the first research diamond what the contribution could be for Accenture. To discover what Accenture can do with the insights found in the research phase, I discussed the possibilities with my supervisors from the TU and mentors from Accenture. We discussed two potential contributions:

- Accenture can use the report for DRN to generate new business opportunities
- Accenture can use the ViP method as design methodology for other clients

Option A, I leave up to Accenture to consider after my thesis. For option B, I explore in chapter 7 why this method is relevant and how it can be used by Accenture Song.

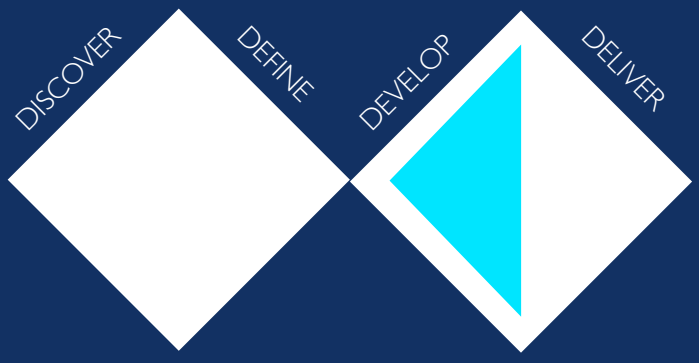
Therefore, challenge 3 is formulated as following:

***c) Why and how can the VIP method be used by Accenture Song?***

# DEVELOP DRN

## 05 STRATEGY FOR NORTH SEA COLLABORATION
## 06 IDEAS TO SHARE KNOWLEDGE ON NATURE ENHANCEMENT

With three challenges defined for DRN and Accenture, it is time to explore and develop meaningful solutions. In chapter 5, I create a strategy on North Sea collaboration by setting up a decision tree. I evaluate which country is the most suitable to start sharing knowledge with on nature enhancement. In chapter 6, I continue with the development of ideas for the selected country to initiate sharing knowledge on nature enhancement. This is done through two ideation sessions, one session individually and different sessions with participants. The challenge for Accenture is adressed in chapter 9.



# 05 STRATEGY FOR NORTH SEA COLLABORATION

In this chapter, I address challenge one: develop a strategy for North Sea collaboration for DRN. To develop a strategy, I start with determination of the most suitable North Sea country to share knowledge with on nature enhancement in 2024. Based on this outcome, I create a strategy for North Sea collaboration.

## 5.1 METHOD

In order to determine the most suitable country or countries to initiate knowledge sharing in 2024, I start by identifying the factors that have an impact on this. Subsequently, I divide the factors in criteria and constraints. Constraints are limitations which the country needs to meet in order to be suitable for knowledge sharing in 2024. Criteria determine how suitable the country is and get a weight based on a discussion of relative importance with DRN (Van Boeijen, A. et al., 2014).

When the constraints and criteria are determined, I evaluate each of the North Sea countries. I use a decision tree to support this process as visualized in figure 13. First the constraints are evaluated and second the criteria are discussed.

Constraints and criteria are assessed using insights obtained from interviews conducted with DRN (section 2.2) and external parties (section 3.2.5), along with additional desk research. The findings from the interview with DRN are presented in appendix 10 and the insights from interviews with external parties in appendix 6.

When a country is assessed with the support of the decision tree, a final score is given. The final scores will be discussed and a recommendation for the most suitable country will be given. The method is visualized on the poster on page 57.

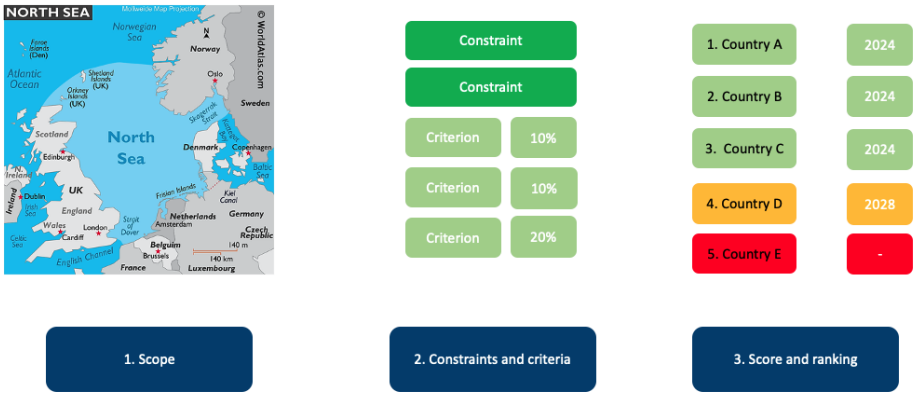



*Figure 13: Simplified overview of the North Sea country analysis*

### 5.1.1 SETTING UP THE DECISION TREE

Based on the evaluation with DRN two constraints are identified: 1) current OWF market size and 2) OWF foundation type. First, the country must currently have operating offshore wind farms otherwise sharing knowledge around nature enhancement is not applicable in 2024. Second, the country must have present bottom fixed offshore wind turbines because DRN currently only has knowledge about this type of foundation.

Besides two constraints, six criteria are identified with associated weights:

*1) expected market size by 2030 (30%)*
*2) similarity of marine habitat (20%)*
*3) progress on nature enhancement (20%)*
*4) progress on ecological rules and regulations (10%)*
*5) overlap in stakeholders (10%)*
*6) willingness to cooperate (10%)*

An exlanation on measurement and relevance of the criteria and constraints is provided in appendix 22. Four different scenarios (A, B, C and D) emerge based on the evaluation of the two constraints. The approach described is visualized in the decision tree below.

A. When a country meets both of the constraints, it can be evaluated further on suitability for knowledge sharing from 2024 on.

B. When a country currently meets a market size >0 GW but has no bottom fixed foundations present in the country, the country might be suitable for knowledge sharing in later stages since DRN might improve their knowledge on different foundation types in the future. Therefore a country will be discussed on each of the six criteria mentioned above.

C. When a country does not currently meet a market size >0 GW, the question is if it aims for a larger market size than 0 GW by 2030. If yes, a country might be suitable in the future to share knowledge with and therefore will be evaluated on the six criteria mentioned above.

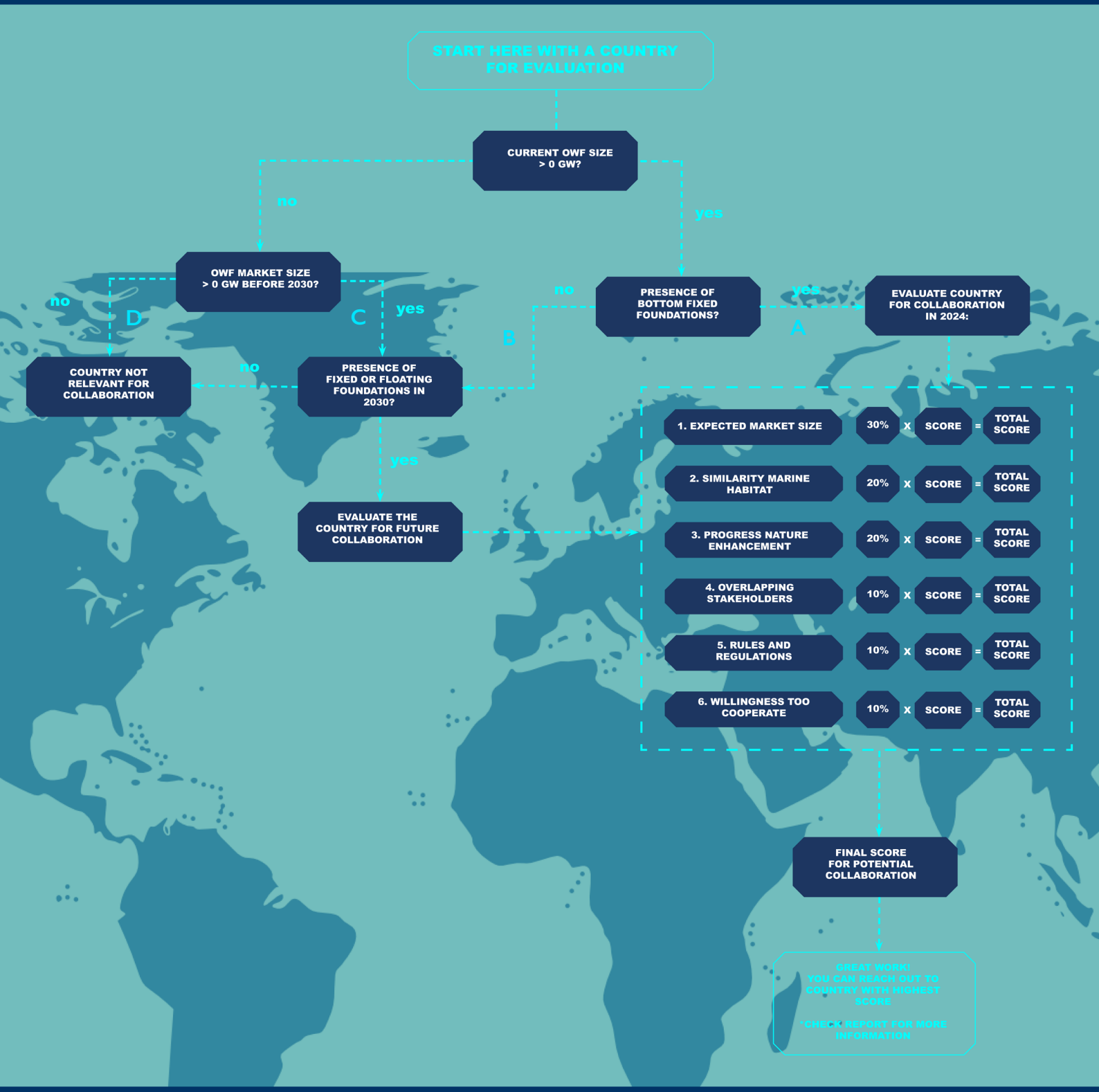
D. When a country does not currently meet a market size >0 GW, the question is if it aims for a larger market size than 0 GW by 2030. If not, the country is not considered relevant for DRN to collaborate with.

A DECISION TREE FOR

# DE RIJKE NOORDZEE

TO ASSESS

# INTERNATIONAL COLLABORATION




HEY! ARE YOU INTERESTED IN CREATING INTERNATIONAL IMPACT BUT YOU DON'T KNOW WHERE TO START?

THEN THIS IS EXACTLY WHERE YOU SHOULD BE! :) THIS DECISION TREE WILL GUIDE YOU IN CHOSING A COUNTRY FOR COLLABORATION

NOTES:
- FOR EXTRA ELABORATION ON CRITERIA SEE REPORT
- EXAMPLE ON NORTH SEA COUNTRIES YOU CAN BE FOUND IN REPORT
- FOR QUESTIONS REACH OUT TO LAURA OR ACCENTURE SONG

Accenture Song

De Rijke Noordzee

## 5.2 EVALUATION OF THE COUNTRIES

With the constraints and criteria clarified, I evaluate the North Sea countries: Belgium, Germany, France, UK, Norway and Denmark with the support of the decision tree. The insights for each country are discussed below.

### 5.2.1 BELGIUM

Belgium meets the two constraints: their existing capacity is 2.3 GW and uses fixed foundations (Royal Haskoning, 2023). The country is further evaluated on suitability for knowledge sharing in 2024.

The ambitions for expansion of OWFs is limited: Belgium wants to reach a capacity of 5 GW by 2030 (Royal Haskoning, 2023). This is mainly due to the small Belgium coastline which makes possibilities for OWFs exploitation limited (E5, 2023).
Belgium is a member of the EU and has a close coherent habitat with the Netherlands (E5, 2023). DRN has already collaborated closely with the Belgium stakeholder Vlizz, both in Belgium and UK waters (DRN 1, 2023). Furthermore, partners in Belgium have reached out to DRN for collaboration (DRN 1, 2023).

Belgium has monitored their marine ecosystem for more than ten years which is organized centrally (DRN 1, 2023) (DRN 3, 2023). One interesting aspect is Belgium's placement of OWFs in nature protected areas. This makes Belgium quite advanced in nature enhancement projects. DRN could possibly learn from their expertise in nature protected areas by looking into the results of these pilots and what DRN could learn (E5, 2023).

Regarding rules and regulations, Belgium has set some ecological criteria, although the precise commitments remain somewhat vague (DRN 2, 2023). The conditions for constructing OFWs is similar to the Netherlands: Belgium has a low sea depth (<40m), a sand seabed (Bathymetry of the North Sea, z.d.).

Considering these insights, I assign the following scores to the factors:

1. *Existing capacity - check*
2. *Fixed foundations - check*
3. *Expected market size - medium*
4. *Marine habitat - high*
5. *Progress nature enhancement - medium*
6. *Overlap stakeholders - high*
7. *Rules and regulations - medium*
8. *Willingness to cooperate - low*

### 5.2.2 FRANCE

France has currently no operating OFWs on the North Sea which generate electricity (Royal Haskoning, 2022) Based on this, France is not considered relevant for DRN to share knowledge with in 2024. However, France aims to reach a capacity of 5 GW by 2030 (Royal Haskoning, 2022), thus I discuss the potential of France for the future.

DRN 3 (2023) states: "France is making progress but has different conditions and sizes of OWFs." The difference in marine habitats can be noticed in appendix 22 (Bathymetry of the North Sea, z.d.,): the soil is in some parts a coarse substrate. The sea depth looks similar to the Dutch coastline with depths under 40 meters.

However, France has a very strong public opposition against wind farms (E5, 2023). Therefore, the country is planning to put the wind farms further out of the coastline where it quickly reaches a depth larger than 100 meters, floating OWFs has more potential (Bathymetry of the North Sea, z.d.,)(E5, 2023).

DRN is currently not working with any partners in France and there are no French stakeholders involved (DRN 2, 2023). However, France recently reached out to DRN to collaborate (DRN 1, 2023).

Considering these insights, I assign the following scores.

1. Existing capacity - fail
2. Fixed foundations - fail
3. Expected market size - medium
4. Marine habitat - medium
5. Progress nature enhancement - high
6. Overlap stakeholders - low
7. Rules and regulations - high
8. Willingness to cooperate - high

### 5.2.3 GERMANY

Germany has a relatively high capacity of OWF of 7.7 GW. The country also has fixed bottom foundations (Orsted, 2023). Considering these insights, Germany is analyzed on suitability for DRN to share knowledge in 2024.

Germany is bordering the Dutch waters of the North Sea which increases the likelihood of similar marine habitats (E5, 2023). Germany has huge ambitions to hit 30 GW offshore wind by 2030 which include at least 19,8 GW in the North Sea close to the borders of the Netherlands (Royal Haskoning, 2022) (Reuters, 2023). The marine habitat of Germany is similar to the Netherlands with a low sea depth (<40 meters) and a sandbed substrate (Bathymetry of the North Sea, z.d.).

Germany is not as experienced in nature enhancement projects as the other countries. In Germany, money plays a big role in winning tenders over meeting ecological

criteria (E3, 2023). A benefit of cooperation with Germany is the high number of DRN stakeholders which are also operational in German OWFs. These stakeholders include mostly industry partners like Eneco, Vattenfall, Tennet etc. (DRN 5, 2023)

However, DRN has not been contacted for collaboration with Germany (DRN 1, 2023)

1. *Existing capacity - check*
2. *Fixed foundations - check*
3. *Expected market size - high*
4. *Marine habitat - high*
5. *Progress on nature enhancement - high*
6. *Overlap stakeholders - high*
7. *Rules and regulations - high*
8. *Willingness to cooperate - low*

### 5.2.4 DENMARK

Denmark meets both constraints: currently they have 2.3 GW operating OWFs and constructed offshore wind turbines with fixed foundations in the same way as the Netherlands (Orsted, 2023).

Their marine habitat is quite similar to the Netherlands. As illustrated on the map in appendix 22, a large part of the Danish waters has a sea depth under 40 meters (Bathymetry of the North Sea, z.d.,) and a sand substrate seabed on a large part of the North Sea.
Denmark aims to develop 12.8 GW offshore wind with at least 3.65 GW on the North Sea (Royal Haskoning, 2022). According to E5 DRN can play a significant role: "Denmark has huge targets for OFW development and the expertise of DRN would be super helpful" because "Denmark is not as advanced as the Netherlands in nature enhancement."

Regarding nature enhancement in OWFs, Denmark is currently having negotiations on ecological rules and regulations which can be interesting to learn from (E5, 2023). Denmark has for example an open source website where marine spatial planning is illustrated and explained (Danmarks Havplan, z.d.).

Many employees and external parties mention Denmark as a suitable partner for collaboration. DRN 1 mentions: "Denmark is a viable option as they are already making progress in the field of nature enhancement in OWFs." According to E1 and E5 (2023), Denmark is experimenting with artificial reefs in the Danish North Sea and Orsted is cooperating with WWF on artificial reefs. Additionally, there is overlap between partners of DRN such as Orsted, Vattenfall, etc. which have business in Denmark. There has been collaboration on a congress in Copenhagen earlier this year with these stakeholders (DRN 3, 2023). Although, Danish organizations have not reached out to DRN for collaboration (DRN 1, 2023)

Considering these insights, I assign the following scores:

1. *Existing capacity - check*
2. *Fixed foundations - check*

3. *Expected market size - high*
4. *Marine habitat - high*
5. *Progress nature enhancement - medium*
6. *Overlap stakeholders - high*
7. *Rules and regulations - medium*
8. *Willingness to cooperate - low*

### 5.2.5 NORWAY

Norway does not meet the constraints with currently no operating offshore wind. According to Royal Haskoning (2022), Norway has the ambition to generate 4.5 GW by 2030 but these numbers are uncertain.The construction of the OWFs will be different compared to the Netherlands, Norway has ambitions in floating offshore wind (Orsted, 2023) (E5, 2023). Given these facts, Norway can not be considered suitable for knowledge sharing in 2024. I evaluate the country for future possibilities.

Their marine habitat is different from the Netherlands. The waters bordering the Norwegian coastline quickly reach a depth of > 200 meters and the soil is for a large part rocks and mud along the coastline (Bathymetry of the North Sea, z.d.,). However, Norway has rich biodiversity of the North Sea in the Norwegian fjords which could be interesting to learn from (E5, 2023).

Norway is currently figuring out the rules and regulations regarding nature enhancement. E1 states: "Norway has no criteria regarding ecology that I am aware of." An employee of DRN mentions (DNR 1, 2023): "Norway is making up their strategy so this could be a good opportunity for DRN to get involved."

Norway is not a member of the EU and there currently no collaborations or overlapping stakeholders of DRN involved in Norwegian OWFs. Though, Norway has showed interest towards DRN to collaborate in the future (DRN 1, 2023)

1. *Existing capacity - fail*
2. *Fixed foundations - fail*
3. *Expected market size - medium*
4. *Marine habitat - high*
5. *Progress nature enhancement- medium*
6. *Overlap stakeholders - low*
7. *Rules and regulations - medium*
8. *Willingness to cooperate - high*

### 5.2.6 UK

The UK meets both constraints with a currently operating capacity of 11 GW and the presence of fixed foundations. The market size of offshore wind in the UK is one of the largest of the North Sea countries with an ambition of 50 GW by 2030 (Royal Haskoning, 2023)(DRN 3, 2023). As shown on the map in appendix 22, the UK has possibilities to exploit offshore wind with fixed foundations on the east, south and west coast of the country (Orsted, 2023). On the north and west side the sea depth is larger, where there are possibilities for floating wind farms (Bathymetry of the

North Sea, z.d.,).

DRN has partnerships in the UK and there is possibility for more (DRN 1, 2023). They have already started collaboration with the Crown Estate, an English independent organization which is involved in nature enhancement projects (Crown Estate, 2023). DRN has also worked together with a NGO, Bird Life, to protect biodiversity (DRN 1, 2023) (BirdLife International, 2023). A downside of cooperating with the UK is the Brexit which resulted in the UK not being a member of the EU anymore (Ministerie van Buitenlandse Zaken, 2021). This causes difficulties in shipping, monitoring and sharing information across the UK and Dutch borders. More permits are needed to collaborate on nature enhancement projects.

The UK has a similar marine habitat with opportunities. Schotland and Ireland have similar conditions in the ocean where for example the oysters are doing great (DRN 3, 2023).

The UK is considered as a country where DRN could learn from. They have an insight program on ecological results and have already been working on different nature enhancement projects (DRN 3, 203). The UK has reached out to DRN to collaborate on nature enhancement (DRN 1, 2023).

1. *Existing capacity - check*
2. *Fixed foundations - check*
3. *Expected market size - high*
4. *Marine habitat - high*
5. *Progress nature enhancement - medium*
6. *Overlap stakeholders - high*
7. *Rules and regulations - high*
8. *Willingness to cooperate - low*

The results of the North Sea country evaluation are summarized in table 1.

| | Weight | Belgium | France | Germany | Denmark | UK | Norway |
|---|---|---|---|---|---|---|---|
| Constraints 1 – current market size | | yes | No | yes | yes | Yes | No |
| Constrain 2 – fixed foundations | | yes | no | yes | yes | yes | No |
| 1. Expected market size | 30% | Medium | Medium | High | High | High | Medium |
| 2. Marine habitat | 20% | High | Medium | High | High | High | Medium |
| 3. Progress on nature enhancement | 20% | Medium | High | High | Medium | Medium | High |
| 4. Overlapping stakeholders | 10% | High | Low | High | High | Medium | Low |
| 5. Rules and regulations | 10% | Medium | High | High | Medium | Medium | High |
| 6. Willingness to cooperate | 10% | High | High | Low | Low | High | Low |
| SCORE | 100% | 2,4 | 2,3 | 2,8 | 2,5 | 2,6 | 2,2 |

*Table 1: summarized evaluation of the North Sea countries*

## 5.3 RESULTS

### 5.3.1 FROM EVALUATION TO SCORES

To be able to take the weight into account the evaluation, I translate high/medium/low evaluation into scores as following:

*High = 3*
*Medium = 2*
*Low = 1*

The translated scores are presented in appendix 23.

A final score for a criterion is calculated by multiplying the weight with the score:

***Score x weight = score criterion (for example 3 x 20% = 0,6)***

***Score criterion 1 + score criterion 2 + score criterion 3 + score criterion 4 + score criterion 5 + score criterion 6 = final score country***

Based on this approach, the highest score possible is 3 and lowest is 1. The results are summarized in table 2. Four countries meet the two constraints and are evaluated on suitability for knowledge sharing from 2024. The following ranking emerged based on the final scores:

| | Weight | Belgium | France | Germany | Denmark | UK | Norway |
|---|---|---|---|---|---|---|---|
| Constraints 1 – current market size | | | | | | | |
| Constrain 2 – fixed foundations | | | | | | | |
| 1. Expected market size | 30% | 0,6 | 0,6 | 0,9 | 0,9 | 0,9 | 0,6 |
| 2. Marine habitat | 20% | 0,6 | 0,4 | 0,6 | 0,6 | 0,6 | 0,4 |
| 3. Progress on nature enhancement | 20% | 0,4 | 0,6 | 0,6 | 0,4 | 0,4 | 0,6 |
| 4. Overlapping stakeholders | 10% | 0,3 | 0,1 | 0,3 | 0,3 | 0,2 | 0,1 |
| 5. Rules and regulations | 10% | 0,2 | 0,3 | 0,3 | 0,2 | 0,2 | 0,1 |
| 6. Willingness to cooperate | 10% | 0,3 | 0,3 | 0,1 | 0,1 | 0,3 | 0,3 |
| SCORE | 100% | 2,4 | 2,3 | 2,8 | 2,5 | 2,6 | 2,2 |

*Table 2: final calculated scores for the North Sea countries*

1. **Germany (2.8)**
2. **UK (2.6)**
3. **Denmark (2.5)**
4. **Belgium (2.4)**

France and Norway do not currently meet the constraints. Based on the evaluation for the future closer to 2030, the following scores were found:

1. **France (2.3)**
2. **Norway (2.2)**

### 5.3.2 DISCUSSION OF THE RESULTS

The rankings and scores indicate that countries Germany, UK, Denmark and Belgium can be considered suitable for collaboration from 2024. For the final decision I consider not only the scores but also strategic considerations and the potential impact of DRN's expertise in nature enhancement through offshore wind projects.

Differences can be noticed in market size, Belgium scores relatively low whereas the other three countries offer great opportunities with their market size for DRN to make a huge impact. Another notable difference is the progress in nature enhancement. Germany is not far away in executing nature enhancement projects which gives DRN opportunities to share knowledge with them. However, Germany did not show interest in collaboration with DRN, so DRN should reach out themselves.

The other three countries, Denmark, UK and Belgium, are more advanced in ecological rules and regulations as well as in their progress in nature enhancement projects. Therefore, I suggest the focus could be, instead of only focusing on knowledge sharing, on gaining knowledge from these countries.

Discussing the potentials regarding 2030, France and Norway are both not far in nature enhancement progress and ecological rules and regulations. This could be an opportunity for DRN to share their knowledge in the future. This however depends on several factors which will become clear in the future. For example, if DRN gains knowledge on how to execute nature enhancement projects in floating offshore wind, they would be able to support France and Norway. What is interesting in the collaboration with Norway and France is the difference in marine habitats. Here, DRN has the opportunities to learn in the future.

Remarkable is the low overlap in stakeholders in both France and Norway. However, there is a willingness to cooperate so new relationships could be built.

### 5.3.3 LIMITATIONS OF THE METHOD AND SCORING SYSTEM

Overall, I believe the results provide a clear understanding of each of the country's potential regarding international collaboration. The systemic evaluation with the personalized decision tree enables DRN to make an informed decision. There are however limitations and remarks of the scoring system I used.

First of all, the scoring system creates a relative comparison between countries which might not reflect the actual suitability for collaboration. By critically discussing the scores towards the countries, the differences are highlighted and this limitation is minimized. Thus, in further research one could not use the scoring system without closely discussing where the differences lie.

A second limitation is in the assignment of weight to the criteria. This process is subjective. By involving two employees of DRN in this process, I tried to overcome this limitation. However, other stakeholders might prioritize criteria differently which leads to varied outcomes.

A third important limitation is that the scoring system reduces complex factors to a limited number of score levels, high, medium, low. This could have led to potentially overlooking fine differences that could influence the collaboration.

A fourth limitation is about the time that this report is written. The scoring system I developed, is applicable at the moment I write this report and does not consider the potential change of factors over time. This can lead to recommendations that might become outdated. My aim was to cover at least all important factors until 2030.

Lastly, a limitation of the scoring system is that the relation between factors is in real situations complexer than the scoring system reflects, the results might be therefore oversimplified. To include this, I discussed important relations in the discussion.

## 5.4 CONCLUSION

Based on the analysis and discussion of the results, I recommend the following strategy to DRN.

*1:* DRN collaborates with **Germany** by *sharing knowledge* on Nature Enhancement from 2024 on.

*2:* DRN collaborates with **Denmark, UK and Belgium** by *sharing and gaining knowledge* on nature enhancement.

*3:* DRN *scales knowledge* ***sharing o***n nature enhancement by collaborating with **France and Norway** close to 2030.

In chapter 7, I continue with this conclusion by explaining how DRN can work with these insights.

# 06 IDEAS TO SHARE KNOWLEDGE

Now I determined that Germany is the most suitable to share knowledge with, I explore ideas on how DRN can realize this. In the first research diamond, I found the opportunity to share knowledge on nature enhancement by engaging locally. Therefore, I develop ideas or DRN within this opportunity. The ideation is split up in two parts: an individual brainstorm and a brainstorm with multiple participants.

## 6.1 INDIVIDUAL BRAINSTORM

The ideation starts with an individual brainstorm which is a method to generate a large number of ideas (Van Boeijen, A. et al., 2014).

### 6.1.1 METHOD

In order to get inspiration for the brainstorm session, I started with a literature review on successful local engagement methods followed by a review of examples of nature organizations in the field of nature enhancement. This literature review can be found in appendix 14.

From the literature review I identified four principles of engaging locally in the context of nature enhancement:

1. Nominate an official plant or animal
2. Emphasize the importance of local habitats
3. Give responsibility
4. Create involvement and commitment

The following four largest nature organizations in the Netherlands are studied for case examples on nature enhancement:

1. Natuurmonumenten
2. WWF
3. Provinciale landschappen
4. Vogelbescherming

With these principles and case studies from organizations in mind, I conducted an individual brainstorm session.

### 6.1.2 RESULTS

From the individual brainstorming, 30 ideas were generated. The ideas are presented in appendix 15. After the next brainstorm with different participants, I further refine and evaluate the ideas.

## 6.2 BRAINSTORM WITH DIVERSE PARTICIPANTS

The individual brainstorm served as a great starting point of the ideation phase. However, to speed up the generation of ideas and create different perspectives, I organize an ideation session with more participants.

### 6.2.1 METHOD

#### 6.2.1.1 BRAINSTORM SET-UP AND PARTICIPANTS

Due to the holiday period, limited people are available at the faculty and the office so I choose to do the brainstorm sessions over video calls. I used Miro boards for documentation of answers during the sessions.

A total of 12 participants joined the brainstorm sessions which lasted for approximately 30 minutes. Participants were gathered through my own network and are all Dutch. To make sure the participants represented a large part of the population, a wide range of participants were asked to join. This resulted in participants joining between 19 and 62 years old with an average age of 32. Brainstorm sessions were held one on one.

Before each session, I asked the participant to read a document with context on my project and the method of the brainstorm explained, see appendix 11. Within this document, I asked the participants for example to think freely in their ideas and not in limitations.

#### 6.2.1.2 STRUCTURE OF THE SESSION

The brainstorm session consisted of two parts A and B.

A. To make the main design challenge more tangible and accessible for participants in the brainstorm, I first explore people's personal connection, experiences and knowledge about nature in the North Sea and local engagement. Therefore, I drafted the following five brainstorm questions:

1. *What do you know about nature in the North Sea?*
2. *What moments are you in connection (literally or figuratively) with the North Sea?*
3. *In which situations did or do you learn something about nature in the North Sea?*
4. *Can you name successful examples from other nature organisations on nature enhancement (Natuurmonumenten, WWF, Vogelbescherming or Provinciale Landschappen)?*
5. *What interactive activities have you been engaged in locally to learn something about nature?*

B. I asked the participants to come up with answers on the five questions (-+3 min per question). After this I asked the participants to come up with solutions for the main design challenge, answers from the first five brainstorm questions can serve as inspiration (-+15 min in total):

*How can DRN share knowledge on nature enhancement in OWFs in the North Sea by engaging locally?*

6.2.1.3 ANALYSIS OF THE ANSWERS

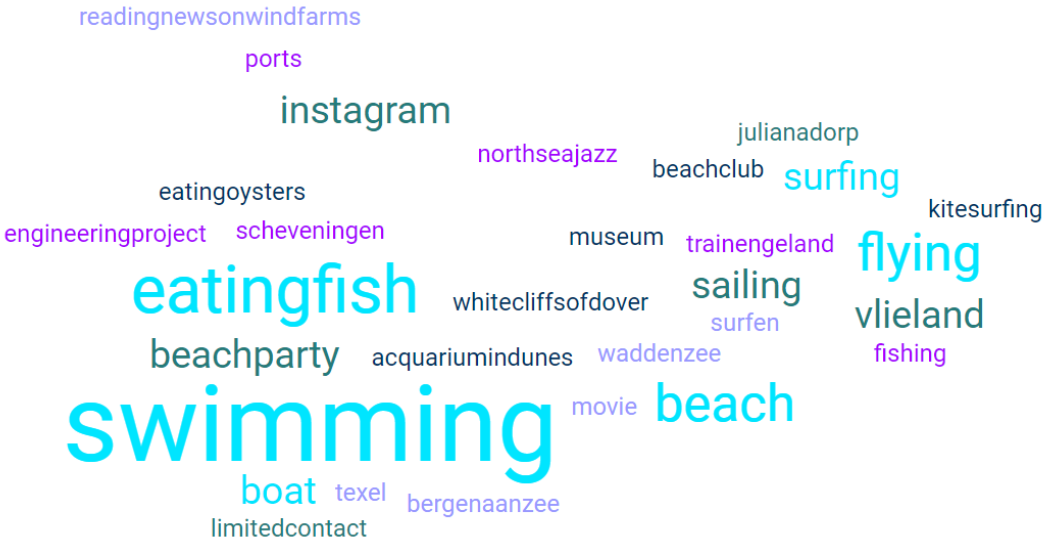
To effectively note down the answers and brainstorm on the topic, I created five mind maps on the Miro board (University of Adelaide, 2014). Furthermore, I cluster similar answers to keep an overview. Ideas on the main challenge are written down on sticky notes on the Miro board.

6.2.2 RESULTS

The brainstorm sessions resulted in five different mind maps for each sub question with different categories of answers and various ideas were generated to solve the main design challenge. From the five subquestions, the answers on subquestion two are relevant to use in further evaluation of the ideas in the next chapter. I will discuss these answers in the next section. Answers on the other four sub questions served as inspiration for the ideation session but are not relevant for the evaluation of the ideas and will therefore not be further discussed.

6.2.2.1 Results session A - subquestion

The answers from participants on what moments they are in connection with the North Sea are visualized in the wordweb



below. Answers given multiple times are presented in a larger font type and answers given less times are presented in a smaller font type. From these answers I created the following four categories which are mentioned by at least six different people:

1. visiting a place close to the North Sea - 9/12 participants
2. eating seafood from the North Sea - 8/12 participants
3. swimming in the North Sea - 6/12 participants
4. cultural activities related to the North Sea - 7/12 participants

These four categories will be used for the evaluation of ideas.

6.2.2.2 Results session B - main question

In the brainstorm on the main question a total of 58 ideas is generated by the twelve participants. An overview of the ideas can be found in appendix 15. In the next section 6.3, I will evaluate and refine the ideas.

## 6.3 EVALUATION OF IDEAS

The ideas from both brainstorm sessions are collected which results in a total of 88 ideas. Before analyzing the most suitable ideas, I identify which ideas are similar and can be eliminated or combined. This combination and elimination is done on a Miro board. A total of 70 ideas is left for further evaluation.

### 6.3.1 METHOD

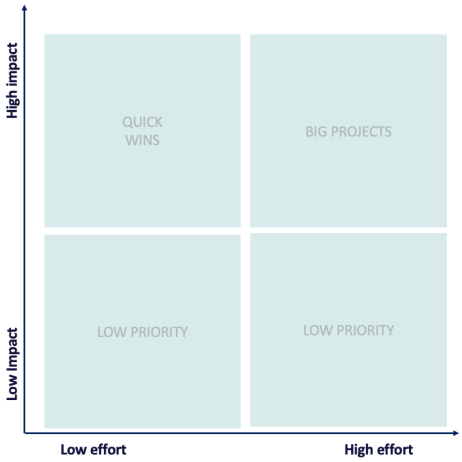



*Figure 14: Impact effort matrix*

The evaluation of ideas is based on two parts. First I use a methodology often used within Accenture: an impact effort-matrix (Accenture, 2023). The goal of the impact/effort matrix is to determine the relationship between the amount of effort required to achieve a desired outcome and the influence this has on the project's objectives. The tool is useful for me to make a choice for the ideas that have the best impact/effort ratio. To determine which ideas are most useful for sharing knowledge on nature enhancement in phase one with Germany, I defined the following definitions based on DRN desires.

- ***Impact***: The extent of impact the idea has on achieving goals for DRN. The more people and organizations are reached by high visibility with this idea, the more likely DRN can achieve goals on enhancing biodiversity in the North Sea.
- ***Effort***: The amount of effort required to implement the idea by DRN. Ideas aligning more with DRN's strengths, have low costs, resources are available, partnerships are easy to set up, intend to have a lower effort for DRN to start in 2024.

Secondly, I mark ideas which are aligned with the top four categories mentioned by people when they are in connection with the North Sea:

1. visiting a place close to the North Sea
2. eating seafood from the North Sea
3. swimming in the North Sea
4. cultural activities related to the North Sea

These ideas offer the unique opportunity for DRN to share knowledge when people are already connected with the North Sea. According to the New York State Department of Environmental Conservation, connecting with local habitats can increase understanding of the relevance of nature.

### 6.3.2 RESULTS

Based on the method described above, the impact-effort matrix resulted in the categorization of ideas as presented in appendix 24. As explained in the methodology above, I select the ideas which acquire low effort, have a high impact ánd connect people with the North Sea, see figure 15. The four ideas selected are:

1. Share knowledge on nature enhancement by utilizing menu cards in OWF seafood restaurants.
2. Share knowledge with a visual exhibition on nature enhancement on a North Sea jazz festival
3. Share knowledge by selling oyster boxes in local food stores.
4. Share knowledge when people are walking along the Dutch coast line through showing visuals and information boards.

### 6.3.3 CONCLUSION

The four ideas presented are relevant in phase one for sharing knowledge with Germany. In chapter 7, I explain how DRN can do this implementation of the ideas.

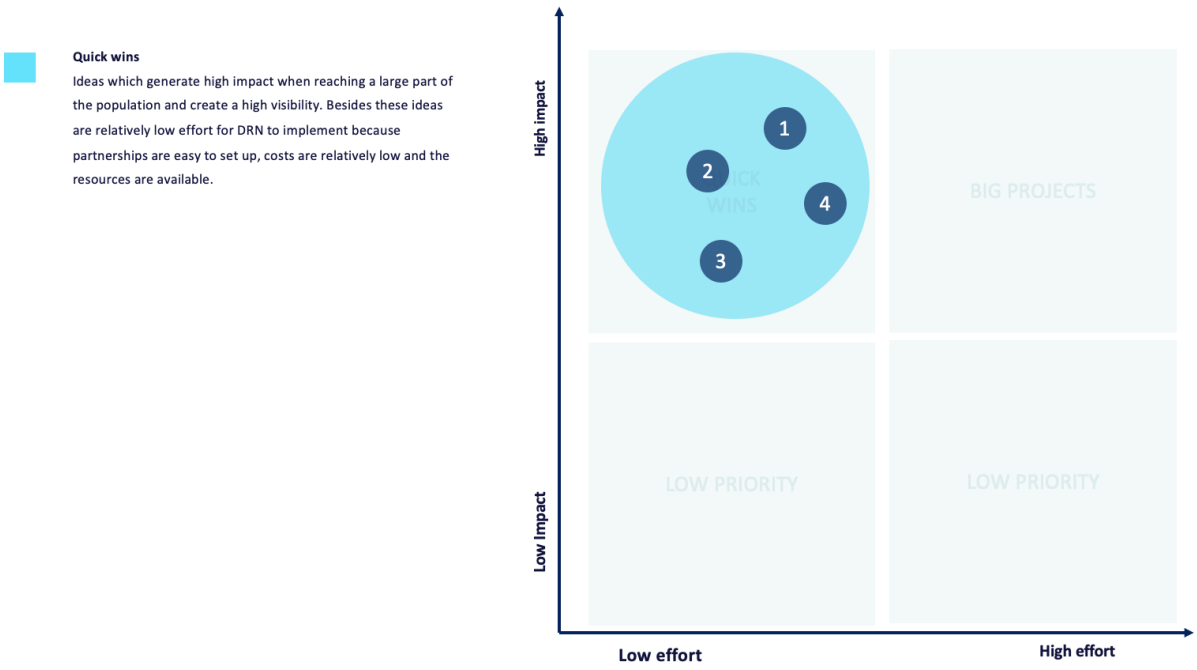



*Figure 15: Selected ideas - quick wins for DRN*

### 6.3.4 LIMITATIONS

The method I used to develop ideas came along with certain limitations which might have influenced the selected ideas. In this section, I discuss the most important limitations.

First of all, the participants who joined the brainstorm session represent a small sample size of the total population which might have led to limited perspectives. To minimize this I asked a wide range of ages and different genders. However, other demographic factors were not included in this research and should be investigated further.

Secondly, my selection of ideas could have involved subjectivity. Since I have done a thorough analysis of DRN and their strengths, I could have a good estimation of the ideas with much effort and a large impact. However, different researchers could have arranged the ideas (slightly) differently on impact and effort.

Third, participants were gathered through my own network. It may therefore be that the participants are not representative for the total population, potentially resulting in a lack of diverse perspective. This could limit the variety of ideas generated.

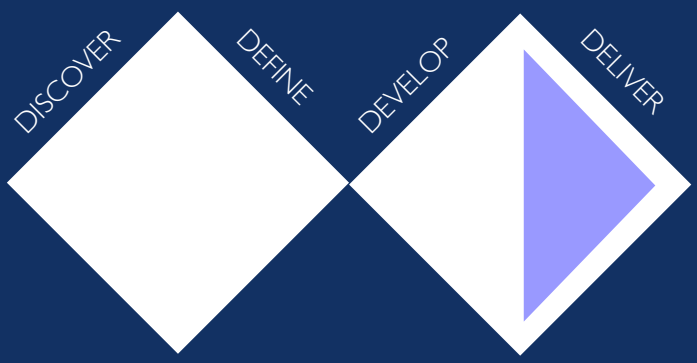
Fourth, during the brainstorm sessions there was a limited time to explore ideas which might not allow for in-depth exploration and refinement of ideas. With the setup of introduction document, I aimed to overcome this by encouraging the participants to think outside the box and use their creativity within the limited of the project.

Fifth, there was no time left to validate the ideas generated with DRN of Accenture. This is crucial to turn them into actionable ideas. Therefore, I further elaborate on this in the recommendations.

# DELIVER DRN

## 07 IMPLEMENTATION ROADMAP
## 09 DECISION TREE

With three challenges defined for DRN and Accenture, it is time to explore and develop meaningful solutions. In chapter 5, I create a strategy on North Sea collaboration by setting up a decision tree. I evaluate which country is the most suitable to start sharing knowledge with on nature enhancement. In chapter 6, I continue with the development of ideas for the selected country to initiate sharing knowledge on nature enhancement. This is done through two forms of ideation sessions, one session individually and different sessions with participants. For Accenture, I continue the process in chapter 8.



# 07 IMPLEMENTATION ROADMAP

To demonstrate how DRN executes the strategy presented in chapter 5 including the developed ideas in chapter 6, I design a roadmap. According to Simonse (2018), a design roadmap is a visual representation of design innovation elements plotted on a timeline. The roadmap shows how efforts are aligned to the desired future state. As stated in chapter 3, the desired future state in this project is: Enhancing biodiversity in OFWs in the North Sea by 2030.

## 7.1 THREE HORIZONS

To reach the desired future state, I divided DRNs strategy into three different horizons. In each horizon clusters of factors discovered in chapter 3 play an important role. For the first horizon, I developed several ideas. For the second and third, I give just one example due to the limited time span of the project.

**In the first horizon**, DRN focuses on sharing knowledge on nature enhancement with Germany. This phase starts in 2024. The ideas selected to share knowledge in Germany by engaging locally are illustrated in the roadmap. Further elaboration on the implementation of these ideas is done in section 7.1.2. The ecosystem stakeholders and external parties involved to implement these ideas are mentioned at the bottom.

**In the second horizon,** DRN focuses on sharing and gaining knowledge with the countries UK, Denmark and Belgium. Two clusters of factors play a role in this horizon, increase of transparency and nature positivity puzzle. DRN has the opportunity to explore and define the best possible ways of nature enhancement. An example of a useful idea within this horizon is the Accenture toolbox. The toolbox offers the opportunity to conveniently share and gain knowledge between countries in a transparent way. Relevant ecosystem stakeholders in each of the concerned countries to collaborate with are illustrated at the bottom.

**In the third horizon,** DRN focuses on scaling knowledge with France, Norway and eventually other countries. In this horizon, DRN gains new knowledge by exploring new marine habitats and different types of offshore constructions like floating offshore wind farms. Public figures and promoting biodiversity offer the opportunity to spread the message to scale knowledge around nature enhancement. This phase starts around 2028 since there is currently limited offshore wind in the concerned countries. Relevant stakeholders in this period are to be identified later depending on the circumstances around that time.

For each horizon, I assigned responsibility to different employees of DRN based on their expertise and previous work with concerned countries. The names are kept anonymous due to privacy reasons.

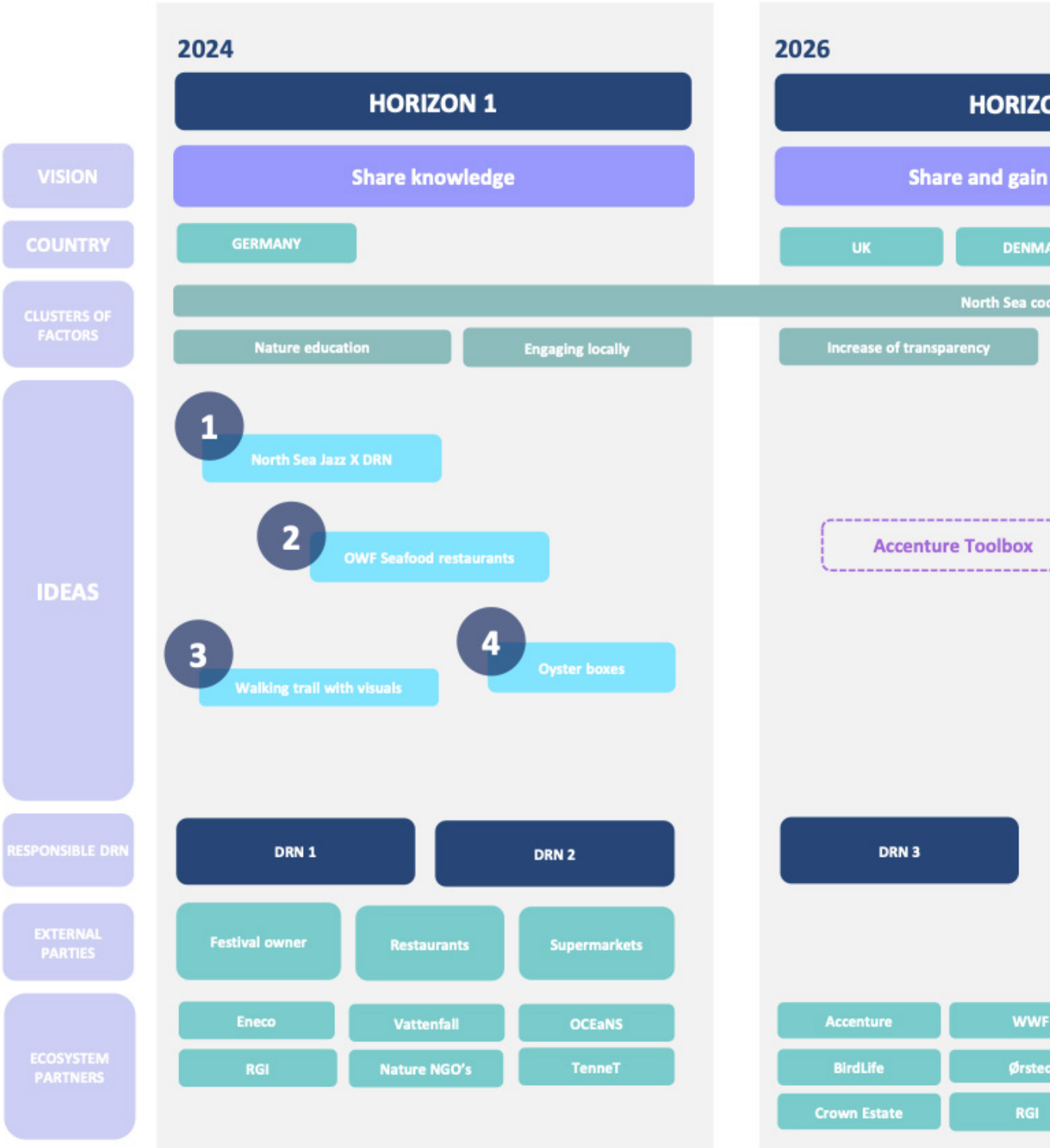
## 7.2 ROADMAP

In figure 15, I present the implementation roadmap for DRN towards a future of enhancing biodiversity in the North Sea showing the opportunities of international collaboration with North Sea countries.

## 7.3 IDEAS FOR HORIZON ONE

To support DRN in the implementation of the ideas in horizon 1, I present four one-pagers with an explanation on each idea. The one pagers can be foud in appendix 25. On page 80 and 81, I present the ideas with a short storytelling to get an understanding of the idea and the knowledge sharing on nature enhancement.

# Roadmap


2024
2026
HORIZON 1
HORIZ
VISION
Share knowledge
Share and gain
COUNTRY
GERMANY
UK
DENMA
CLUSTERS OF FACTORS
North Sea co
Nature education
Engaging locally
Increase of transparency
IDEAS
1
North Sea Jazz X DRN
2
OWF Seafood restaurants
Accenture Toolbox
3
Walking trail with visuals
4
Oyster boxes
RESPONSIBLE DRN
DRN 1
DRN 2
DRN 3
EXTERNAL PARTIES
Festival owner
Restaurants
Supermarkets
ECOSYSTEM PARTNERS
Eneco
Vattenfall
OCEaNS
Accenture
WWF
RGI
Nature NGO's
TenneT
BirdLife
Ørsted
Crown Estate
RGI

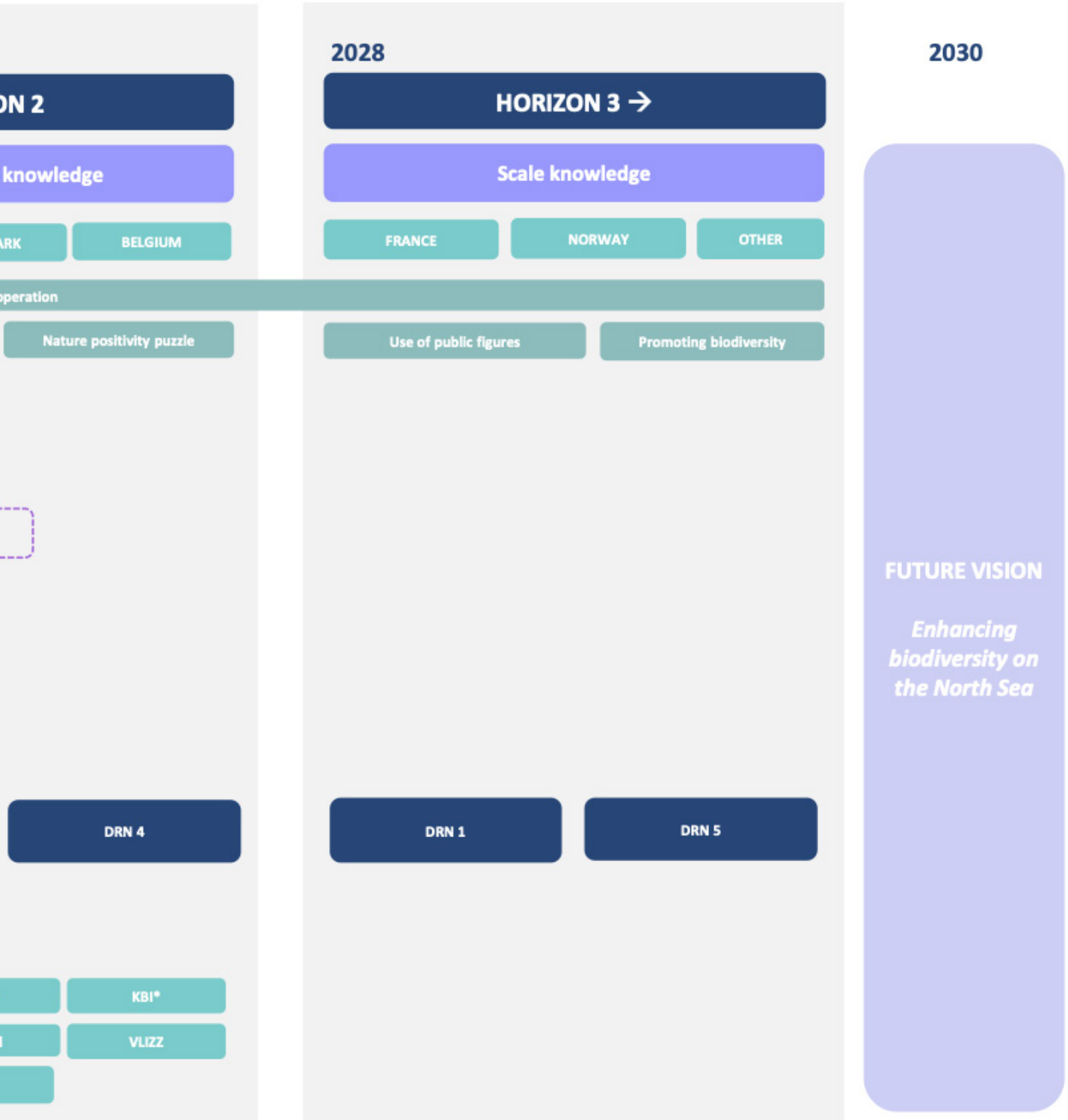



*Figure 15: Roadmap for DRN towards the desired future vision DRN*

## *Sharing knowledge idea 1*
## Nort Sea Jazz festival x DRN


*Bill (56) goes with his daughter, Elly (23), to the North Sea Jazz festival in Rotterdam. At the festival they enjoy all great artists at the main stage. Bill's eye catches the huge images next to the stage. He says to Elly – "Look Elly – check out the sea life in the North Sea." Elly wonders what the windmills are doing in the picture. She looks up De Rijke Noordzee website and finds out about nature enhancement in offshore windfarms. Elly says to Bill: "wauw dad did you know they enhance sea life in offshore wind farms to increase biodiversity?"*

## *Sharing knowledge idea 2*
## Menu cards in OWF seafood restaurants


*Jenny (33) and Bruce (32) are going to a seafood restaurant to have dinner. The waitress brings menu cards to their table. When discussing their choice for food, Bruce notices the oysters from from the North Sea and says: "Hey Jenny listen, there are oyster from offshore windpark Blauwwind." Jenny wonders what that means and asks the waitress. The waitress explains to them: "The oysters placed in offshore windfarm Blauwwind are served in our restaurant, in this way we support nature enhancement by De Rijke Noordzee and offer a delicious meal at the same time."*

## *Sharing knowledge idea 3*
## Walking trail with visuals


*Eva (30) and Barbara (65) want to do a walking route along the coast during their holiday. Arriving at the seavillage they notice beautiful pictures on the promenade. They walk closer and see al kind of pictures with information about nature in the North Sea. They decide to follow the walking trail to the next seavillage."*

## *Sharing knowledge idea 4*
## Oyster boxes in local supermarkets

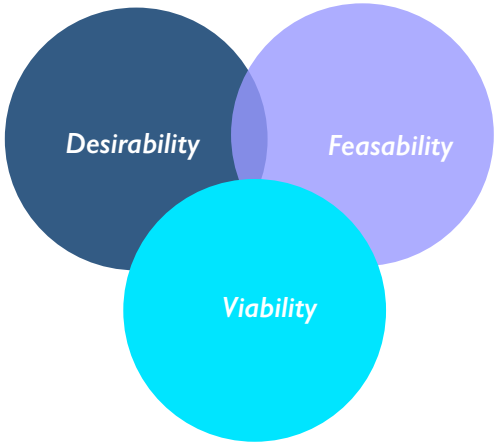

*Fred (40) and Liane (39) attend a dinner with friends. They want to bring oysters as starter. Arriving at the local fish market, they see all kinnds of oyster boxes. Fred says: "Hey liane take a look – these oysters are from offshorewind farm blauwwind in the North Sea" Liane says: "That s interesting I did not know oysters could grow in an offshore windfarm."*

# 08 THE DECISION TREE

Besides the presented roadmap, the decision tree is a useful tool for DRN to explore the possibilities for future international collaboration. The decision tree can guide, inspire and support DRN in finding suitable partners for international collaboration. To test the desirability, feasibility and viability of the decision tree, I validate the design with DRN.

## 8.1 VALIDATION

Due to limited availability of DRN, I validated the decision tree with one employee of DRN and one employee of Accenture (the client lead) in two separate online sessions of 30 minutes. In the meeting, I showed the decision tree and discussed the opportunities guided by the three elements of innovation: *desirability, feasibility and viability.*




### 8.1.1 RESPONSE TOWARDS TREE

***Desirability***

The decision tree is desirable for DRN as it aligns with their strategic goal to explore international collaboration to enhance biodiversity on the North Sea (DRN, 2023). The decision tree enhances starting international collaboration with other countries. Moreover, DRN1 mentions in the interview: *"We would love to use the decision tree to inform our partners better."*

***Feasibility***

The decision tree can be easily integrated in DRNs workflow by making it directly usable as a poster at the office. According to DRN1, *"the poster will trigger the conversation between employees of DRN to explore international collaboration."* Resources to provide a poster for DRN are available, and thus is a poster with the decision tree feasible.

***Viability***

According to DRN 1, *"the decision tree gives the opportunity to show funding parties our plan of approach on international collaboration, it is therefore more likely they will give funding."* This shows how the decision tree improves DRN's pitches for funding, and thus the organization's financial stability. Besides, "*the information behind the decision tree, about the North Sea countries, can help us to argue why we are willing to cooperate in the concerned country. It increases the likelihood of setting up*

*a new collaboration."* This shows possibilities for DRN's growth caused by the decision tree.

### 8.1.2 RECOMMENDATIONS FOR IMPROVEMENT

The response towards the decision tree was generally positive. However, we also discussed improvements regarding the feasibility, desirability and viability of the design. Not all aspects can be mentioned in this report, thus I discuss the most important ones below.

***Desirability***

To increase desirability, the decision tree should be scalable with DRN's growth and evolving needs for international collaboration. This goes beyond the North Sea countries. This involves adding extra criteria to the decision tree such as costs, corruption index and accessibility of the country.

***Feasibility***

It is important to figure out if all information is internally available at DRN to assess the criteria and constraints. For the North Sea countries a great deal of information can be found in this report to assess them. However for other countries, I would advise hiring an external consultancy to acquire this information.

***Viability***

I have made sure that the decision tree is sustainable in the longer term, at least until 2030. However, the energy transition is evolving at a fast pace so DRN should consider how the tree can adapt to changing circumstances and emerging trends in the field of offshore wind and nature enhancement.

These improvements will be essential for a successful adoption within DRN.

## 8.2 CONCLUSION DRN

My aim in this research to explore the opportunities for DRN to collaborate with North Sea countries on nature enhancement in OWFs has revealed a promising strategy including valuable opportunities.

Through an internal analysis of DRN, I identified two critical needs: find ways to share knowledge on nature enhancement and create a strategy regarding international collaboration.

My exploration on future contexts, using the ViP method, for Enhancing biodiversity in the North Sea by 2030 has shown interesting opportunities for DRN. Two promising future contexts, North Sea cooperation plays a significant role in educating people and nature education starts by engaging locally, aligned perfectly with DRN's needs, resulting in two clear directions for further research: (1) Create a strategy on North Sea collaboration including a recommended country to start sharing knowledge with on nature enhancement and (2) Develop ideas for DRN to share knowledge on nature enhancement projects in OWFs by engaging locally.

The resulting strategy is illustrated in an implementation roadmap. The roadmap contains three horizons: (1) DRN collaborates with Germany by sharing knowledge on Nature Enhancement from 2024 on. (2) DRN collaborates with Denmark, UK and Belgium by sharing and gaining knowledge on nature enhancement. (3) DRN scales knowledge sharing on nature enhancement by collaborating with France and Norway close to 2030. Each horizon contains ideas, clusters of factors that play an important role, relevant stakeholders and defined responsibilities guiding DRN toward their ultimate goal of Enhancing biodiversity in OFWs in the North Sea by 2030. For horizon one, I developed ideas to share knowledge on nature enhancement by engaging locally and explained how to implement them in Germany. However, I find it critical to validate the implementation roadmap with DRN and stakeholders. This will assess the desirability, feasibility and viability of the ideas, that ensures DRN's vision becomes reality.

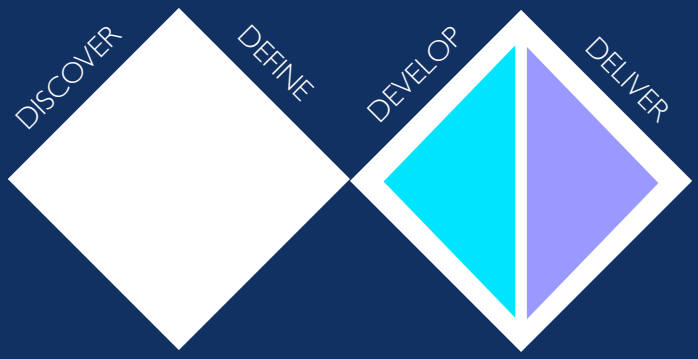
With the support of a personalized decision tree for DRN, I assessed the North Sea countries to create this strategy for North Sea collaboration. Through a validation session with DRN, I identified how the decision tree offers value to the organization in the longer term. Not only is the decision tree a structured framework to assess potential collaboration with the North Sea countries, it also supports acquiring new funding and informing new and current stakeholders. Moreover, the decision tree can be expanded to international collaboration beyond the North Sea countries. However, further research into e.g. adding extra criteria is needed to make the tree applicable for all countries over the world.

In conclusion, I believe this research serves as a powerful guide for DRN towards North Sea collaboration, including many opportunities and informed decision-making to achieve their mission on enhancing biodiversity in OWFs by 2030.

# DEVELOP & DELIVER ACCENTURE

## 09 VIP GUIDE ACCENTURE

With the design soluations presented for DRN, I develop a meaningful solutions for Accenture in this chapter. Consequently, final designs for Accennture are delivered.



# 09 ViP GUIDE ACCENTURE

In this chapter I discuss the value for a contribution for a consultancy firm like Accenture. As formulated in challenge 3 this is done by answering the following question: *Why and how can the VIP method be used by Accenture?* I start this chapter with an explanation of the approach to tackle this question, followed by the results and a recommendation for Accenture.

## 9.1 METHOD

To discover how the ViP method can be valuable to Accenture, I organized a session with the design team. A session was planned on August 24th for one hour and 14 people were present. The session is recorded on Teams to enhance evaluation of the answers. I prepared a presentation to structure the session which can be found in appendix 16. Summarized, the session consists of two parts:

1. **Introduction of the ViP method**
   a) When is the ViP method method used and how does it work
   b) Example of using the ViP method: my approach in creating future contexts for DRN

2. **Discussion**
   a) First, I encourage a discussion to discover opinions and ideas about when the use of the ViP method is valuable and how it can be adjusted to be useful for the design teams.
   b) Second, I identify how many of my colleagues would like to use the ViP method in a poll.

After the session, I summarize the answers and identify the key insights.

## 9.2 KEY INSIGHTS

The insights from the discussion on opinions and ideas for the ViP method are summarized in appendix in 17. From this discussion, I identified the following key insights:

- *14/14 participants reacted positively in applying the ViP method during their work*
- *ViP method is perceived differently from current methods by being richer in collection in factors, inspirational and focussing on the future context instead of focussing on current problems*
- *The ViP method might be useful during design sprints or as inspirational tool*
- *The ViP method should be made adaptable over time; clients needs can change or situations can change in the world*
- *A manual of the ViP method would be useful at the office in the form of a card game, toolkit or Miro board*

## 8.3 DESIGN REQUIREMENTS

To develop a guide to make the ViP method useful for Accenture, I set up four requirements based on the key insights and the discussion during the session.

1. **Accessible**: The guide focuses only on creating future contexts and not on

product development. Therefore, the guide should be easy to access for the service and business design capabilities because this aligns with their work. The product design and creative tech do usually not work with future contexts thus this method is less relevant for them. Another important part of accessibility is that the guide should be available in the office and usable at any time.

2. **Self-explanatory:** The guide should be ready to use without any additional explanation necessary. Consultants have limited time in their daily work life so the manual should speak for itself.

3. **Inspirational & professional:** The manual should be inspirational and professional at the same time. Since consultants would like to use the method during a design sprint or creative session with the client, the manual needs an inspiring lay-out. Using colors, images and little text, will enhance the consultants to use the manual. Besides, since these sprints last mostly between 1-2 hours the steps should have a time indication.

4. **Adaptability**: The manual should be adaptable over time and context. Since the client's wishes and the world around us changes often, the manual should not be fixed to a certain time nor context. Therefore, I add an extra step in the methodology to rank future contexts on fit.

## 9.4 FIRST DRAFT VIP GUIDE

The first draft of the guide is designed. In the next section, I validate this guide with fellow design consultants.

## 9.5 VALIDATION

### 9.5.1 METHOD

To validate the desirability, feasibility and viability of the guide I organized user tests with my fellow design consultants. To test the four design requirements above, I used the following set-up.

- Four internal design consultants reviewed and validated the guide. The user test involved two consultants from each capability group (service and business design) to ensure the accessibility for both groups. These consultants have already participated in the previous workshop I organized about the ViP methodology.
- The user tests were held in an online or office meeting for 15 minutes where I presented them the guide to craft the future contexts in the form of cards.
- During the experiment, no additional explanations were provided, and consultants were instructed to provide feedback specifically on any parts of the guide they found unclear or did not understand to assess the self-explanatory nature of the cards.
- To evaluate the inspirational and

professional aspects of the design, I asked the design consultants for their feedback on these elements.
- Given that adaptability had already been addressed in the workshop regarding how it can be incorporated into the manual, no additional questions were posed concerning this criteria.
- I noted down all feedback of design consultants during the experiment in a Word document.

### 9.5.2 RESPONSE TO DESIGN

The four user tests generated feedback from the design consultants. An overview of the feedback can be found in appendix 18. In this section, I discuss the most important insights which show the desirability, feasibility and viability of the guide.

The following quotes reveal the desirability and feasibility of the guide as they cover the design requirements stated in section 9.3. The consultants from both design departments respond generally positive regarding the guide:

Consultant 2 - *"This guide is far more attractive than a frightening big document that you have to read before a design session." [aligns with requirement 3 and 1]*

Consultant 3 - *"The guide looks very pretty with the images and fits with the Accenture colors and designs." [aligns with requirement 3]*

Consultant 1 - *"When this guide is available as small cards in the office, I will easily use it." [aligns with requirement 1]*

Consultant 4 - *"Since the guide looks professional I think it is very useful for design sprints with clients." and "The guide is easy and quick to read which I like during my busy days." [aligns with requirement requirement 3, 2 and 1]*

All four consultants understood the guide without explanation and could give examples for each step. This showed the self-explanatory ability of the guide as mentioned in requirement 2.

In the workshop about the ViP methodology, the viability of the methodology was discussed. The ViP methodology is a unique methodology compared to services other consultancies offer. According to one of the consultants in the workshop: "The ViP methodology can attract new clients or offer new value for current clients in the long term." Another consultant mentions the following: "The guide is richer in collecting factors than the methods we currently use." These insights make the guide financially sustainable in the long term, and thus viable for Accenture.

The user test also unlocked opportunities for improvement of the guide to increase feasibility, desirability and viability. Improvements regarding design and language which can be implemented within the limited

amount of time left, I adjust directly. These are highlighted in blue in appendix 18.

However, some large improvements which I can not manage within the given time for this graduation project are discussed below.

- It is necessary to get the consultants acquainted with the methodology in order to make it successful. One of the consultants mentions *they would value more elaboration on the example given in order to commit to this method.* I recommend doing internal training within Accenture with an external ViP expert like Matthijs van Dijk who can offer the design consultants practice led by example.

- One of the consultants mentions: *"The current time set for each step seems limited to me."* To estimate the time for each step I recommend doing a pilot session to find out what the preferred times are to host a design sprint with this guide."

- Another consultant mentions they need more guidance in using tools: *"It would help me if I have a pre-prepared Miro board or canvas where I can note down all the answers on the steps."* I recommend developing a Miroboard after the first pilot session to make sure you know what is preferred. This Miroboard can be improved after several design sprints with the future context guide.

These iterative improvements will be essential for a successful adoption within the organization and I suggest that Accenture implement them as soon as possible.

## 9.6 FINAL DESIGN

Based on the validation sessions with four internal consultants, I made improvements to the guide. The final guide consists of 8 cards with 5 steps to create future contexts. Below, I present the guide which I deliver to the business and service design team at Accenture Song.

# 5 STEPS TO CREATE FUTURE CONTEXTS

a guide inspired by

Vision in Product Design (ViP)

created by Laura Stassen
graduation project SPD TU Delft

**Accenture** Song

Hey designer!

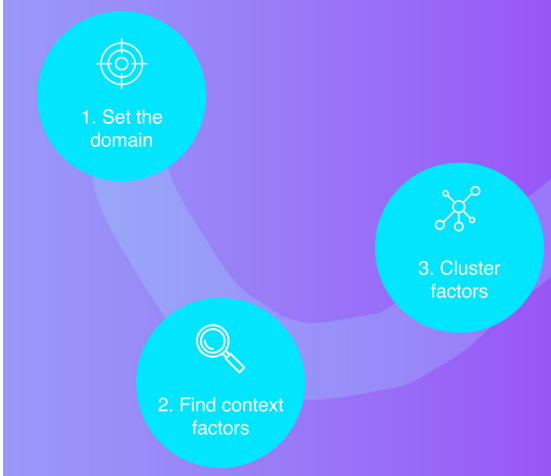
Amazing that you are here to explore the ViP methodology.

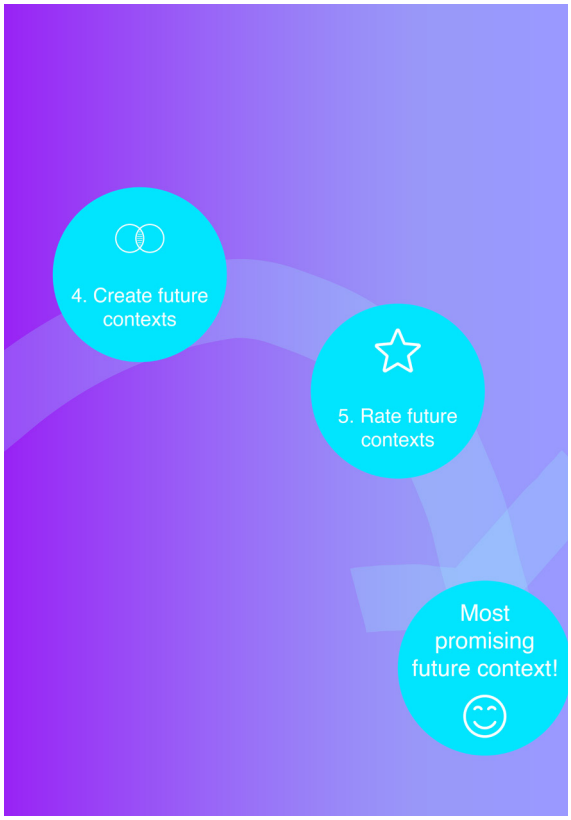
With this guide you can create future contexts together with colleagues or clients. Let me take you through the 5 steps in 2x 30 minutes.

Examples to help you are given at the bottom of each card this example is summarized on the last card.

Have fun!

## STEPS TO FUTURE CONTEXT



#1

## SET A DOMAIN

10 min

**Accenture** Song

Creating the future context starts with setting a domain to design in. This domain can be anything one aims to achieve. A domain is:

- An area where you aim to make a contribution
- Interesting and relevant for your organization
- Aligns with your or client's mission

Write down domain on a miro- or white board

EXAMPLE

*"Enhancing biodiversity on the North Sea in 2030"*

#2

## COLLECT FACTORS


20 min

**Accenture** Song

Building the future context continues with the collection of factors witihin your domain. You can use newspapers, books, scientific articles or your own observations to find factors.

- Write each factor you find down on a sticky note, gather between 20-100 factors
- Select the factors fitting your domain. Eliminate factors which do not contribute.

Take a well deserved coffee break when your done :)

EXAMPLE

*Societal awareness for nature grows.*
*Public people speak up about nature.*

# #3 CLUSTER FACTORS

10 min

**Accenture** Song

Cluster selected factors:

1. Pick a factor and briefly discuss what the factor entails
2. Place the factor in a cluster and assign a name to the cluster and write this down
3. Pick next factor and discuss this factor
4. Determine if this factor fits with existing cluster or create a new cluster
5. Repeat this process until all factors have been assigned*

*left over factors can be excluded from research

EXAMPLE

*1) Nature education is important.*
*2) Public figures create awareness for nature.*

# #4 CREATE CONTEXTS

15 min

**Accenture** Song

Create future contexts by multiplying two clusters of factors:

CLUSTER OF FACTOR 1
x
CLUSTER OF FACTOR 2
=
FUTURE CONTEXT

Tip: create between 6-12 future context by using a matrix

EXAMPLE

*A) Public figures are used to educate on nature related topics.*

# 5

## RATE CONTEXTS

5 min

**Accenture** Song

- Discuss which future contexts are most promising for the company*

1. viability
2. feasibility
3. desirability

- Place stars from 1-5 on the three aspects.
- Select promising future contexts with the most stars

*this assesment can be done again when the needs or world's context changes

EXAMPLE

*Future context A is most promising with 6 stars.*

*GREAT JOB! YOU HAVE CREATED A VISION FOR THE FUTURE :)*

*Now what can you do with this future context?*

*- Use as inspiration to design*
*- Prepare client for future*
*- Use to write client proposal*
*- Inspire your creativity*

*If you want to explore further - take a look at the ViP book.*

EXAMPLE

Domein: *"Enhancing biodiversity on the North Sea in 2030"*

*Factor 1 "Societal aware-ness for nature grows"*

*Factor 2 "Public people speak up about nature"*

*Factor 3....*

*Cluster of factors 2 "Public figures creating awareness for nature"* X *Cluster of factors 1 "Nature education is important."*

*Future context A "Public figures are used to educate on nature related topics."*

## 9.7 LIMITATIONS

During the brainstorm session and user-tests I organized, certain limitations came along which might have influenced their results. In this section, I discuss the most important ones.

A first limitation is that not everyone from the design teams was present in the brainstorm session. This means not everyone could share their opinion on the methodology and perspectives are narrow. Therefore, I aimed to involve design consultants from multiple design teams in the validation session to ensure enough perspectives were covered. My recommendation is for Accenture to organize another validation session to gather a wider range of opinions.
The second limitation was that there was no time for a ViP exercise to get the design consultants acquainted with the method. This can result in design consultants choosing another method over the ViP method since they are more familiar with this. Therefore, as mentioned earlier, I recommended Accenture to do an internal training on how to use the ViP guide effectively by involving an ViP expert to empower design consultants in using the ViP methodology in their work.
For the user tests there was first of all a very limited amount of time to do the user-tests so I only could test it with people available. I involved two design consultants of each design team to make sure both perspectives are covered. To improve the design, Accenture could do more user tests with different design consultants, increasing the likelihood of the use of the methodology.

A second limitation of the user tests was my presence during the user tests. This may have influenced the answers because for example they could have tried to please me as a researcher or did not want to give their honest opinion. I recommend Accenture to do external independent user-tests to ensure unbiased feedback and the credibility of the results.

## 9.8 CONCLUSION

Besides my goal for DRN, my aim in this thesis was to explore the contribution for Accenture. I have done this by researching the potential value of implementing the ViP (Vision in Product Design) method within a consultancy firm like Accenture.

The exploration started by discussing the ViP methodology, which I did by organizing a session with the design team and summarized the key insights. These insights revealed the positive response towards the ViP method among design consultants with its perceived advantage comparing it to other methods including its richness in factors, inspiration-driven nature, and focus on future contexts.

To make the ViP method useful within Accenture capabilities service and business design, I established four design requirements based on the discussion: accessibility, self-explanatory, inspirational and professional presentation, and adaptability. These requirements served as the basis for creating a guide to design future context.

Through user tests with my fellow design consultants I demonstrated the desirability, feasibility, and viability of the guide. Design consultants found the guide attractive, user-friendly, and aligned with Accenture's professional standards. They understood the guide without additional explanation and considered it a valuable tool for design sprints with clients. Moreover, the ViP method's uniqueness was seen as a potential differentiator that could attract new clients or provide additional value to existing ones.

However, I identified opportunities for improvement based on the user-tests. There is a need for internal training to familiarize consultants with the methodology, refining the time for each step in, and developing tools like a Miro board or pre-prepared Whiteboard to facilitate the process.

The final design of the guide consists of eight cards with five steps to create future contexts, tailored to the specific needs of the business and service design teams at Accenture Song.

In conclusion, based on my research the ViP method presents an exciting opportunity for Accenture to enhance its design capabilities and offer a unique approach to clients. The guide, as refined and validated through my research, is a valuable tool for design consultants. However, training with a ViP expert and iterative improvements will be essential for a successful adoption within the organization. With these considerations in mind, Accenture can use the ViP method to drive innovation and create future contexts that align with clients and their needs.

# RECOMMENDATIONS

# 10 RECOMMENDATIONS

My graduation project is completed within a limited amount of time under certain circumstances. Throughout the report, I discussed limitations that have an influence on the outcomes of this project and suggested specific recommendations for further research. In this section, I follow up with a few important overarching recommendations for DRN and Accenture.

## 10.1 DE RIJKE NOORDZEE

### *Validation of ideas*

As mentioned, the first ideas to share knowledge on nature enhancement were generated in brainstorms with Dutch participants. To make sure the ideas attract other populations of North Sea countries, further validation is needed. I recommend DRN to organize this validation with the support of RGI, since they have useful contacts in Europe. Additionally, interviews with ecosystem stakeholders (external industry partners) during this thesis showed that many stakeholders are willing to cooperate with DRN. My advice is to contact these stakeholders and ask them for support in implementing the ideas in the concerned countries by emphasizing the value it can bring them in return.

### *Explore other international collaborations*

During the interviews with external stakeholders and DRN themselves, I got a lot of positive feedback regarding international collaboration. From my experience, many organizations are willing to cooperate with DRN and need information from them on nature enhancement. Therefore, I believe the decision tree I designed for DRN provides a excellent structure to inform partners and guide collaboration. Moreover, the tree can be expanded to assess other international countries. As mentioned, further research is needed if extra factors need to be involved for these assessments. For example, corruption or costs can be relevant factors to investigate outside beyond the North Sea countries. I recommend hiring an external consultancy or another graduate student to figure this out by building further on the presented tree in this report.

### *Sharing knowledge on nature enhancement*

During this research, I did not have time to identify which knowledge is precisely going to be shared in the developed ideas by DRN with the North Sea countries. However, DRN has a unique stakeholder network which is recognized by many external parties. This network gives them access to a great deal of information and the potential to share their knowledge on nature enhancement. Therefore, I recommend DRN to proactively identify the specific knowledge they want to share within this domain. By clearly defining which knowledge DRN wants to share on nature enhancement, they can maximize the utility of its unique position and make a more significant impact in the North Sea countries.

### *Investigate in costs*

As my research did not investigate the costs

of the ideas developed to share knowledge by DRN, I recommend looking into this aspect. It is crucial to create an overview of the costs in terms of people, time and resources. This assessment provides DRN with valuable insights into the feasibility and sustainability of the ideas which enables the organization to make informed decisions. For this aspect, I recommend DRN to consider an external party since they have limited availability themselves.

## 10.2 ACCENTURE

### *Generate new business*

Based on my research, I recommend two possible ways for Accenture to generate new business: offering customized solutions and international market expansion. First, as mentioned at several points in this research, DRN can use a consultancy firm like Accenture for many challenges. I recommend Accenture to develop customized solutions for the challenges mentioned in this research. In this way Accenture can position itself as a valuable partner for DRN. Second, Accenture could use the international scope of this report to generate business in the other North Sea countries. Exploring these opportunities in different countries can lead to business growth.

### *Explore the use of the ViP methodology*

As presented in this research, the ViP methodology can offer unique value to Accenture Song. As mentioned, I recommend doing multiple pilot sessions with clients to generate iterative improvements. When the ViP methodology is tailored to Accenture's specific needs, I recommend using it to offer new value propositions to attract new clients.

### *Working with graduation students*

This graduation report shows a unique example of working with a client of Accenture instead of only for Accenture themselves. I recommend Accenture to evaluate this approach (with me) to offer new opportunities for graduation students in the future. In the project reflection, I elaborate more on my experience regarding this approach. A recommendation from my perspective, based on my experience that I believe working for two stakeholders is too complex for a graduate, I advise choosing either of the two options: doing an internal project at Accenture or doing an external project for a client of Accenture. For the second option, it is very important to set clear guidelines for the project and make agreements on supervision and client contact.

By implementing these recommendations, I believe Accenture Song can create new business opportunities using the ViP methodology and DRN's report. Moreover, they can create valuable opportunities for graduation students and thus attract new talent.

# 11 REFLECTION

In this section, I reflect on the project and on my personal learnings.

## 11.1 REFLECTION ON PROJECT

Reflecting on my project, the common thread is the complexity of working for multiple stakeholders. I chose to work for a client of Accenture: De Rijke Noordzee. This made my graduation project way more complex than just working for Accenture and the TU Delft alone. It was a unique opportunity which I do not regret, since the project perfectly fitted my own interests and was a real consultancy client experience which both aligned with my learning objectives. DRN is very happy with the end result and that is for sure what counts as a good consultant.

However, unlocking value for two stakeholders at the same time was sometimes too much within one graduation project. The demand from both was high, so I should have chosen to focus on one stakeholder instead of two at the same time.

Moreover, working for the client as a graduation intern brought difficulties along such as limited time with the client since I was not allowed to be client facing. This resulted in limited time to get information from the client and validate results. Also, my supervisors from Accenture could not support me fully since they were not in contact with the client. Therefore, I sometimes felt alone on my own tiny island. I recommend graduation students to do a project for a client when the supervisors of your project are the same as the client lead.

Besides, I found it very challenging to be fully engaged in a team while I had my own graduation project for the TU Delft. I found it difficult to blend with my Accenture colleagues, and ask them for help since the project is conducted alone. I should have involved my colleagues earlier. In this way I could have used their smart minds and open minded ideas. Once I asked them for help, I made progress and the project went more smoothly.

## 11.2 PERSONAL REFLECTION

During my graduation project, I got to know myself even better through seeing my strengths and encountered my areas for improvement. This is ofcourse a fantastic learning experience with a steep learning curve, but at times, a very tough journey and not always enjoyable. When I look back at my learning objectives, I realize that they represent only a small part of what I have learned in the past six months. It has shown me that there is still a lot to learn (and that it's a good thing! :))

Regarding my learning objectives, I had the opportunity to practice writing English a lot. Additionally, my chair, Sicco, taught me a great deal about academic writing, and I've made significant progress in this area.

Even my linguistic parents noticed that I've become much better in English writing ;). I can say with great confidence this learning objective is met.

The second learning objective, fathom theories and methods has also gone well. I have practiced this with for example the use of the ViP methodology where I talked to both experts and read the book so many times that I know it by heart.

For my third learning objective, present in a confident way, I am not satisfied yet but I have made steps. I have to admit it was quite challenging to present in front of academic experts, the client and Accenture consultants, also considering the complexity of my project. I believe I should allow myself more mistakes during these presentations but still be confident in the presenting style. My mentor, Gert-Hans challenged me to practice this one more time during my final presentation, so I will make sure this is going to be a hell of a presentation. Besides this presentation, I believe there is room for growth in my future career. However, I also learned it is important to stay close to myself and be confident in my own way.

My last learning objective, being assertive in managing the project, has two sides. On one hand, I believe I demonstrated my ability to maintain structure and initiative in my project, meetings, in my planning and worked independently. On the other hand, I was often easily influenced by feedback and aimed to please everyone, which sometimes made it difficult to stick to my own vision. I need to learn to set boundaries to stick to my own vision.

Furthermore, I want to acknowledge that managing a project individually is incredibly challenging and I missed having the project partners with whom I could make decisions together. Since I was young, I have struggled with decision -making and this became again very apparent in this project. I can't delegate decisions to others, not even about the use of a certain methodology. Therefore, I challenged myself during this project to learn to trust my own guts and follow my own path. In my further career and life, I want to keep on challenging myself with this and develop my personal leadership skills.

All in all, I am very proud of the way I finished this graduation project which is mainly due to my determination-, positivity and empathy. My family and friends reminded me constantly of these valuable qualities which I am thankful for.

Thanks for reading,

Laura Stassen

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MASTER THESIS

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