

# Vejle

How to implement co-creation in  
multilayer safety in Vejle?

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Figure 1: Aerial picture of Vejle in Denmark

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## 1) Introduction

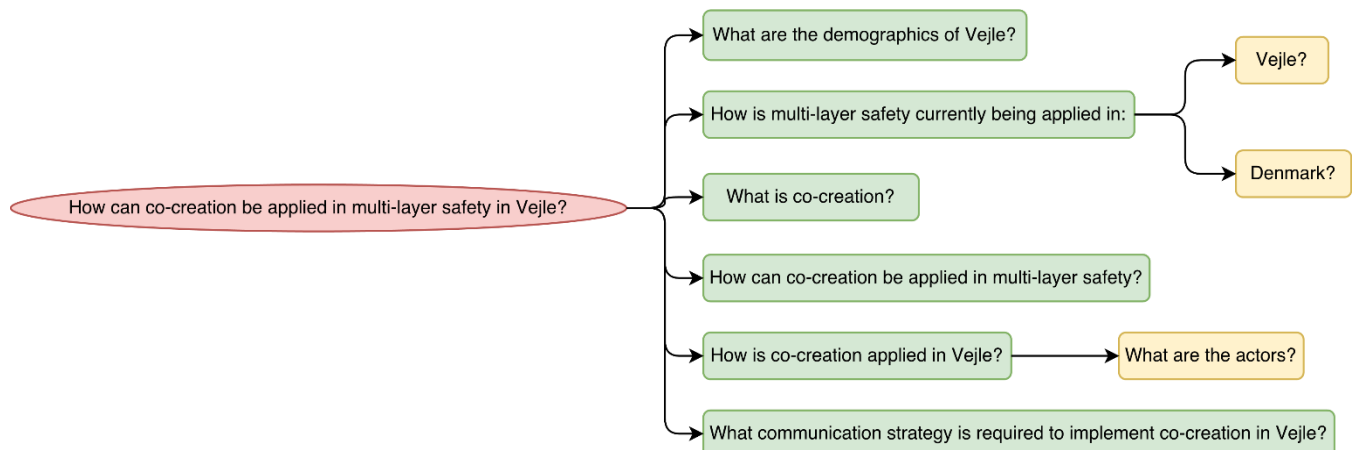
Climate change has its affects all over the world. Because Vejle is in a fjord and has no large flood protection structures, it is especially prone to sea level rise. Additionally, Vejle doesn't have the financial resources to implement expensive solutions, so is looking for cheaper alternatives. The result of this research can contribute to help Vejle achieve that goal.

The purpose of the research is to give the HZ Delta Academy and the FRAMES project about Multilayer Safety a recommendation about how they can let communities contribute in applying multi-layer safety in Vejle by implementing co-creation. To achieve this the research will focus on answering the following main research question:

How can co-creation be applied in multi-layer safety in Vejle?

The objective is to do an applied research that focusses on collecting qualitative data to give useable recommendations to the clients. There are many factors that influence the outcome of the research question. Methods inhabitants of Vejle use to interact with each other and the government. Reasons why the inhabitants use that way of communication and how they much they know about how climate change affects their city. Information regarding these subjects is mainly qualitative, which therefor will be the type of information this research will focus on.

To answer the main question, a mind map was developed by the involved researchers to figure out what information was required to give a recommendation. Based on the subjects that came from that brainstorm session, the following six subsequent research questions were developed:



None of the involved researchers are fluent in Danish, therefor the research will limit itself to information that is available in English. Because of time and budget limits, a field trip to the location won't be included. Additionally, the number of contact persons with knowledge about the location will be limited to one, who can also provide documents that are not freely available on the internet.

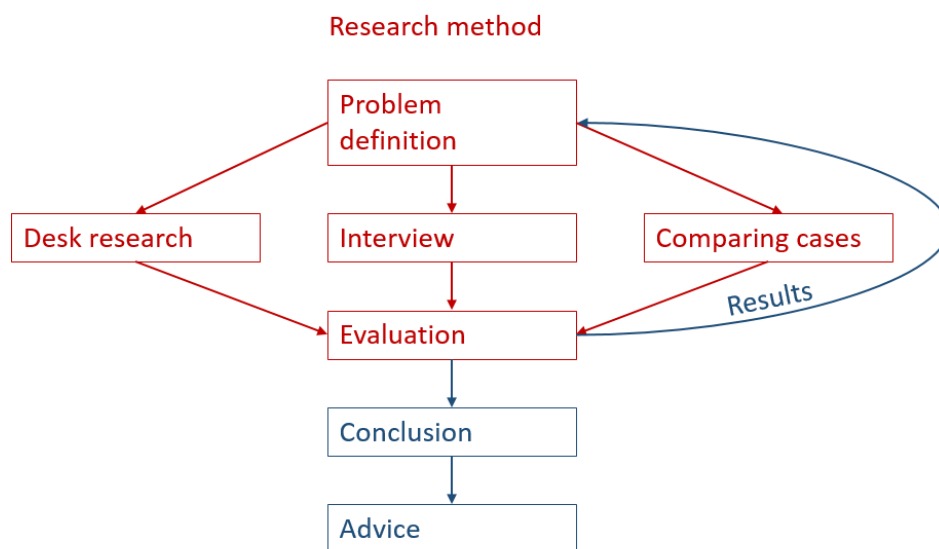
Because Denmark is involved in project FRAMES (European project about Multilayer Safety), and it is estimated affects climate change can influence Vejle dramatically. The recommendations that come of this research can help Denmark, especially the municipality of Vejle, to combat these effects on a cost-effective way. Furthermore, the results of the research can also be used

by other governments, agencies and other actors all over the world, that face the effects of climate change and want to combat them on a cost-effective way.

## II) Methodology

The distance between the research group and the project area causes all the research to be conducted online. The main source of information is the interview, although the interview came later into the project. The interview was a useful tool to direct the research into a defined direction. The theoretical framework is divided in a way that most of the research focusses on explaining the concepts of multi-Layer-Safety and co-creation. This was necessary, because information about Denmark was hard to find due to of the language barrier. While making the research proposal, we found that acquiring reliable information in English was hard. Additionally, it turned out it was difficult to receive information about the location from local experts. Although we collected from several resources. The amount of information this research is based on is limited, though the information resources that are used are reliable.

### 1. The research method



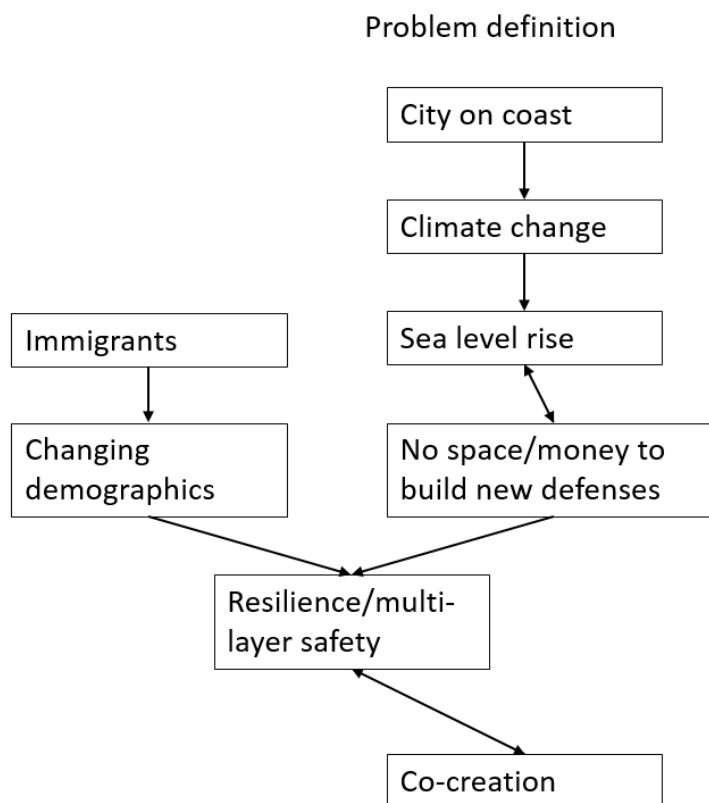
The research method is based on 3 paths: the interview, desk research and comparing cases. The interview is central in gathering specific information about Vejle and in setting limits and preconditions. The bulk of the research will consist of desk research, because of the distance to the project area and the language difference. Comparing cases is important, because of the many difference with the Netherlands, on which the multilayer safety concept is based in Vejle.

## 2. Problem definition:

After analysing Vejle as a city, water safety concept and the goal of the city (and Denmark) concerning water management. This takes looking ahead at future scenarios and options to consider, involving flood resilience (the Dutch multi-layer safety concept) and a new form within called co-creation. Therefore the research questions is:

How can co-creation contribute to multi-layer safety in Vejle?

Co-creation as a resource is a way to improve and implement multilayer safety in Vejle. To research this subject information about co-creation, multilayer safety and Vejle is required. The different subjects are explained in the different chapters of the report. The conceptual model below explains the thought process that is behind the problem definition.





### III) Background Information



Figure 2: Location of Vejle in the World

The city of Vejle is located at the mouth of a fjord, where two rivers meet. It started off as a fishermen's village and was dependent on the water. Now this same water threatens Vejle, as sea levels are expected to rise by 25 centimetres in the fjord by 2050. The city is located in a low-lying area; therefore, the risk of flooding is getting higher. Furthermore, the history of industry in Vejle has suffered heavily from the financial crisis in 2007. (Cathcart-Keays, 2016)

Cathcart-Keays (2016) describes that the problems stated above will be solved by co-creation; working together with inhabitants to come up with ideas. "Co-creation requires an openness to recognize that we don't have all the answers and solutions" (Varneskov).

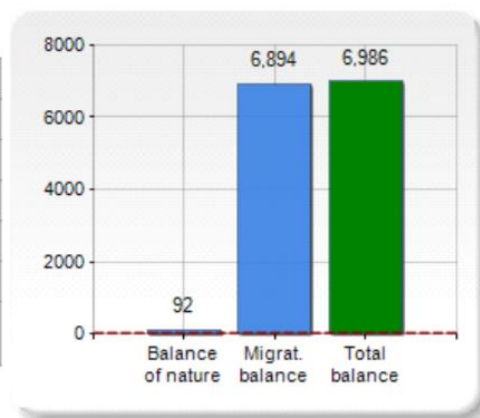
According to Cathcart-Keays's article co-creation is implemented by open meetings and the engagement of existing citizen networks to ensure a collaborative relationship between citizens, the municipality and other stakeholders. Vejle has identified three neighbourhoods that will be used as "laboratories" for experimenting with different resilience projects, from physical infrastructure, to community cohesion initiatives. storm management, flood adaptation, enhance liveability, bottom-up community initiatives. A 80-hectare brownfield site on the outskirts of Vejle will be developed into a new residential area by 2050, by integrating and scaling up successful solutions from elsewhere in the city.

Cathcart-Keays states that Vejle goal is to be a unique example in flood resilience all over the world. For this reason, the city is involved in the network 100RC, existing of cities that share this same goal. For example, Rotterdam and New York are also in the 100RC network. The cities share ideas about resilience building, but still want their city to be unique to its environment.

## IV) Demographics

### 1. Demographic Balance

Inhabitants (N.)	111,743
Families (N.)	21,266
Males (%)	50.0
Females (%)	50.0
Foreigners (%)	7.5
Average age (years)	40.0
Average annual variation (0/2015)	<b>+0.00</b>



Balance of nature:  
Births-Deaths  
Migration Balance:  
Registered-Deleted

Figure 3: Graph of the Demographic balance:

#### National Rankings of Vejle:

- Is on 3° place among 22 municipalities in region by demographic size
- Is on 6° place among 99 municipalities in DENMARK by demographic size
- Is on 82° place among 99 municipalities in DENMARK per average age
- Birth rate: 10.2‰ (22° place among 99 municipalities)
- Death rate: 9.3‰ (70° place among 99 municipalities)
- Migration rate: 63.7‰ (32° place among 99 municipalities)
- Growth rate: 62.5‰ (30° place among 99 municipalities)

### 2. Economy

The thoroughly modern market economy possesses a high-tech agricultural sector, a very developed industry with world-leading firms in pharmaceuticals, maritime shipping and renewable energy, and is very dependent on foreign trade. Denmark is a net exporter of food, oil, and gas and enjoys a comfortable balance of payments surplus, but is very dependent on imports of raw materials for the manufacturing sector. Danish people enjoy a high standard of living and the Danish economy is unique by its extensive government welfare measures and an equitable distribution of income. Its aging population will be a major long-term issue. (Cathcart-Keays, 2016)

Denmark is a member of the EU, and the Danish legislation and regulations are in agreement to EU standards on almost all issues. Despite meeting the criteria to join the European Economic and Monetary Union, Denmark had negotiated an opt-out with the EU and was not required to adopt the euro. Within the EU, Denmark is one of the strongest supporters of trade liberalization. (Nielson, 1996)

After a long consumption-driven increase, Denmark's economy began slowing in 2007, with the end of a housing boom. Housing prices dropped remarkably in 2008-09 but, with significant regional variations, have since recuperated. Household indebtedness is still relatively big at more than 305% of net disposable income in 2014, while household net worth amounted to 546% of net disposable income. (The World Factbook, sd)

The global financial crisis intensified this repetitive slowdown by increasing domestic borrowing costs and lowering foreign demand for Danish exports. Denmark preserved a healthy budget surplus for many years up to 2008, but the budget balance swayed into deficit in 2009. The structural budget deficit has persisted below 1% and is estimated at -0.4% in 2016. Denmark is suffering a lacklustre economic recovery, having still not recovered the GDP level of 2008. GDP obtained in 2012 and 2013, followed by real growth of 1.3% in 2014, and 1.2% in 2015. The government estimates a 1.9% growth in 2016, while private sector estimates are about a 1% growth. A historically low level of unemployment rose with the economic downturn but the labour market has toughened since 2013, and unemployment held at about 4.5% in early 2016, based on the national measure. Productivity growth was substantially below the OECD average in 2012–2014. (The World Factbook, sd)



## V) Co-creation

### 1. Definition

Co-creation has a number of different definitions, based on the field it is implemented in. The most basic definition of co-creation is: "The practice of developing systems, products, or services through the collaborative execution of developers and stakeholders, companies and customers, or managers and employees."

The text book definition of co-creation is: "A business strategy focusing on customer experience and interactive relationships. Co-creation allows and encourages a more active involvement from the customer to create a value rich experience." (co-creation, sd) Key words in this definition are customer experience, interactive relationships and active involvement. Customer experience is important, because it is the source of information, knowledge and experience that could be used. Interactive relationships mean a two-way dialogue; businesses should not only receive information, but also share. This allows for a more constructive dialogue built on feedback and allows for more trustworthy information. Active involvement allows for better communication, enabling customers. An example of active involvement is voting; it is a great tool to make customers more attached to the business. This means feedback is serious and useful.

This is the business definition of co-creation. When talking about governments, co-creation usually represents creation together with other governments, other sectors or other government agencies. These different government agencies, governments and sectors work together on a difficult subject by adding their own expertise and knowledge.

Co-creation with Knowledge Institutes and private companies can add a lot of value to a project. This principle is called the Triple Helix Approach.

This type of co-creation is more well known in the fields of water safety, climate change etc.

However, the business type of co-creation could also be very useful. Replacing the word customer with inhabitant and the word business with a certain part of the governments can add a lot of value by using inhabitant's knowledge, experience and creativity.

"One key to creating more co-creation in the public sector could be to frame co-creation as an opportunity and as an untapped resource for public bodies. It is a resource in terms of intelligence of a problem, ideas for solutions and expertise. How can we mobilise this to the best effect?" Perrie Ballantyne (NESTA) (Louise Pulford, n.d.)

Co-creation could also be a useful tool for social innovation. Social innovation is the development and implementation of new ideas (products, services and models) to meet social needs. Social innovation differs from normal innovation, because the motivation is social improvement, not personal monetary gain. Social innovation can come from the non-profit sector, the market, the state individuals, groups and associations. Co-creation could be the tool to gather the ideas from the individual and groups. (Louise Pulford, n.d.)

"Lots of co-creation is happening around the world. What is lacking is a real-time assessment of which of these are working and which aren't. Instead there is a stream of books and articles saying it is all wonderful- and that is actually not helpful because then people make unnecessary mistakes." Geoff Mulgan (NESTA) on the challenges of co-creation (Louise Pulford, n.d.)

## 2. Types of co-creation

When talking about climate change, urban planning or water safety, two types of co-creation can be recognized. The first type of co-creation exists of cooperation between organisations who are affected or can affect the subject in question. The governmental organisation works together on different levels and/or with private and/or NGO's to share information, spread risk, share experience, share knowledge and work towards a common goal. This type of co-creation is already widely used a variety of fields, because projects regarding for example climate change cover a wide range of fields like ecology, civil engineering etc.

The second type of Co-creation involves governmental organisations and inhabitants. This type of Co-creation started in the private industry, for example food products have a phone number for complained and tips. Consumers are used as a gigantic think tank for ideas. This type of co-creation could be used by governmental organisations, because inhabitants know a lot about the area they live in, they know what they want and with the right information they can be very helpful and come up with creative ideas.

## 3. Co-creation in and around governments

Co-creation already exists in and around governments. Co-creation in the government is required when problems overlap a great number of fields. Co-creation between governments has been an important subject in the last 100 years as reaction of 2 world wars. Co-creation between governments is also required, because industrialization created effect, which are felt cross-border.

## 4. Co-creation in the Government

The growing focus by governments on the provision of social services for individuals, families and community groups has increased pressure on governments. Research and policy required collaboration, because problems overflow into different fields. (Majumdar, 2006)

Decentralisation of legislative power leads to a higher demand in co-creation between smaller municipalities are forced to work together on bigger projects. These projects can also overlap with other government agencies who focus on specific subjects. The Dutch government utilized co-creation in the government in water safety to ensure area specific solutions. Municipalities who have knowledge and experience of the area work together with water safety authorities and bigger governments to spread the risk and ensure the best possible solution. On the highest level of government co-creation is necessary because subjects like climate change affect economy, infrastructure, environment and more. Which are under the wing of different ministries. This means ministries are forced to create joint efforts and visions.

## 5. Co-creation between Governments

Co-creation between governments exists on great amount of levels. The European Union is a form of co-creation on economic level by a great number of governments. The NATO is co-creation between governments on defensive level. COP is co-creation by almost every country on earth focused on discussion and creation international legislation and agreements. Subjects as climate change which effect are global show the importance of co-creation between governments.

## 6. Co-creation between the three sectors

Co-creation between the three sectors exist in many forms. One of the concepts focused on this type of co-creation is the Triple Helix Concept, co-creation between public, private and knowledge institutes.

The Triple Helix concept is based on the Triple Helix thesis: "The potential for innovation and

economic development in a Knowledge Society lies in a more prominent role for the university and in the hybridisation of elements from university, industry and government to generate new institutional and social formats for the production, transfer and application of knowledge. This vision encompasses not only the creative destruction that appears as a natural innovation dynamic, but also the creative renewal that arises within each of the three institutional spheres of university, industry and government, as well as at their intersections.” (The Triple Helix concept, sd)

The Knowledge and Innovation Communities (KICs) are public private partnerships that are created to stimulate European sustainable growth, innovation capacity and competitiveness. KICs are part of the European Institution of Innovation and Technology, a body of the EU Union. Each KIC has been set up as a legal entity and has appointed a CEO to run its operations. KICs have a large degree of autonomy to define their legal status, internal organisation and working methods. KIC partners work together to initiate large projects in the areas of our innovation and climate change: specifically, sustainable cities, land & water management and bio-economy. (Knowledge and Innovation Communities (KICs), 2017)

Co-creation is not only initiated by governments, but also universities across the world are reaching out to form ambitious partnerships with industry, government and civil society organizations. In this role of “co-creation”, a university attempts to materialize sustainable development by working with society, to create innovation, sustainability and society. Universities focus on gathering knowledge, interpreting information and act as an active catalyst for research. This research can trigger and then drive the sustainable transformation of a specific region, city or community. Universities in turn can use their network to add value to their studies by using private and public partners. A good example of universities co-creating is the University of Strathclyde. This university is partnering with Glasgow City to make the region “one of Europe’s most sustainable cities within 10 years”. Novatlantis, the sustainability initiative of the Swiss federal institutes of technology and research, is co-creating with public and private partners to use the cities of Basel, Zurich and Geneva as test beds for innovative sustainability experiments. This collaboration means more possibilities for research for the universities and real world solutions and projects for the public and private partners. (Trencher, 2012)

## 7. Co-creation with Inhabitants

Governments co-creation with inhabitants could learn a lot, by looking at how private companies co-create with their customers. Some companies use co-creation very successfully to upgrade their relevance in a very competitive market or to directly create value. There are some differences between governments and private companies that make it impossible to directly copy these ways to co-create. However, very important lessons can be learned of how these companies co-create which could be used in a number of fields, one of them being water safety.

DEWALT is a leading manufacturer of high-quality power tools. The company uses its community to get to know customers and their needs while gathering product, packaging and marketing feedback. DEWALT also has an invention submission where professional tradesmen and loyal customers submit ideas for entirely new product lines. They call this group of customers an insight community (Milbrath, 2016).

An insight community is composed of your most trusted stakeholders—your customers, partners, employees, fans, donors or alumni. As insight community members, they give you rapid and ongoing feedback from a trustable source because of the long-term relation. Important corner stones of an insight community are two-way dialogue, respect for individuality and complete data like Big Data,

CRM and social media analytics. This way of working means thriving in a very competitive market for DEWALT. (What is an insight community?, sd)

This way of gathering important information and feedback could easily be used by governments, because of the nature of governments long-term relations combined with statistical information already at hand trustworthy feedback could be gathered. The two-way dialogue also allows for the insight community to come up with solutions or ideas.

Another great example of using this type of co-creation is the Danish company LEGO. LEGO is a toys company and its business model is based around creative and fun sets of LEGO blocks. LEGO used a community of customers to come up with creative and fun sets, this community is called LEGO Idea. LEGO Ideas is an online community where members can discover cool creations by other fans and submit their own designs for new sets. Fans can vote on submissions and give feedback. If a project gets enough votes, LEGO reviews the idea and picks a winner for an official LEGO Ideas set to be created and sold worldwide. The creator gives final product approval, earns a percentage of the sales and is recognized as the creator on all packaging and marketing. (Milbrath, 2016)

Attracting (in this case) customers with a reward is a win-win-win situation; LEGO sells sets, the creator earns some money and customers get new sets to play with. The use of an online community allows for a global reach. Not every part of LEGO's co-creation method is useable for governments, but the general idea of using websites combined with a reward could be a great source for creative solution for all kind of problems or projects.

Made.com is an online furniture company which uses co-creation to discover new talent. Made.com has limited showroom space in the UK, so it relies on Made Unboxed online community. Made Talent Lab hosts an annual online contest, Made Emerging Talent Award. New designers submit their work for other designers and customers to vote on. If a design gets enough votes, earns the attention of judges and wins the contest, the piece is produced and sold on Made.com within 12 months. The company publicizes the design, giving the fledgling designer exposure, a career boost and royalties. (Milbrath, 2016)

Made.com uses this competition not just to find new talent but also to show new designs and have customer input. The concept of using contest is already used by governments, for example street names. Made.com shows that customers could be extremely useful in picking the right solution. Governments who create tenders for certain projects could also allow inhabitants to vote on which projects they prefer, give feedback or even send in their own projects.

Co-creation is already being used by governments on many different scales, an example of using co-creation on a smaller scale is on the site [www.wijbouwenenwijk.nl](http://www.wijbouwenenwijk.nl). Not the town council plans a new district, but residents and interested parties enter in ideas and plans on the website. The town council sets limits and preconditions which act as boundary for the ideas and plans. (Solutions, 2011)

## 8. Why is Co-creation with inhabitants important?

- Citizens, as creative contributors, are being neglected in a normal representative democracy. Participatory democracy is necessary to overcome the weakness of representative democracy. This has been an important subject in the Netherlands regarding the field of health care, inhabitants are required to participate in taking care of family and friends.
- Many of our current problems cannot be solved through disciplinary science. The relationship between science and politics demands new design in an environment of media-politics, interdisciplinary problems and reflexivity.
- Social media is mass self-communication. No ownership is visible on social media platforms and consumers are producers. Communities exist in social media; society is richer than ever on social media.

(Louise Pulford, n.d.)

## 9. How to co-create with inhabitants?

There are several steps in co-creating with inhabitants

- I. Identification of inhabitant's needs:  
The process of co-creation by citizens needs to start with the identification of a need or problem faced by citizens. The process of identifying such needs is not necessarily an easy task, but can act as boundaries for the co-creation.
- II. Prioritization:  
Governments or local authorities would then need to prioritize them in order to focus. Prioritization criteria would ideally be based on potential impact on citizens, perceived impact and difficulty of resolution.
- III. Focus:  
At this stage, the identified problem ought to be clearly defined. Even though it is always possible to change the area of focus, a well-defined problem allows for better interaction.
- IV. (Re) Create:  
At this point, a first concept for a solution to the identified problem should be developed. This process should be centred on satisfying the needs that were previously identified. Meetings or events can be used to come up with creative solutions.
- V. Test prototype:  
When a prototype is developed, it should be tested. The best way of testing depends on the problem and the prototype. A living lab approach, testing it in a real-world environment could translate is better feedback. Testing prototypes in real world environments is very useful in terms of the user experience and feedback.
- VI. Gather Citizen Feedback:  
Citizens that use the prototype should provide feedback about their experience using the service, and their feedback should be taken into account. This feedback should then be used to improve the prototype.

The last three steps should be repeated, improving the proposed solution based on feedback received from potential users, until the identified issues are fully addressed. More difficult problems can require more steps and an increase in the repetition of the last 3 steps (MUENTE-KUNIGAMI, 2013)

## VI) Multilayer safety in Vejle

Denmark has a long history with water safety, dating back to the first known dike construction in 1000 A.D. The coast is protected against erosion with constructions like revetments, rubble mound breakwaters and groynes. Since 1974 the Danish government also started with sand nourishments along its coasts (Kystdirektoratet, 2009) .

A survey conducted between 1996 and 1999 which found the following coastal protection constructions along the coast: (Coastal protection in Denmark, sd)

5600 Jetties and other constructions
13000 Groynes and breakwaters
700 km revetment
900 km dikes



Figure 4: Characteristic shape of the Danish coastline at Tisvilde in Zealand

### 1. National plans and acts

In 2011, Denmark launched a national coastal protection strategy. The purpose of the strategy is to increase the quality of the Danish coasts and provide more attractive coasts for the benefit of everyone (Kystdirektoratet, 2009). The objective of the strategy is to ensure that coastal protection schemes in Denmark are carried out in an optimized, long time manner based on overall improvement of the coast. The plan deals with expected effects of climate change and sets the stage for a long term, coordinated overall approach for coastal zone management. The purpose of the plan therefore seems to be similar to the Dutch 'National Water plan'.

In Denmark the 'Coastal protection act' regulates coastal protection and other types of terrain changes along the coasts (FAO (Food and Agriculture Organization of the United Nations), 2015). It was last changed in 2009 and its purpose is to protect national coasts to avoid flooding and degradation of land from the sea, Fjords and other territorial areas. The act consists of 5 chapters:

- I. Purpose: Municipality Jurisdictions for coastal protection measures
- II. Coastal protection maintenance
- III. Regulatory provisions
- IV. Appeals
- V. Injunction, penalty and entry into force



## 2. Structure and responsibilities coastal protection Denmark

In a few places in Denmark the protection of the coast is of national importance. There the government will participate in the construction and operation of coastal protection. In the rest and largest part of Denmark, the landowners are responsible for protecting their land against the sea.

Because Vejle is identified in the Floods Directive, the ministry of Environment and Food and its department for coastal protection have jurisdiction in the area concerning coastal protection and developments.

The government body that is responsible for the water safety on a national level is the Danish Ministry of Environment and food (Ministry of Environment and Food of Denmark, 2015).

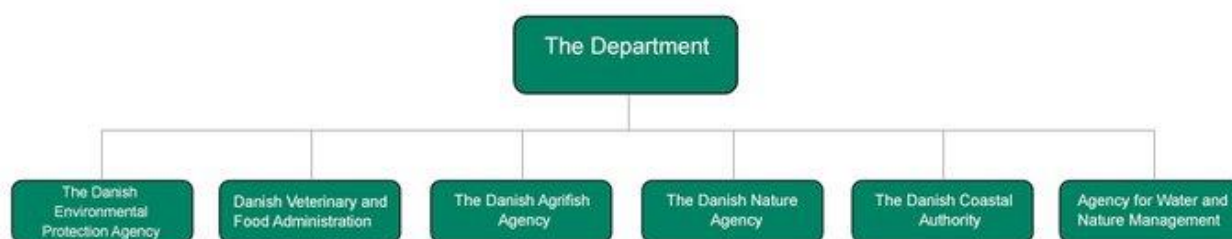


Figure 5 The 6 agencies that are part of the Danish Ministry of Environment and Food.

Authorities and people that are responsible for the water safety in Denmark:

Who	Responsibilities
Landowners	Protecting their land against the sea
Ministry of Environment and Food	Protecting places of national importance against the sea
The minister for Transportation	Regulates the coastal protection act guidance in adherence to sea territory environment.
Municipalities	Protecting and caring for coastal protection structures in their area.
Danish coastal Authority	(See list below)

Tasks of the Danish Coastal Authority (Kystdirektoratet, 2009):

- Advises the Danish ministry of the Environment and helps design deeds, announcements and legislation concerning the coasts and territorial waters.
- Is central in the storm surge warning system along the west coast of Jutland, from Thyboran to Nmindegab and Southern Jutland, from Esbjerg to the German border.
- Dredges sediment in several navigation channels and ports in Denmark
- Surveys the water depth and coastal developments.
- Projects and carries out coastal protection.
- Analyses coasts and secures technical knowledge concerning coastal protection and dynamics.
- Is the relevant national authority when interventions in Danish territorial waters are carried out.
- Is the relevant national authority, when private actors or the government wish to change or construct coastal protection.

Figure 6 Tasks of the Danish Coastal Authority (Danish Ministry of the Environment, 2014)

 Danish Ministry of the Environment, Copenhagen/  
The Danish Coastal Authority, Lemvig

- Coasts covered by the Coastal Protection Act
-  Responsible for coastal protection
-  Joint venture on coastal protection
-  Technical dike inspection
-  Areas with storm surge warning service
-  Areas identified in the Floods Directive
-  Maintenance of the water depth in waterways and port entrances
-  Maintenance of port works
-  Maintenance of sluices
-  Maintenance of the Rama dike



 Danish Ministry of the Environment  
Coastal Authority

August 2014

### 3. Multilayer safety in Denmark

Denmark (as does Vejle) works with the three layers concerning water safety. Although the protection and sustainable spatial planning layers in Denmark seem to be more incorporated than in the Netherlands, there is a clear distinction about the responsibility for each task. The Danish national coastal protection strategy and Coastal Protection Act not only regulates the protection of the Danish coasts, but also regulates spatial planning along the coasts. Although Denmark does not know water boards as in the Netherlands, their tasks are mostly carried out by the local landowners, municipalities and where national safety is concerned, the national government. A big difference is that Landowners along the coasts in Denmark have more responsibilities than in the Netherlands. (Kaija Anderson, 2016)

Furthermore, the third layer of disaster management can be recognized in Denmark's flood resilience concept. According to (Kystdirektoratet, 2009) the municipalities and police along the west coast of Jutland have established a storm surge warning management system for the Wadden Sea area and west coast of Jutland. However Vejle is located on the east coast of Jutland, no special disaster risk management tool is in place for Vejle and its coast.

The interview with our contact person in Denmark, Kaija Anderson, explained that land owners pay for coastal protection. Because of the long coast line, the government cannot afford to protect the whole coast. Landowner are responsible for their own coastal protection of erosion and flooding. Since Vejle is a fjord, the municipality has a bigger responsibility to run the flood protection strategy. The focus of Vejle is on one large solution instead of a million small solutions made by each individual land owner. However, landowners still have to pay a part of it.

Examples like the flood in Roskilde have shown that areas of Denmark are underprepared. Coastal authorities are working together with other countries and organisations to improve the resilience of the Danish coast. Creating awareness without creating panic is one of the biggest challenges in Danish flood protection at the moment. Therefore, the Danish government is working together with for example the Rockefeller foundation, to combine flood protection with social issues like crime and liveability. (Kaija Anderson, 2016)

## VII) Co-creation in multi-layer safety

After several disasters, the Dutch water-safety-policy has shifted. Delta areas can just be kept safe by prevention by building dikes, but will require risk management. This is an efficient combination of three measures:

1. Prevention of floods in form of flood barriers, like dikes.
2. Spatial planning that creates safe areas during a flood.
3. Disaster management, in order to act wisely before, during and after the flood.

This concept is known as multi-layer safety (van Buren, Ellen, van Leeuwen, & Van Popering - Verkerk, 2015). These concept is present in other countries, as resilience. However here the three elements are not always recognized as separate.

Multi-layer safety is applied to provide flood protection to inhabitants in Delta areas. Co-creation is based on the cooperation of inhabitants in all kinds of measures and projects. But how can inhabitants cooperate in flood resilience in their own house, village or even country? Therefore, the three layers of safety will be discussed in separate cases. These cases also illustrate a realistic picture of what inhabitants and other parties involved can do themselves to provide water safety.

### 1. Essential cooperation

The first layer works sufficient, because legal instruments assure the Ministry of Infrastructure & Environment and water boards cooperate. Because these authorities are forced to work together by the Dutch Water Act, safety can be organized.

However, with the arrival of the second and third layer, different parties will get different responsibilities and the Ministry and water boards will have to work together with safety regions, municipalities and provinces, which will all get different responsibilities. Both layers do not have legal standards that force cooperation (nor safety). Adaption in spatial planning and disaster plans are made, although no instruments force specific results. Cooperation is required to assure all layers are treated equivalent, for this reason a legal base will oblige this. (van den Heuvel, Roovers, & Eijer)

According to van den Heuvel, Roovers & Eijer, results in the second and third layer can only be achieved by the cooperation of water managers, spatial planners and disaster planners. These parties have a crucial role in co-creating plans, which much be established. For example, the Dutch Water Assessment only points at the adaptation of current spatial developments, but does not set conditions or terms.

By looking at the essentials of cooperation, results can be achieved by ensuring all parties share urgency and a goal and must realize they cannot succeed without co-creation. Furthermore, experience and knowledge must be shared, as well as intermediate products in order to set trust.

In addition, the essentials for enhancing co-creation in multi-layer safety are stated (van den Heuvel, Roovers, & Eijer):

- The sense of urgency must become higher. Climate change developments will cause higher flood risks. In countries (like The Netherlands), proper prevention creates a very low probability of flood. Furthermore, absent legally binding instruments do no create urgency.
- Clarity in what parties can gain from spatial adaptation as a protection measure, together with the possibilities of multi-layer safety. Regulations must become more flexible to spatial adaptation to maintain protection levels.

- Raising awareness of the interdependence of all parties. Since e.g. spatial planners are not obliged by flood protection objectives, but the Ministry and water boards are, parties do not realize they need each other to create safety.

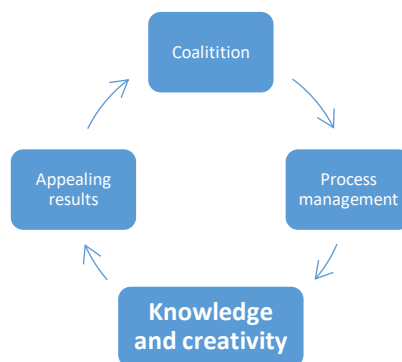
Summarizing all measures that are required to achieve efficient co-creation; conditions must be set for stakeholders on all layers of multi-layer safety.

In order to explore cooperation in water safety, pilots are set, such as in Marken, the IJssel-Vechtdelta and Dordrecht. These projects make actors explore the possibilities and advantages of creating multi-layer safety together.

## 2. Pilot projects in multi-layer safety

Deltares has implemented three pilot projects in the Netherlands, as instructed by the Ministry of Infrastructure and Environment. Marken, Dordrecht and the IJssel-Vechtdelta all required improved flood resilience. Therefore, the three layers were required to complement each other. The projects were meant for a learning process, by following a strict evaluation process. This resulted in more experience in what co-creation is required to make multi-layer safety work efficiently. (van Buren, Ellen, van Leeuwen, & Van Popering - Verkerk, 2015)

Deltares (2015) concluded that for the realisation of multi-layer safety in the location, collaboration is required. Each pilot required a cycle with the elements illustrated in the figure below.



Knowledge and creativity turned out to be very important in the pilots. In this stage, the process of co-creation was invested in. This meant knowledge of the area was mobilized in order to get a complete look on water safety. Furthermore, the design of the research safety measures was important, which required having considerations jointly.

Furthermore, Deltares stated having new insights in co-creation. By (creative) looking for strategies in how to combine the different layers of safety, parties were supposed to take a different view on an area. Different parties now had to treat the area as a coherent environment, in which collaboration required all those working together to share knowledge. Co-creation exists of interaction, which is an exchange of experiences and will moreover stay useful in future projects. (van Buren, Ellen, van Leeuwen, & Van Popering - Verkerk, 2015)

In addition, Deltares states co-creation is useful among the responsible parties, as well as in consulting inhabitants. Local knowledge of the project area is important when a design of a safety measure has started. Especially for the design-criteria, since the inhabitants have to live with the measure and know the area best. For example, in spatial adaptation, inhabitants can indicate locations for measures which will protect them during a flood. Furthermore, inhabitant's cooperation is always required in the third layer of multi-layer safety, as evacuation is an important

stage in disaster management. Without proper communication of evacuation plans and terms, it becomes more difficult to protect the common good.

The pilot projects resulted in another important stake in co-creation: to set priorities. All parties can decide in whether they are looking for long-term or short-term flood-resilience measures. Furthermore, which layer is the most important to start with? This will be different for each town. For example, dikes will be a priority when the space and room is available, like in the Netherlands. However, cities build densely attached to the coast, like in Denmark, will be forced to have different priorities, since dikes are not always an option.

### 3. Communication and awareness

The layer of disaster management exists of plans on how to act before, during and after a flood. To execute these plans (e.g. evacuation plan), inhabitants and organisations must be aware of flood risk. Communication does not only play a role in raising awareness, but also in the preparation for a flood. In case of a flood, inhabitants can cooperate in their own safety by being aware of the risk and preparing. For this reason, co-creation has an important role in the third layer.

Project Flood Aware (2013) is a collaboration of Province of Zeeland (NL), Somerset County Council (UK) and Coastal Division (BE). Raising awareness of flood risk is their main goal. The mean to achieve this societal goal is by using marketing. For communities and (smaller) companies to co-create in their part of water safety requires a change in attitude or behaviour. The countries have all different principles: The Netherland uses multi-layer safety, the UK's water management approach aims for public and private benefits of catchment areas (essential co-creation with public) and Belgium is working on the communication of flood risk and setting goals.

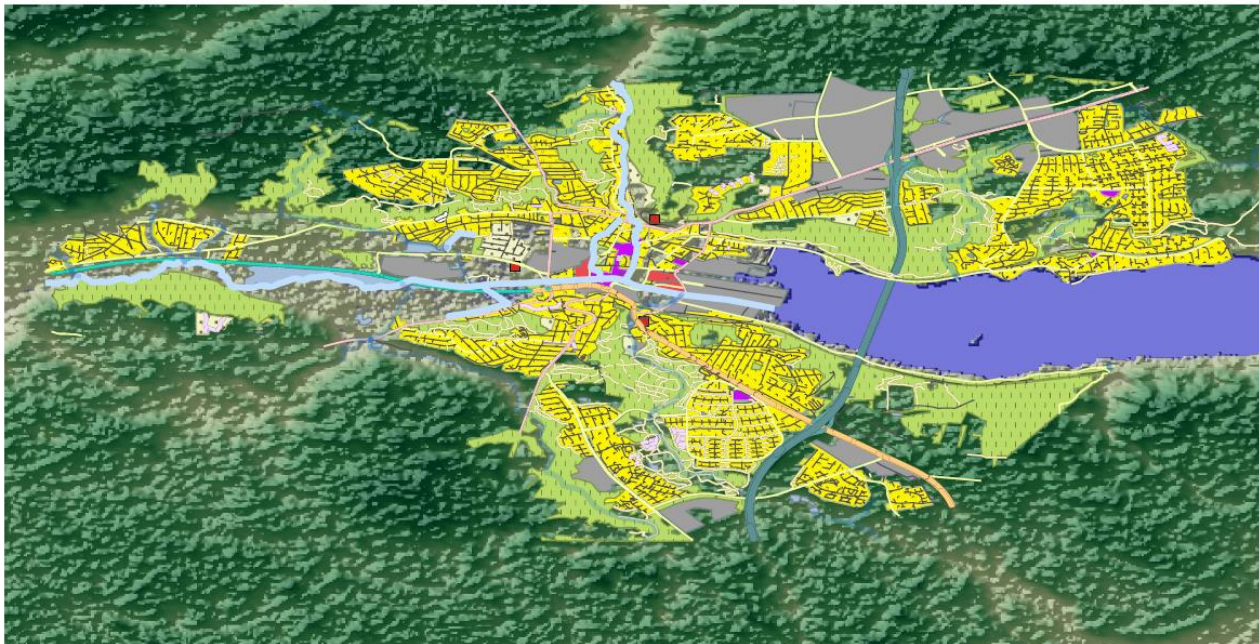
In order to communicate the message of flood risk properly in three different environments, campaigns are implemented. The perceived risk and productiveness of people play an important role, as well as interests, perceptions and attitude. For this reasons, the Flood Aware project is perceived as a marketing principle, focussing on target groups and what the audience wants. Evaluation of pilot campaign made clear, that co-creation in (multi-layer) safety requires direct messages aimed at smaller communities, like business, coastal villages and big cities. It is important to understand the need of people receiving the directed information. (Province of Zeeland, Somerset County Council & Coastal Division, 2013)

The Flood Aware Project concluded in the requirements of societal marketing in order to start co-creation in flood safety, as shown below.

- Step 1: identifying the level of awareness;
- Step 2: Finding out the needs of the target group(s);
- Step 3: Finding out the best way of distributing information;
- Step 4: Starting the campaign
- Step 5 Evaluate and moving on



## VIII) Co-Creation in Vejle



### Legend

waterways points	natural	landuse	buildings
canal	drinking_water	forest	allotments
ditch	hospital	park	basin
drain	water_tower	water	commercial
river		industrial	train_station
stream		meadow	water_tower
		residential	



0 0.5 1 1.5 2 2.5 km

Figure 7: Map of the Functions of Vejle

The actors of the city of Vejle can be split in different categories:

- Residents:

Can participate in local communities as shown in the map below. The municipality of Vejle uses the ABCD (Asset Based Community Development) approach.

- o ABCD APPROACH

The method focuses in particular on the resources that are embedded in social relations. It is in the connection of the resources bound in the local area and with the resources supplied from outside the possibilities of creating a permanent change in the area lies.

The first task is to identify the resources, then to connect the relevant resources and eventually enable them. An important tool in ABCD context is the appreciative approach (Appreciative Inquiry or AI). The appreciative approach seeks to strengthen the people involved, self-esteem and thus give the individual the best possible conditions to develop the resources they have.

The advantage of using the ABCD method is that there is a focus on the positive stories. The stories help to create images that affect the way we think and act. The idea of the method is to take the best from the past into the future. Other methods have a tendency to think problem-oriented and it can help to accentuate the negative stories about an area and thus make it harder to bring development in the area.

- Community groups:

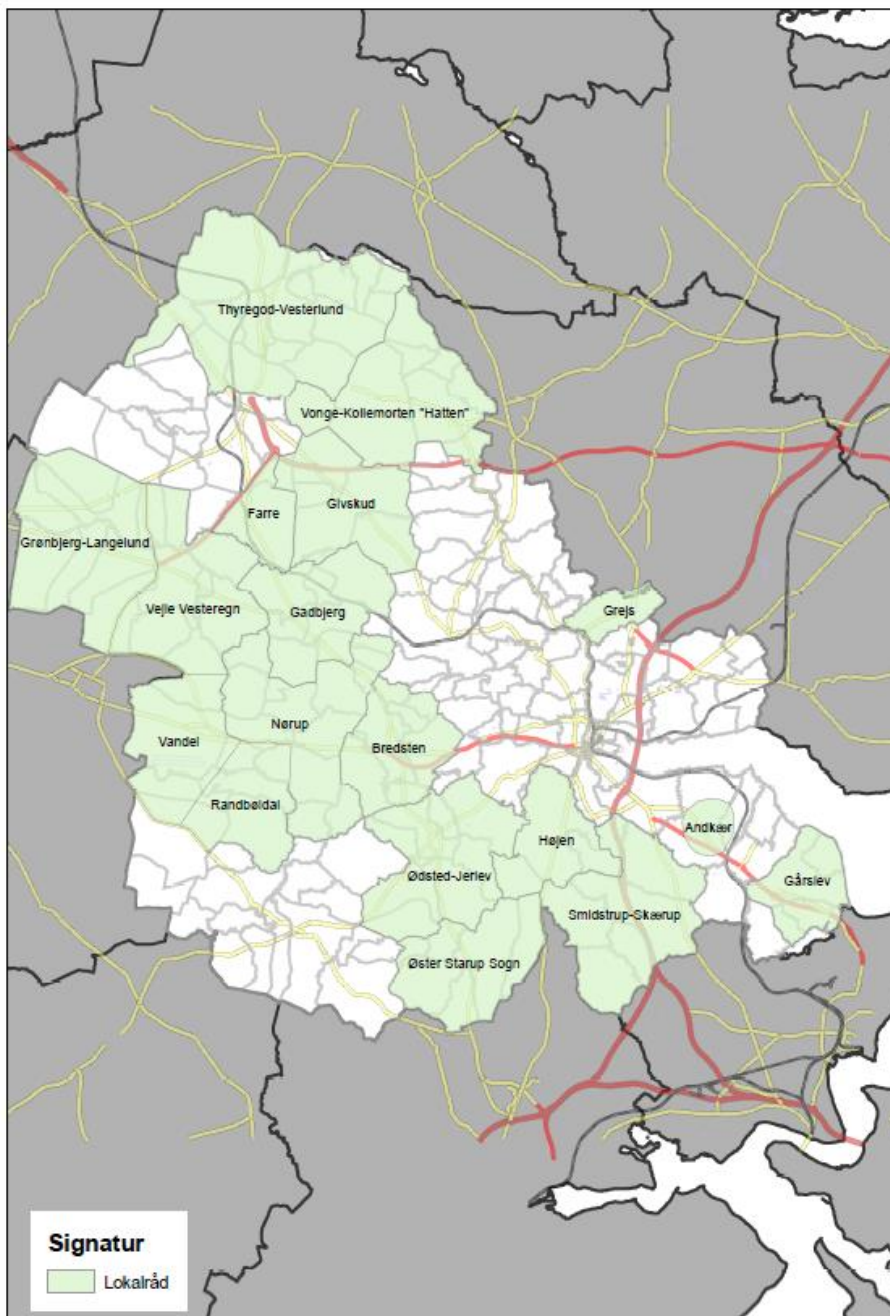


Figure 8 active communities in Vejle <http://www.lokalsamfund.vejle.dk/Lokalraad/Samarbejdsaftaler.aspx>

- Private businesses:  
Vejle is known as one of the best shopping areas of Denmark. This means there are a lot of commercial and retail businesses. They are mostly centred in the heart of Vejle. The big industrial areas are located on the outskirts of Vejle. And as a grey belt from east to west through the heart of Vejle. This can all be seen on the map in figure one. A big company that is based in Vejle is the Stimorol factory. It is one of the world's largest producers of chewing gum.
- Governmental:  
The government makes plans and gives funds to certain organizations to support them

The table below shows the level of communication and the ability to work together for each of the actors. This table must be read from left to right:

<b><i>Interrelations</i></b>	<i>Residents</i>	<i>community</i>	<i>Commercial</i>	<i>Retail</i>	<i>Governmental</i>	<i>industrial</i>
<i>Residents</i>	+	++	+	+	+	-
<i>community</i>	++	-	-	-	++++	++
<i>Commercial</i>	+	-	-	-	++ ½	+
<i>Retail</i>	+	-	-	-	++ ½	+
<i>Governmental</i>	+	++	++	++	+++	++
<i>industrial</i>	+	-	+	-	++	-

## IX) Communication strategy

Since co-creation is a big part for Vejle's plans to improve in the fields of water safety and sustainability, it would be very useful to research how the communication is arranged in Denmark compared to the Netherlands.

At this moment communication to actors is done in a passive way. The government is making a database collecting information and research about water safety, climate change and sustainability. The database is accessible for actors; however, the government will not give the information actively to the actors. (Kaija Andersen, 2016) This creates a lack of understanding, because certain socio-economic groups won't ask the information while others might ask it.

We classified the following groups:

1. Internally	Netherlands	Denmark
<b>Counsel:</b>	Given assignment to create structure vision	Involved and creates the vision for the area. Informed about the process and development
<b>Aldermen:</b>	Executes the counsel's policies	Approves economic policy. Vision and development plan for political discussion / decision Communication plan. Decisions are made in the committee.
<b>Region group:</b>	Responsible for making the structure vision, steers the process.	Project management. Discusses and clarifies strategic issues compared. Processes involvement of external economy, coordination other projects.
<b>Project leader:</b>	Responsible for the creation of the structure vision, directs and coordinates the development of the structure vision	Economic Committee decides which projects receive a grant. Consults on process activities. Approves development plan.
<b>Process manager:</b>	Guards the process of the project.	
<b>Project group:</b>	Responsible for the information input.	Responsible for the process and organization of the project. In charge of agendas. Preparation for meetings of various Stakeholders and actors and minutes the meetings. Coordinates project activities,

		stakeholder engagement and project communication. Manages the project's finances.
<b>Communication advisor:</b>	Responsible for the participation and communication plan	
<b>Other civil servants:</b>	They need to be kept on a “need to know” basis.	They need to be kept on a “need to know” basis.
<b>2. Externally</b>	<b>Netherlands</b>	<b>Denmark</b>
<b>Inhabitants:</b>		
- <b>Individual inhabitants</b>	Inform	Own responsibility
- <b>Groups</b>	Consult	
- <b>Active community</b>	Collaborate	
- <b>Specific target groups</b>	Involve/ empower	
- <b>Civic panel</b>	Consult/involve	
<b>Organizations:</b>		
- <b>Healthcare</b>	Collaborate	Own responsibility
- <b>Welfare organizations</b>	Empower	
- <b>Education</b>	Involve	
- <b>Housing cooperation's</b>	Empower	
- <b>Regional parties (e.g. province etc.)</b>	Empower	
<b>Businesses:</b>		
- <b>Commercial facilities</b>	Consult	Own responsibility
- <b>Users of offices and commercial rooms</b>	Inform	
- <b>Creative industries (multimedia and network groups)</b>	involve	
<b>Media:</b>		
- <b>Local</b>	Inform	Own responsibility
- <b>Regional</b>	Inform	
- <b>National</b>	Inform	



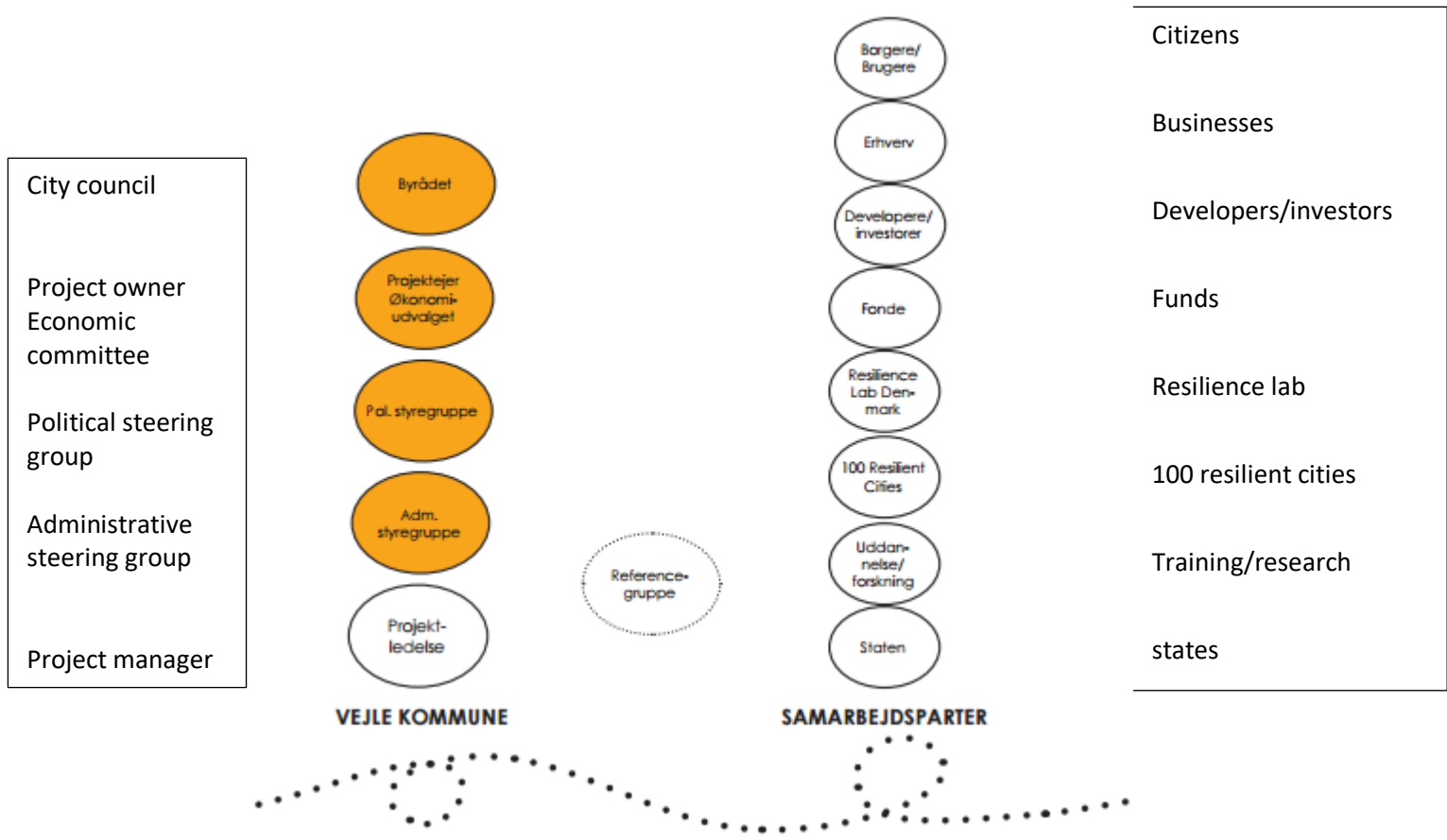


Figure 9: Communication lines climate research: [www.vejle.dk](http://www.vejle.dk)



## X) Conclusion

The city of Vejle is interconnected with the water, historically water meant survival and economic possibilities. Sea level rise in the Baltic sea threatens the water safety in the fjord. Combined with the economic hardship of the last decade and the influx of immigrants Vejle will need to look into creative custom made solutions that not only increase water safety but also focus on social and economic improvement. The plans of the municipality to test different concepts can lead to new solutions and useful feedback. However, there is a source of knowledge and experience with a collective interest in Vejle that could be instrumental for municipality. The 110.000 inhabitants are a pool of knowledge that could be tapped by a range of different methods.

Private companies have shown the usefulness of using customers as a source of feedback and knowledge. This concept named co-creation is used in different ways. Co-creation is already used by governments around the world with success.

The difficulty of the subject of water safety means co-creation needs clear limits and preconditions. The tried and proven concept of multilayer safety could act as a systematic approach to finding solutions that fit Vejle. Moreover, co-creation between government organisations and co-creation between governments allows for solutions that take all actors into account. Different government organisations can create a shared vision that combines their goals.

Within the boundaries of multilayer safety, goals can be accomplished while taking in account liveability, ecosystems and economic values. Although the best solutions are tailored specially for focus area, working together with other governments can be source of ideas and lessons.

Geographical differences means Vejle needs a different strategy of flood protection then the Netherlands, because hard flood preventions is complicated by the fjord. Soft solutions will be required to ensure safety in Vejle. The lack of space and money combined by search for soft solutions allows for effective uses of co-creation with inhabitants.

## XI) Recommendation

Co-creation allows for inexpensive value creation. The knowledge, creativity and experience of the inhabitants could be used to find custom tailored new solutions. The soft solutions required to protect Vejle from floods could be structured in the concept of multilayer safety, using the combination of spatial planning and crisis management.

Governments like the municipality of Vejle could learn a lot by looking at private companies with experience with co-creation.

Effective use of co-creation is still under development but it has shown its possibilities in the private sector. Multilayer safety allows for a systematic approach to the problem of water safety, by creating different layers of defence and considering more than just flooding. Because of the fjord, the first layer consisting of primary water protecting is out of the picture. This means soft solutions are the way forward. Soft solutions in the framework of multilayer safety combined with the knowledge of inhabitants could not only create a safer, resilient municipality. Moreover, it could improve spatial value and liveability.

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### XIII) Appendix

Project proposal is added in the Appendix, research logs are handed in personally by the group members on Moodle.hz

# Vejle

How to implement co-creation in multilayer safety in Vejle?

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*Figure 10 (larsen) fjord at Vejle Denmark*

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## 1. Introduction

According to Cathcart-Keays (2016), the city of Vejle is located in the South of Denmark and has approximately 100.000 inhabitants. The city is located at the mouth of a fjord, where two rivers meet. The city started off as a fishermen's village and was dependent on the water. Now this same water threatens the Vejle, as sea levels are expected to rise by 25 centimetres in the fjord by 2050. The city is located in a low-lying area, therefore the risk of flooding is getting higher. Furthermore, the history of industry in Vejle has suffered heavily from the financial crisis in 2007.

Cathcart-Keays describes that the problems stated above will be solved by co-creation; working together with inhabitants to come up with ideas. "Co-creation requires an openness to recognize that we don't have all the answers and solutions" (Varneskov).

According to Cathcart-Keays's article co-creation is implemented by open meetings and the engagement of existing citizen networks to ensure a collaborative relationship between citizens, the municipality and other stakeholders. Vejle has identified three neighbourhoods that will be used as "laboratories" for experimenting with different resilience projects, from physical infrastructure, to community cohesion initiatives. storm management, flood adaptation, enhance liveability, bottom-up community initiatives. A 80-hectare brownfield site on the outskirts of Vejle will be developed into a new residential area by 2050, by integrating and scaling up successful solutions from elsewhere in the city.

Cathcart-Keays states that Vejle goal is to be an unique example in flood resilience all over the world. For this reason, the city is involved in the network 100RC, existing of cities that share this same goal. For example, Rotterdam and New York are also in the 100RC network. The cities share ideas about resilience building, but still want their city to be unique to its environment.

Vejle has identified three neighbourhoods that will be used as "laboratories" for experimenting with different resilience projects, from physical infrastructure, to community cohesion initiatives. storm management, flood adaptation, enhance liveability, bottom-up community initiatives. A 80-hectare brownfield site on the outskirts of Vejle will be developed into a new residential area by 2050, by integrating and scaling up successful solutions from elsewhere in the city.

The main question will be answered via 6 sub questions. By the questions the current situation of Vejle will be clear and compared to other cities who deal with the same threads. When comparable cities are known actions can be created based on different experiences and a plan can be set up for communities/inhabitant.

1. What are demographics in Vejle?
  - a. What are expected demographics of Vejle in the future?
  - b. What do communities look like?
2. How is multilayer safety applied in Vejle?
3. What are problems concerning multilayer safety?
4. How does co-creation in multilayer safety work in other cities/countries?
5. What safety measures can communities/inhabitants take for themselves?
  - a. And what safety measures can't they take for themselves?
6. How can safety measures be communicated to the communities/inhabitants?



This research will result in a good way to make Vejle socially resilient. The community will then be able to cope with and adapt to social, political, environmental and economic change.

## 2. Theoretical Framework

In the Theoretical framework the foundation of two important concepts for our project will be explained. These two concepts are co-creation and Multi-layer safety. These two concepts are important because they are central for our main question. In addition measures Vejle already conducted regarding the subject of the research will be explained to underline the starting point of this research.

### Co Creation

Many scientist call Climate change the number 1 challenge of the twenty-first century. One of the ways of dealing with climate change is through adaptation. The challenge of climate change adaptation require the ideas, thoughts, and commitment from a wide group of stakeholders from multiple disciplines and organisations. Not one person of stakeholder has all the solutions. The collective knowledge and experience can have the solution, under the right conditions. (Ortiz, n.d.) Co-creation means creating together. It is about sharing knowledge, exchanging ideas, and working together towards a common goal. (Ortiz, n.d.)

Co-creation exist between all 3 sectors, private, public and governmental.

### Co-creation in and with the private sector

“The private sector has been the missing player in the evolution of social entrepreneurship,” says Stephanie Schmidt, Managing Director at Ashoka Europe. “Its potential has largely been untapped. Philanthropy and CSR are really only a drop in the ocean when it comes to the actual potential a company has to change the world.” (Ortiz, n.d.)

Co-creation with the private sector can be very useful because, almost 60% of the 150 most important economic entities in the world are companies, not countries. With such impressive influence and success, they have enormous knowledge and funds.

Together with entrepreneurs they can improve existing systems by combining new ideas with available knowledge and funds. Social entrepreneurs have demonstrated their capacity to turn traditional business logic upside down, especially in times of crisis. Decrease the cost of their solution as much as possible by operate on a shoestring budget and be extremely ‘client’-focused. All of these things could be very valuable for companies and can be extremely valuable for challenges like climate change. (Batist, 2014)

Co-Creation can also exist between inhabitants and other sectors to increase the scope of ideas and increase value. The meaning of value and the process of value creation are shifting from a product- and firm-centric view to personalized consumer experiences. Informed, networked, empowered, and active consumers are increasingly co-creating value with the firm. The interaction between the sectors and the consumer is becoming the locus of value creation and value extraction. Forums for conversation and interactions between consumers, consumer communities, and firms can form valuable sources of information. It is this dialogue, access, transparency, and understanding of risk benefits that is central to the next practice in value creation. When talking about value creation in the climate change debate the value are ideas, information and possible solutions. (RAMASWAMY,

2004)

## Multi-Layer Safety

In 2008, as described in (Multi layer safety and water robust building, n.d.), the principle of multi-layer security was launched in the Netherlands. The concept of multi-layer safety has been applied and tested all over the Netherlands. The concept has shown a lot of promise in adapting to climate change. The multi-layer safety concept changes the water defence from 1 layer of primary defence to 3 different layers:

1. Prevention: By this we mean the primary water defence like primary dykes. More important areas like economic centres require stronger primary defence to withstand stronger storms. The more important the area the stronger the dykes and other water defence systems.
2. Sustainable spatial planning: describes a way of area planning that increases safety and reduce damage. This can be done by secondary dikes or other structures. Spatial measures can be used to address multiple purposes, such as nature conservation, recreation and infrastructure. Important infrastructure and buildings, like main roads and hospitals, can be build higher, placed in safer places or protected in different ways. Combining opportunity with adaptation can be important in funding the second layers.
3. Disaster management: involves realizing better co-ordination between the various emergency service providers, administrative decision-making, communication modes and evacuation plans. Water-robust construction and infrastructure, as well as the development of emergency refuges. Measures taken in the second and third layer should not affect the first layer

Information regarding the strategy Vejle uses is explained in (Cathcart-Keays, Athlyn, 2016). It describes how Vejle launches Europe's first urban resilience strategy, where over a 100 cities worldwide work together to develop flood-adapted neighborhoods. Vejle has already worked on this aspect by building flood-adapted buildings, like a floating kayak club. According to (Cathcart-Keays, Athlyn, 2016) collaboration is a prerequisite to make the city more climate proof. So is also important for the second and third layer of multilayer safety. Furthermore (100RC, 2016) explains that Vejle has a long tradition with climate adaptation. So the citizens and city are used to (new) measures to protect the city against climate related problems.

## Safety measures

On march 17 in 2016 Vejle organised a workshop for representatives from educational institutions, businesses, councils, associations, Vejle City Council and Vejle Municipality to teach them about the cities resilience strategy and the coming city plan. (Cathcart-Keays, Athlyn, 2016) further states that citizens can take measures by themselves by working together and using each other resources.

In (Newsletter Vejle, 2016) it is explained that sensors to measure CO2 levels have been placed in strategic parts of the city in regard to the cities CO2 emissions goals. So the city is also taking mitigation measures to help reduce the effects of climate change.

## Conclusion Theoretical framework

Reliable information on the internet regarding Vejles strategy to implement co-creation in multilayer safety is scarce. Existing information in English is even harder although Vejle has taken effort to translate some of their documents. Vejle has a long history of protecting itself against the water so many measures have already been taken. More research is needed to answer the research question and subsequent sub-research questions. It probably won't be possible to answer the research questions with just a desk research so alternative method(s) will have to be conducted.

### 3. Methodology

This chapter discusses the methodology that is used in this study. The sections will explain the conducted experiments and analysis to investigate the efficiency of the goals and objectives.

#### Actions:

In this section, the means of research will be discussed.

- Desk research:

To find out what the things that have already been researched, and analyse, desk research will be needed through these different points.

- About multi-layered safety in Vejle
- About comparing solutions in Vejle with other comparable cities
- About already existing plans in Vejle
- About co-creation and climate change
- Interview officials about:

The interviews will be used to get some qualitative research results.

- Multi layered safety in Vejle
- Existing polls and questionnaires
- Already existing infrastructures related to co-creation
- Future strategies for co-creation

#### Planning:

In this section, the detail for getting to the means will be discussed

- For the interviews:
  - Prepare questions before the interviews
  - Prepare possible follow-up questions
  - Ask if we can record the interviews
  - Transcript the interviews
- For the desk research:
  - Consists of information gathered from reports, researches, books, websites that already exist about the subject
  - Come up with proper sub-questions

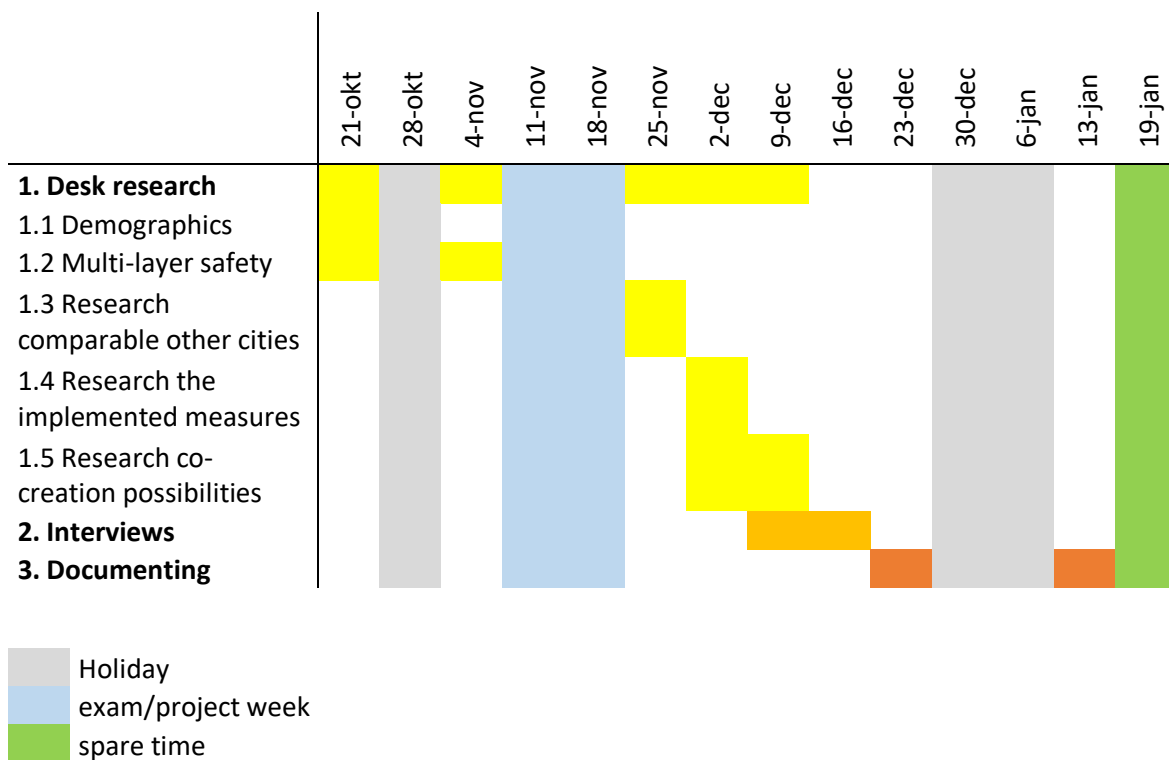
#### Criteria's:

In this section, the boundaries of the research will be laid out.

- What is considered a comparable city:
  - Size of community
  - Layer one should not be the main focus of the city
  - Demographics should be changing

- For the specialists to interview:
  - English speaking
  - Have experience in the area of Vejle
  - Familiar with the concepts multi-layered safety and/or co-creation
  - Coming from different sectors (Private-Public-Governmental-Ngo's)
- For the desk research:
  - Sources cannot be older than the year 2000 for reliability
  - Scientific sources are preferred
  - All sources have to be referenced in APA style

#### 4. Time schedule



#### 5. Communication plan

the client will be contacted every other week to ask for updates and give a overview of the research results. Consultation will be done through VOIP calls this can be skype or oovo or another platform.

The results of the research will be made public to the clients first. They can decide how they wish to use the information.

The research will be assessed by Drs. M.J. Buijs and D.Q.P Fundter

Contact person for information is: xxxxxxxx

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