

URBAN RESILIENCE AS A TRAVELLING IDEA

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Abstract:

Nowadays cities are challenged by complex problems related to economic development, social segregation and climate change among others. In this context the concept of 'resilience' has gained weight among urban practitioners, although the concept remains theoretical and ambiguous. However, in 2013 Rockefeller Foundation launched the 100 Resilient Cities network; attempting to translate the intangible and theoretical notions of resilience into an operational tool "to make cities prepared for tomorrow". Vejle in Denmark, as a partner in the global network, was used as a case to understand how resilience have influenced local planning practices. Drawing on Actor Network Theory and its translation model, we found, that resilience, as conceptualised by 100RC, promotes a more holistic and proactive approach to urban planning. The core offering and value for Vejle in 100RC is the inclusion in a widespread global network, where innovations are tested and best-practices shared, and the access and guidance to develop a Resilience Strategy; identify the city's challenges and review its ability to address them. Lastly we found, that while resilience does not have a particular physical expression, its ideas and practices can be recognised in planning instruments, and work as publicity for Vejle, but its still in its early stage.

Preface

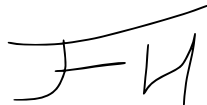
This report was written by a group of two students at Urban Planning and Management at Aalborg University.

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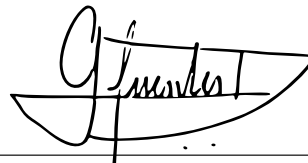
We would also like to thank Ulla Varneskov, CRO in Vejle Municipality, Jakob Oestergaard, planner in Vejle Municipality, Jim Walda, project manager in Rotterdam Municipality, Dima Zogheib, consultant from ARUP, and Konstantina Karydi, associate director in 100 Resilient Cities, for showing interest in helping us by participating in interviews.

Reading instructions

Throughout the report, the Harvard referencing style has been used, which appears in the text as [Last name, Year]. All references can be found in the bibliography at the end of the report. Direct quotes include the page number in which the quote can be found. Interviews are referenced to as [Last name, Year], and with [Last name, Year, Minute:Second], for example [Varneskov, 2018, 12:12] when referred to a specific part in the interview. Pictures and tables without a source were taken and designed by group members. The reference leads to the bibliography, which contains, among other relevant information, the author, title and date of all the sources used in the report. Tables and figures are numbered in relation to the chapter they are placed in, i.e. the first table in chapter 1 is table 1.1, the second is 1.2 and so on.



Jesper Frost Hansen



Gonzalo Fuentes Dellepiane

Table of contents

List of Figures	ix
Chapter 1 Introduction	1
1.1 Challenged cities	1
1.2 Urban resilience	2
Chapter 2 Research Design	5
Chapter 3 Theoretical Approach	9
3.1 Resilience: The concept	9
3.2 Globalisation and Networks	14
3.3 Travelling ideas	17
3.4 Institutions & Institutional Change	22
3.5 Theoretical Framework	28
Chapter 4 Research Approach and Methodologies	33
4.1 Scientific Approach	33
4.2 Case-study	35
4.3 Methods	36
4.3.1 Interviews	36
4.3.2 Document Analysis	38
Chapter 5 The Global Context:	
<i>100 Resilient Cities program & The Definition of the Network</i>	39
5.1 Urban resilience by 100 Resilient Cities	39
5.2 100RC as a network	44
5.3 Chapter Conclusion	58
Chapter 6 Local Context:	
<i>Translation of the Idea & Institutional Changes</i>	61
6.1 Case of Vejle	61
6.2 Translation of the idea into the local Context	66
6.3 Institutionalisation of practice, the long-term impact.	73
6.4 Chapter Conclusion	89
Chapter 7 Spatial context:	
<i>Local projects reflecting urban resilience</i>	93
7.1 Resilient Ny Rosborg	93
7.2 Fjord Byen	97
Chapter 8 Conclusion	103

Bibliography	107
Appendix A Appendix	115
A.1 Interview with Ulla Varneskov, Vejle Municipality	115
A.2 Interview with Jim Walda (JW), Rotterdam Municipality	129
A.3 Interview with Jacob Oestergaard, Vejle Municipality	143
A.4 Interview with Dima Zogheib, ARUP	154
A.5 Interview with Konstantina Karydi, 100RC	162

List of Figures

1.1	Picture from the waterfront of Vejle	4
2.1	Research Design	6
3.1	The Resilience Cycle	11
3.2	Process of translation and travel of ideas.	21
3.3	Three Pillars of Institutions.	23
3.4	Three Pillars and Carriers of institutions	25
3.5	Model of Institutional Change	27
3.6	Theoretical framework	28
3.7	Cycle of ideas.	30
3.8	Model of Institutional Change.	31
4.1	List of interviews conducted	37
4.2	List of documents used in analysis	38
5.1	The Resilience Framework	43
5.2	Map of Actors within 100RC Network.	45
5.3	Platform of Partners - 2018	49
5.4	Resilient Strategy's phases.	53
5.5	Impacts of 100RC program under 4 pathways	54
5.6	Map of Member Cities.	56
6.1	Vejle's location	62
6.2	Flooding in Vejle in 1941	63
6.3	Flooding in Vejle from 2015	63
6.4	The resilience strategy process.	70
6.5	Institutionalising Urban Resilience in Vejle.	75
6.6	CRO within the Municipality Organisation.	77
6.7	Mainstreaming Resilience: Actions within Vejle's Resilience Strategy.	79
6.8	Mainstreaming Resilience in Plans.	82
6.9	Model of institutional change in Vejle	87
7.1	Ny Rosborg	94
7.2	Temporary activities in Ny Rosborg	97
7.3	Fjordbyen top-view	98
7.4	FjordByen General area.	99
7.5	FjordByen three scenarios for flood protection	101
7.6	FjordByen Waterfront.	102
A.1	Interviewguide for interview with Ulla Varneskov, Vejle Municipality	115
A.2	Interviewguide for interview with Jim Walda, Rotterdam Municipality	129

A.3	Interviewguide for interview with Jacob Oestergaard, Vejle Municipality	143
A.4	Interviewguide for interview with Dima Zogheib, ARUP	154
A.5	Interviewguide for interview with Konstantina Karydi, 100RC	162

1.1 Challenged cities

During the first decade of XXI century the world population became predominately urban for the first time in history [Ahern, 2011]. The United Nations World Population Prospectus 2015, estimates that approximately 54,5% of the world population is currently living in urban areas, reaching approximately 3.96 billions of urban dwellers over a total of 7.32 billion inhabitants. This trend will continue, and it is expected that by 2050 the world population will increase up to 9.55 billions. At the same time, the urban population will rise up to 6.34 billion, reaching approximately the 67% of the world population by the mid of this century [Koop and van Leeuwen, 2017]. Due to population growth and migration tendency from rural areas to cities, it is expected that approximately 190,000 people per day will need to find a place to live. As Koop and van Leeuwen [2017] portrays, it will be necessary to build approximately 3.000 big cities with a population size like Amsterdam, over the next 40 years.

This mainly urban era is characterised by a duality. On the one hand, cities concentrate more than the 80% of the gross world product (GWP), agglomerating opportunities, and being catalysts of social development [Koop and van Leeuwen, 2017]. But at the same time, in relation to climate change, cities are responsible of more than 70% of global energy-related carbon emissions [Rosenzweig et al., 2010];[Jabareen, 2015], one of the principals cause of greenhouse effect (GHE). Different process of urbanisation have generated profound impacts on land use, human welfare, social equity and sustainability. All over the world, cities are challenged by divers type of acute and chronic problems, characterised by its high complexity. While acute or sever problems regard shocks such a earthquakes, floods, and diseases occurrence. Chronic problems are related to different type of stresses that weaken the structure of a city, like high unemployment, inefficient public transportation systems, social inequality and unbalance composition of the population, chronic water shortages and food supply, and social violence among others [Spaans and Waterhout, 2017].

.. "if mayors ruled the world, then it would be better, because [...] the states, the countries they are too large, they cannot handle the problems, its in the cities the real innovation and action takes place"... Jacob Østergaard, Planner at Vejle Municipality, quoting Benjamin Barber [Østergaard, 2018, 6:45].

Rapid urbanisation, and growing and expanding cities and mega-cities, requires for new smarter and holistic capacities to overcome the stresses of population growth and fast demographic shifts in population, world economical crises, and environmental catastrophes

[Desouza and Flanery, 2013]; planning for risk and increasing uncertainties. For this reason, nowadays challenges that society is facing will be, arguably, won or lost in cities and larger urban regions [Ahern, 2011]. In this context, cities are responsible for major challenges that the world is facing, but also have the capacity to trigger changes and addressing challenges through innovative and holistic solution; this research will look at 100 Resilient Cities program and network pioneered by the Rockefeller Foundation.

1.2 Urban resilience

"Cities face a growing range of adversities and challenges in the 21st century. From the effects of climate change to growing migrant populations to inadequate infrastructure to pandemics to cyber-attacks. Resilience is what helps cities adapt and transform in the face of these challenges, helping them to prepare for both the expected and the unexpected" [100 Resilient Cities, 2018a]

In light of these challenging times with growing uncertainties the term 'resilience' has rapidly gained prominence among medias, academia and politicians as a metaphor for how to deal with such state of flux [Coaffee and Lee, 2016, p. 18]. Resilience, coming from Latin, *resi-lire*, which means spring back, was first used to describe the characteristics of a spring and its resistance to external stress [Stumpp, 2013, p. 300]. However, the concepts breakthrough is broadly acknowledged to have emerged in the 1960s within fields of ecology to understand ecosystems "ability to adapt while still maintaining core functions in the face of change" [Coaffee and Lee, 2016, p.21]. In this sense, adding a more evolutionary dimension to the term; embracing adaptation as a means to sustain core functions.

Resilience in urban policy and the 100 Resilient Cities

While resilience have been applied in different studies from ecology to sociology, its emergence in urban policies can be dated to around the millennium [Coaffee and Lee, 2016,p. 51]. According to Coaffee and Lee [2016], perspectives of resilience have emerged in urban policies in connection to risks faced in particular places. Events like flooding, terrorist attacks and collapse of housing markets have led governments to pursue policies and practices to enhance cities preparedness and responsiveness; confronting realities. In this sense, the concept of resilience has been translated into urban policies as a prescribed remedy, that incorporates ideas of mitigation, preparedness, resistance and recovery into one, for cities to deal with future uncertainties [Meerow et al., 2015]. Urban resilience, and its ontological acceptance of change and disruption, seems ideally suited for cities and their increasing uncertainties [Evans, J. P., 2011, p. 224]. However, the term have also been criticised for its ambiguity and conceptual confusion. Resilience have been applied in different empirical contexts, fostering multitude of definitions, but also creating confusion about its applicability in practice [Meerow and Newell, 2016, p.3], [Spaans and Waterhout, 2017, p.111].

However, in 2013 the Rockefeller Foundation launched the 100 Resilient Cities (100RC) programme with the vision of *"helping cities around the world become more resilient to the physical, social and economic challenges that are a growing part of the 21st century."*

[100 Resilient Cities, 2018a]. This ought to be done through a \$100 million commitment, providing 100 selected cities with technical support and resources from the network to develop and implement plans - to make them more resilient, which 100RC defines as;

"the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience." [100 Resilient Cities, 2018a] & [Rockefeller Foundation, 2013]

100RC, which today consists of a network of 100 different cities with varied challenges, portrays 'resilience' as the solution on how cities can adapt and transform in the face of disruption. Shortly after its launch, 100RC partnered up with ARUP ¹ to develop a City Resilience Framework (CFR), working as a operational tool, or *"invaluable lenses to help understand the complexity of cities, and identify a series of drivers necessary for a city's resilience"*. Besides access to the framework, member cities will receive:

1. ***Membership in a new network*** where new knowledge and resilience best practices are shared
2. ***Support to hire a Chief Resilience Officer (CRO)*** to ensure resilience building and coordination
3. ***Support to create a Resilience Strategy*** that reflects each city's distinct needs
4. ***An innovative platform to provide tools and resources for implementation of resilience building plans*** [Rockefeller Foundation, 2013]

The 100RC network, and what it provides for its member cities, can be regarded as an attempt to translate the theoretical notions of resilience into an applicable and operational tool to install resilience in cities.

Vejle as member of 100 Resilient Cities network

Vejle, Denmark, was among 99 other cities worldwide that in between 2013 and 2016, was enrolled in the global network of 100RC [100 Resilient Cities, 2018a]. In that sense, Vejle will work together with 100RC to enhance the city's overall resilience and by doing so, meet the vision of 100RC, to make cities *"prepared for both the expected and the unexpected"* [100 Resilient Cities, 2018a]. This statement is what intentionally caught our interest and desire to understand, how the concept is adopted in Vejle, through the 100RC programme, and what effects it has on local planning practices.

In this research, we will look into how the network of 100RC is organised and how 'urban resilience' is conceptualised. Arguably, among different conceptualisation influencing the urban form like; the creative city, the smart city, policentric city, the compact city, the sustainable city, and so on, the resilient city represent another conceptualisation that has followed patterns of dissemination and embedding in different realities and locations, and in this process, influencing urban practices and the institutions that support it. In this sense, portraying urban resilience as a travelling idea would be useful to understand how

¹ "Arup is an independent firm of designers, planners, engineers, consultants and technical specialists, working across every aspect of today's built environment" [ARUP, 2018]

the global program 100RC is embedding urban resilience in Vejle and another 99 different cities. This will be done drawing on Actor Network Theory and its model of translation which will help to understand, how the idea of resilience is embedded and institutionalised in Vejle and hence how planning practices and local projects are influenced.



Figure 1.1. Picture from the waterfront of Vejle. Source: Visit Vejle

Research Design 2

To illustrate how this research intends to answer the research questions, a research design is developed, see table 2.1. The research design illustrates first and foremost how the research will be conducted, but it also serves to underpin the trustworthiness of the results found in this research [Farthing, 2016]. This means, that with a research design, the authors lay out the evidence, or the scientific approach, that has been produced or applied to produce and support the claims [Farthing, 2016]. Furthermore, the research design articulates the data that is required to conduct the desired research, the methods that will be used to collect and analyse this data and how this combined will answer the research questions.

The research design begins by explaining the empirical problem, which relates to the increasing complexities and uncertainties that are linked with urban areas. Emphasis is put on urbanisation, climate change and social polarisation among others that to different degrees challenges cities worldwide. These vulnerabilities and uncertainties have become a hot-topic among scholars, policy-makers and NGO's that search for the 'off the shelf' toolkit to ensure the well being of cities in the future, something we will look closer into in section 3.1. The empirical problem is being narrowed down when introducing the 100 Resilient Cities program as the newest and far most spread concept to somehow take care of these increasing vulnerabilities and uncertainties. It is however not so clear, how the ideas of urban resilience are to be translated into local settings and address local challenges. In other words, how urban resilience is actually practised in location-based instances.

Next up is the conceptual problem that relates to how the researchers can develop a framework in order to scientifically understand how cities within the programme takes the concept of resilience on board and institutionalise it. We will therefore develop a theoretical framework to understand, how the concept is institutionalised, including how planning practices are influenced, encompassing theories on translation processes and institutional change. Before the main research question is introduced, the methodological problem is explained as how the researchers can understand how local projects in Vejle are influenced by urban resilience. Here we acknowledge, that it is not certain that urban resilience reflects a particular image, or results in a spatial expression, like other travelling ideas throughout time, and therefore can prove to be difficult to recognise the concepts influence in open spaces.

Empirical Problem: Nowadays cities are challenged by complex problems related to economic development, social polarization, and climate change among others. In order to address them, or decrease their impacts on cities, systemic capacities and new practices are needed. In this context the Rockefeller Foundation launched ‘100 Resilient Cities’ as a programme promoting ‘resilience’ as the remedy for cities to deal with changes and uncertainties; “making cities prepared for both the expected and unexpected”. Cities like New York, Sydney, Paris, Nairobi and Kyoto are alongside Vejle (Denmark) and 94 other cities worldwide, member in the global programme; to enhance cooperation and knowledge sharing among them. While cities shows many similarities in terms of form and function, interestingly the faced problems and challenges are also similar but its capacity to solve them are arguably more unique, leading to question how local solutions, shared in a global network, are again translated and fitted in a new local setting to address local challenges		
Conceptual Problem: How can we develop a framework to understand the concept of urban resilience and its translation from global to local context?	Methodological Problem: How can we analyse the effects of urban resilience, and what the concept promotes, in planning practices in Vejle?	
Main Research Question: How is urban resilience, as a traveling idea, conceptualised by 100 Resilient Cities and translated into the local context of Vejle, and what are the impacts on planning practices and local projects?		
Sub-question I: (Global context)	Sub-question II: (Local context)	Sub-question III: (Spatial context)
How is ‘Urban Resilience’ conceptualised by 100 Resilient Cities and how is this network organised?	How is Urban Resilience , as a travelling idea, translated in to the local context of Vejle, and in this process, how are local institutions adapting to it?	How are local projects in Vejle reflecting the translation of Urban Resilience?
Connection to Theoretical Framework	Connection to Theoretical Framework	Connection to Theoretical Framework
Actor-network theory Resilience as a concept	Travelling ideas Translation model Institutional change (three pillars)	Cycle of ideas Traveling ideas
Method	Method	Method
Document Analysis Interviews Literature Review	Document Analysis Interviews	Document analysis Interviews
Data required	Data required	Data required
- 100RC Framework - 100RC organisational structure - 100RC publications; best practices, annual reports etc. - Materials from interview	- Vejle’s ‘Resilience Strategy’ - Vejle Municipal Plan - District plans - Plan strategy (Planstrategi) - 100RC publications	- Vejle ‘Resilience Strategy’, including Concrete actions - Development plan for Ny Rosborg - Plan for Fjordbyen

Figure 2.1. Research Design

The main research questions focuses on how the idea and concept of urban resilience, which is framed within the global 100RC network, is translated and institutionalised into the local context of Vejle, one of the member cities within the 100RC programme, and how it impacts the planning practices related to urban planning. This means, that the main research questions aims to understand how Vejle adapts and uses the concept of urban resilience, and how it potentially benefits the field of planning within the municipality. To divide the main research question into less widespread parts, three supporting sub research questions have been developed. The first relates to how the urban resilience is

used and conceptualised within 100RC. The intention is to develop an understanding of what it is, that the 100RC wants to provide for its member cities, and how the concept is understood compared to the definitions explored in the literature review. This will help us to understand, the 'resilient city' in its raw form, before analysing how its ideas are translated into the city of Vejle. In this case, we will be able to contrast urban resilience as portrayed by 100RC with how Vejle have adopted the term to fit its unique local setting. Afterwards focus moves into the transition phase where the concept is translated from the global context into the local context of Vejle and how institutions are adapting to this. The rationale here is to develop an understanding of what role the 100RC, as a global actor, has on the implementation of urban resilience into Vejle. This is expected to be sufficient in order to understand, what the concept brings along, or in a sense, how the concept is expected to benefit the municipality, in particular urban planning. However, to understand what the concept 'actually' brings along, the third sub research question will present two projects that Vejle has included within its Resilience Strategy, and are integrating different rationales behind this new idea. This analysis of concrete actions, understood as '*objects*' under the cycle of ideas and model of translation, will lead the analysis regarding how these 'projects' are promoting the travelling of the idea, and at the same time that promoting Vejle as part of this global network.

Theoretical Approach 3

The aim of this chapter is to develop a theoretical framework, working as our scientific base and 'blueprint' for the desired dissertation on urban resilience. The theoretical framework will serve as the frame of the research, determining how we are going to perceive and interpret data. It will be based upon a literature review of existing knowledge on the topic of resilience and relevant theories on how to understand how concepts are translated and implemented from different contexts to another. At first we will go through the selected theories, that we find relevant and useful to synthesise and build our own theoretical understanding and scientific base upon, which will be the objective of the last section in this chapter; section 3.5.

3.1 Resilience: The concept

The aim of this section is to look further into the concept of 'resilience', including its origin and evolution. The section will dig into how 'resilience' is scientifically conceptualised among scholars in different contexts. The goal is to develop a theoretical understanding of the concept, how its used and for what purposes.

"With the Resilience Strategy we are building a foundation for the coming generations and provides a city and a society which is prepared for tomorrow" [Vejle Municipality, 2016,p. 10]

The term resilience has gained increased publicity among medias and academia throughout the last couple of years [Davoudi et al., 2012, p. 299], [Coaffee and Lee, 2016, p. 17], [Stumpp, 2013,p. 164] and [Meerow et al., 2015, p. 39]. In 2009 there were two out of 400 presentations at the annual congress of 'Association of European Planning Schools' (AESOP) that featured the term 'resilience' within the presentations heading. Three years later in 2012 there were more than 30 presentation while in 2013 the congress was titled 'Planning for Resilient Cities and Regions' [Stumpp, 2013, p. 164]. Further added by [Stumpp, 2013, p. 164]; *"resilience seems to be the new buzzword in urban-regional matters*. However, while Resilience as a concept in urban planning has gained increased attention, its far from a new concept.

Resilience comes from the latin 'resilire' which means 'to leap back' [Coaffee and Lee, 2016, p. 20]. According to [Davoudi et al., 2012, p. 300] the concept was first used in physics to describe the characteristics of a spring; its stability and resistance to stress. In that connection, the term is used to describe how well materials can leap back to their original shape after being exposed to external pressure. Later in the 1960s the term entered the field of ecology where different scientists used and modified the term. However, its actual

use and break-through is broadly acknowledged to have emerged in 1973 when used by a Canadian theoretical ecologist named Crawford Stanley Holling in his studies of 'systems ecology' [Coaffee and Lee, 2016, p. 21] [Davoudi et al., 2012, p. 300]. In this context resilience was defined as *"a systems ability to absorb change and disturbance and still maintain the same relationship between populations or state variables"* [Coaffee and Lee, 2016, p. 21]. In Davoudi et al. [2012] the author adds that resilience as a concept was used in more than one way in Hollings studies, leading to a distinction between 'Engineering Resilience' and 'Ecological Resilience'. In engineering resilience, the concept was used to describe the *"ability of a system to return to an equilibrium or steady-state after a disturbance"* [Davoudi et al., 2012, p. 300]. In this matter, resilience relates to how fast the system could return to normal state or equilibrium, saying that; *"the faster the system bounces back, the more resilient it is"*. In 'Ecological Resilience' the emphasis is not on return-time but rather how much disturbance the system can take while still being able to keep its main functions. Here Coaffee and Lee [2016, p. 22] defines resilience as *"the magnitude of the disturbance than can be absorbed before the system changes structure"*. These two definitions underpins that resilience is not a clear-cut defined term. While the engineering use of resilience sees only one equilibrium which the system bounces back into after a disturbance, the ecological resilience acknowledges that multiple alternative stability domains are possible for a system to flip into.

Resilience across sectors

A group of interdisciplinary-minded ecologists wanted to extend Hollings conceptualisation of resilience into the 'social' by implementing the concept of resilience as a perspective for social-ecological system analyses. When doing so, the group added that resilience is more than robustness and resistance to change; *"It is also about the opportunities that disturbance opens up in terms of recombination of evolved structures and processes, renewal of the system and emergence of new trajectories (...) like a dynamic adaptive interplay between sustaining and developing with change"*. Within literature of social-ecological resilience the concept is defined as:

1. *the amount of disturbance a system can absorb and still remain within the same state or domain of attraction,*
2. *the degree to which the system is capable of self- organization (versus lack of organization, or organization forced by external factors), and*
3. *the degree to which the system can build and increase the capacity for learning and adaptation.* [Folke, 2006, p. 259]

Like the ecological resilience from Hollings early research, the socio-ecology framing of resilience is concerned on how to innovate, adapt and transform into new more desirable configurations. While in the engineerical science resilience has mainly been used to describe systems ability to bounce back into equilibrium, the term has later been used to describe characteristics of adaptability and change [Coaffee and Lee, 2016, p. 25]. This more evolutionary approach to resilience can be seen in light of the acknowledgement from social scientists, such as the above mentioned, that the world is constant and ever changing. As Majoor [2015, p. 257] explains; *"here the existence of equilibrium or state of normality has been replaced by the insight that the world is inherently complex, uncertain and unpredictable"*. Thus the thinking and practice of resilience has changed character;

embracing adaptation and change within the use of resilience - as a requirement in a world of volatility and uncertainty [Coaffee and Lee, 2016,p. 32].

The recognition of the world being in constant movement and change is the point of departure in Coaffee and Lee [2016] in which a quote from former President Obamas (US) Chief Resilience Officer says:

"While not geared toward any single shock or stress, resilience is part of a recognition that the future is going to be considerably different than the past. Resilience favours diversity. It favours more choices. It favours innovation. It favours social connectedness and cohesion. It must focus on the most vulnerable geography and the most vulnerable people, because how people fare in the event of a shock of some kind is extremely different based on whether they have the resources to bounce back." [Coaffee and Lee, 2016,p. 3]

The concept of resilience has evolved over the past years from a term to describe the characteristics of a spring to a more evolutionary approach incorporating aspects of persistence, responsiveness and adaptability. In Coaffee and Lee [2016] its described that resilience has evolved into a more evolutionary process; *"Here, in contrast to equilbirist models that seek a recovery to a pre-existing stable state, resilience is considered as an ongoing process that seeks to understand and adapt to the complexities of constant change"*. The authors continues on the dominance of the socio-ecological framing of resilience, the evolutionary usage, by describing how the concept of resilience can be visualised as a cyclical process.

The Resilience Cycle

In Coaffee and Lee [2016] its argued that the concept of resilience has been linked with or understood as a never-ending journey or a cyclical process with the overlapping stages; mitigation, preparedness, response and recovery.

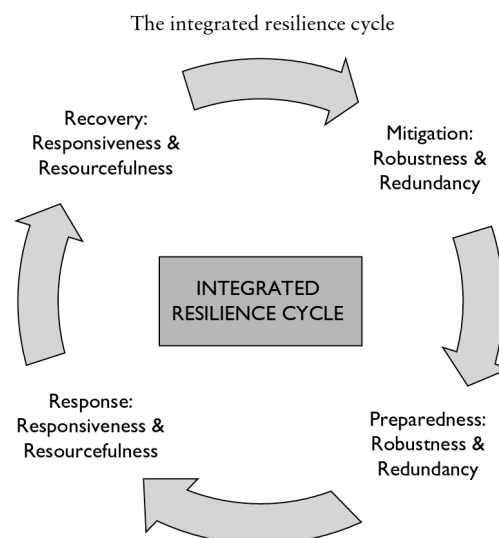


Figure 3.1. The Resilience Cycle [Coaffee and Lee, 2016, p.30]

The above figure shows this cyclical process of 'resilience'. In terms of mitigation, its about building capabilities to withstand future disruptive challenges. This means, that focus is on robustness and involves *"taking sustained actions to reduce or eliminate long-term risk to people and infrastructure from a range of stresses and their effects"*. Furthermore, *mitigation* as the initial step or phase in the cycle should be considered before an emergency has occurred. The next part in the cycle, *preparedness*, focuses on anticipating events and *"to put in a management regime to respond effectively to, and recover from, local disruptive challenges"* [Coaffee and Lee, 2016, p. 31]. The authors argue that while it is not possible to mitigate for every possible incident, taking certain actions before incidents happen can help to reduce the impact of it. The third step, *response*, involves actions that are taken during, and immediately after, the occurrence of an incident. In this step the focus is on minimising damage and disruption and strive to *"re-establish functionality as rapidly as possible"* [Coaffee and Lee, 2016, p. 32]. The fourth step or phase, *recovery*, is about returning the system to normality or a new normality. After short and long-term phases of rebuilding is finished and the systems returns to normality, the resilience cycle continues within the mitigation phase in order to ensure against future challenges.

Resilience theory or resilience thinking is by no means only used in ecological or engineering research. The term is increasingly applied in different fields such as natural disasters and risk management, climate change adaptation, international development, energy systems and planning among others [Meerow et al., 2015, p. 40].

Resilience entering the urban

As described, the use of resilience has a long evolution in different context. In terms of Urban Resilience, its increasing emergence in planning practice started shortly after the millennium [Coaffee and Lee, 2016, p. 51]. Different scholars such as [Meerow et al., 2015], [Coaffee and Lee, 2016] and [Vejle Municipality, 2016] uses the phrase 'urban resilience' as a metaphor for cities overall robustness. In [Meerow et al., 2015] the author has collected different definitions brought by different scholars;

- *"the ability of a system to adjust in the face of changing conditions"*
- *"the capacity of a city to rebound from destruction"*
- *"the ability ... to withstand a wide array of shocks and stresses"*
- *"the ability of a city to absorb disturbances and recover its functions after a disturbance"*
- *"the capacity to withstand and rebound from disruptive challenges"*
- *"the general capacity and ability of a community to withstand stress, survive, adapt and bounce back from a crisis or disaster and rapidly move on"*

This extract of used definitions on urban resilience again confirms the ambiguity of the concepts usage in different contexts. However, its clear that the concept has something to do with complex systems and their capacity to persist in times of uncertainty, disruption and change. In Meerow and Newell [2016] its explained that its no surprise that resilience as a concept has been applied in urban studies since cities are often perceived as highly complex systems. As highlighted by [Batty, 2008, p.769] cities are the perfect example of complex systems; *"Cities are the example par excellence of complex systems: emergent, far from equilibrium, requiring enormous energies to maintain themselves, displaying*

patterns of inequality spawned through agglomeration and intense competition for space, and saturated flow systems that use capacity in what appear to be barely sustainable but paradoxically resilient networks".

So far now it's outlined what resilience is all about. In terms of urban resilience, it's clear that the concept wants to bring in the understanding of cities as vulnerable complex systems where potential challenges and disturbances can be lurking around the corner. Resilience brings in the idea that change is inevitable and that cities must be able to persist and protect its key functions and in the mean time adapt to the changing context. In this sense, we understand resilience as a new understanding of planning, introducing ontological assumptions of the world as ever changing, and promotes that the discipline of planning ought to take this into consideration by enhancing cities adaptability and flexibility. It's however, blurred how resilience actually helps cities being better prepared for tomorrow. How can a not clearly defined concept as resilience help planners to understand complex systems as cities - and actually achieve that cities will *"absorb disturbances"*, *"rebound from destruction"*, *"withstand from disasters and rapidly move on"* or as Vejle, partner in 100RC puts it, *"make cities be prepared for tomorrow"*? [100 Resilient Cities, 2016b] and [Meerow et al., 2015]

Urban resilience in planning

As a short summary, resilience is a concept that has evolved from physics to describe the stability and resistance of materials, gained prominence in the field of ecology as a concept to measure ecosystems ability to persist and adapt to external shocks and since the millennium entered the field of urban studies as a 'remedy' to deal with the increasing uncertainties that cities in particular are vulnerable against. However, while urban resilience has become a desired political goal in itself Cote and Nightingale [2012], Vale [2013] 2014; Edwards [2009], Young Foundation [2010] Cabinet Office [2011], it's not exactly clear what resilience means and how it works, beyond the widespread understanding of being resilient is a good thing [Davoudi et al., 2012].

Being a resilient city is by MacKinnon [2015, p. 569] understood as a city that is able to *"respond to external sources of disturbance and maintain its basic functioning"*. Here it's clear that the 'resilient' aspect refers to responsiveness and the capacity to maintain basic functions. In Coaffee and Lee [2016] the author states that:

"The resilience turn in urban policy and practice has ushered in a greater requirement for foresight and preparedness. In this sense resilience is proactive and anticipatory, rather than reactive ... resilience brings together the components of the resilience cycle - response, recovery, mitigation and preparedness" [Coaffee and Lee, 2016, p.55]

In this quote emphasis is put on how resilience foregrounds risk prevalence and to plan for 'what if' events. The author continues by arguing that resilience within the urban context is about mapping the urban vulnerabilities, to plan for shocks and to enhance technical expertise within urban management, notably planning. In a more detailed sense the author highlights:

"Resilient cities are constructed to be strong and flexible rather than brittle and fragile [...] their lifeline systems of roads, utilities and other support facilities are designed to continue functioning in the face of rising water, high winds, shaking grounds and terrorist attacks" [Coaffee and Lee, 2016, p. 52]

As stated, the principles of resilience cities, or the building of resilience thinking into cities has achieved publicity and increased influence on planning strategies, there are however fewer attempts to link the 'Resilience' from a macro-level to structural or even physical changes. This has also led scholars to criticise the concept, mentioning it as; *too ambiguous and difficult to operationalize or measure* [Meerow and Newell, 2016, p. 5]. Furthermore, some scholars have expressed their concerns with the concept and its embodiment in planning disciplines and policy sector saying that it may lose meaning, ending up as a '*empty signifier*'. [Meerow and Newell, 2016, p. 5].

However, in 2013 Rockefeller Foundation created the 100 Resilient Cities programme and partnered up with ARUP to develop a framework to enhance resilience and ensure the growth of cities no matter the adversity. The scope is clear; building resilience into cities so they can survive, adapt and grow no matter what challenge or sudden disruption they face. The remedy as explained by 100RC is to:

"Building urban resilience requires looking at a city holistically: understanding the systems that make up the city and the inter dependencies and risks they may face. By strengthening the underlying fabric of a city and better understanding the potential shocks and stresses it may face, a city can improve its development trajectory and the well-being of its citizens." [100 Resilient Cities, 2018a]

These so-called 'invaluable lenses' which are to help cities understand their complexity and be prepared for tomorrow, can be regarded as an attempt to operationalise the ideas of resilience into an applicable tool to enhance resilience in cities. This tool, and how its applied, is what this research wants to analyse by digging deeper into how the concept is operationalised, institutionalised and how its configured within the local and spatial context of Vejle in Denmark and at last, how it matters. In this section we have summarised the history of 'resilience' from its initial uses in physics and ecology and how the concept has merged into the field of urban planning. We have learned, that what resilience aims to bring to planning is the acknowledgement that cities are, more than ever, vulnerable and exposed to challenges and disruptions, e.g. climate change and terrorist attacks etc., and in that sense, planning should be more proactive and anticipatory. In the next section we will look into globalisation processes and how the formation of global networks is connected hereto.

3.2 Globalisation and Networks

As 100 Resilient Cities [2018a] portrays, globalisation, climate change, and rapid urbanisation represents the three main trends that are defining the main global challenges and stresses that cities are facing nowadays. In this context, we understand that 100RC program and network it has been build on the base of globalising trends, which have made

possible the connection among different actors around the world, and had "shorten" the physical distance between them. Therefor, we present a brief section in order to understand what globalisation implies.

The meanings and definitions of globalisation, as well as its conceptualisations are diverse, frequently contradictory [Tait and Jensen, 2007], and exist disagreement about how to define what has been happen and its implications [Teeple, 2000]. As Beck [2015] presents, globalisation is a multidimensional concept that has been widely used with success specially among political discourse, but its meanings and definitions remain foggy and unclear.

In general terms, globalisation can be defined as the spread out answer to the contradiction between the constant expanding capital, and its national political and social formations [Teeple, 2000]. In this sense theses two concepts are intrinsically connected, on the one hand the expansion and sovereignty of capitalism, related to supremacy of economics over politics; corporate demands over policy; private over public interests [Teeple, 2000], and on the other the new and blurry definitions of territory triggered by the rise of new technologies of communication, which at the same time unchain the emergence of new spaces of interactions [Beck, 2015]. Until the 1970s, the growing expansion of capital was always connected with a particular territory, with particular historic roots and character. Afterwards, capital expanded without national or geographical definitions, where the ownership of it corresponded less and less with national boundaries [Teeple, 2000]. As Smith [2002] synthesised, until late 1970's, most consumer commodities were produced in one national economy considering its consumption at the same place or for export to other national markets. By the 1990's, that model remains obsolete, where specific and definitive place of production for specific commodities became hardly to identify. *"The old language of economic geography o longer made sense"* [Smith, 2002, p.433].

As Teeple [2000] introduces, the present era is a transnational one, where world nation states and national markets are evolving and have been transformed into one world market with growing economic activity ruled by few hundred corporations. The transitions from welfare state, and its 'under control' structure, towards new open and liberal systems based on large-scale production and capital, defined new political actors in a transnational level [Beck, 2015].

Dimensions of Globalisation

As it was mentioned above, globalisation is characterised by being a complex and multidimensional concept, where different variables are interacting and influencing process within a world scale. Beck [2015] recognised five different dimensions that explained the scale of globalisation:

Global information network: refers to the influence of new technologies such as internet and satellite communication, which allow the transferring of information crossing political boundaries.

Ecological globalisation: refers to the expansion of impacts that isolate actions are generating not only over closed context, but rather over the whole world, which has defined the global ecological crisis and asked for sustainable development.

Economic globalisation: regards the new and growing creation of a market that not longer belongs to concrete political administrations and therefor it is out of the control of national

states. But rather used national economies without offering structures for regulation process.

Globalised labour cooperation or production: refers to the externalisation of labour market and competition facilitated by the new technologies of communication. Labour market not longer respond to political and territorial administrations, telecommunications have removed what was at the basis of the labour system: the need of people to work together at certain place in order to produce services or goods.

Cultural globalisation: refers to trends of (pop) cultural expression when crossing borders of politic territories, making blurry what belong to where.

Globalisation and Cities - Space

As Smith [2002] portrays, one of the key elements regarding global urbanism can be traced back to the increasingly global scale of production. This it has leaded most of the debates around globalisation in relation to finance capital and cultural image and globalised commodity capital. These three elements are not new element on the world [Tait and Jensen, 2007].

Among different perspectives, for some, globalisation has played a key role by bringing the homogenisation of places. In this sense, similar procedures and standardised ways of production of the built environment lead to produce similarity in the urban form [Tait and Jensen, 2007]. For example, it is possible to see similar strategies world-wide regarding the renovation of water-fronts of obsolete industrial harbour cities. Under similar conditions, this is one common way that triggers modernisation of their cities. For others, globalisation produce similarities, however, distinct differences in urban form. In this sense, Sassen [1992], argues that place, understood as urban form coined as 'global city', is critical in both shaping and being shaped by patterns of globalisation, and, within this context, place plays a significant role in managing flows of people and capital. As Smith [2002] argue based on Sassen [1992, 1998, 2000], local places played a key role in the new globalism. The focus on urban places in a globalised world highlights the rapidly declining significance of national economy, while at the same time persisting on the idea that globalisation takes place through specific economic and social complexes settled in specific places [Smith, 2002]. The global cities emerged in the 1970's, in a context of dramatic financial expansion, and when foreign direct investments were dominating, shifting from investments on production towards investment capital moving into and between capital markets [Smith, 2002]. As Sassen [1992] portrayed, the balance of economic power shifted "from production places, such Detroit and Manchester, to centres of finance and highly specialised services" [Sassen, 1992, p.325]. Even though, the global city that presents some similarities in terms of the economic competition in the global economy, which generates wealth and poverty, and attraction for immigrant labour, is not defining every place, and other cities do not presents the same characteristics [Tait and Jensen, 2007]. As [Czarniawska and Joerges, 1996, p.22] portrays, *"It would be safe to guess that actually the majority of the inhabitants of the globe are not connected into this net, which does not mean that they are not influenced by it, directly or indirectly"*.

In this context, globalisation is not only a definitive homogenising force, but also a trigger for differences. This raises the extended debate about the inherent tensions between homogenisation and heterogenisation, and the role of places defining each of them. As

Tait and Jensen [2007] argued based on [Robertson, 1995; Czarniawska, 2002], the term of **‘glocalization’** has been used to define and describe how homogenising processes trigger by globalisation are translated and reflected differently in diverse localities. In other words, global ideas and local practices find the point of connection and are able to co-exists, which at the same time it can rise the complexity of importing concepts and ideas into varied places [Tait and Jensen, 2007].

In this section, we have learned how globalisation processes have created better conditions for ideas and practices to move between localities. The next section will look further into, how ideas and practices actually move between localities by introducing the concept of ‘travelling ideas’.

3.3 Travelling ideas

In terms of urban planning and management, and especially in relation to urban form, the field has coined ideas and models covering a large vary of conceptualisation e.g. from garden city, compact city, the creative city, the smart city, policentricity, the compact city, the sustainable city, among others. The natural evolution on this matter is not new, since ideas evolve and new layers are added over previews rationales, but the way that these conceptualisations and models are disseminated, and therefore influencing practice on divers locations is arguable a newer phenomenon [Tait and Jensen, 2007]. In this sense, different processes of globalisation have triggered and reinforce the way that new ideas are transferred from different localities covering a large range of places within global context [Borja et al., 1997]. In this context, this research is assuming that resilience and urban resilience regards an idea that travels from one context to another. Comparable to concepts like "smart city" or "sustainable city", the idea of "resilient city" is also moving in a global network influencing practice and conceptualisations. In this context, we will unfold the concept of travel ideas to understand how ideas move from one location to another.

The origin of ideas

From a wider perspective, the general discussion of globalisation represents the broader environment and context in which ideas move and travel, but it does not engage the specific means that ideas used to travel. As Tait and Jensen [2007] highlights, all ideas appear within a specific context, and all ideas come from previous inspirations, having a context dependency on time and space [Czarniawska and Joerges, 1996]. An interesting question to look at regards why some ideas arise and fall away, while others remain hold, become conceptualised into models and trigger actions. As Czarniawska and Joerges [1996] portrayed, the origin of ideas is hard to trace and is often unknown, and its explanation of their origin is often connected to rhetorical emergence or strategic. Often it represents an attempt to mythologising the beginning of an important idea [Tait and Jensen, 2007]. As [Czarniawska and Joerges, 1996] states: *"When the translation of ideas into action is well advanced, the actors involved feel a need to mythologise by dramatising origins"* [Czarniawska and Joerges, 1996, p.26]. In this process, stories are meant and told to present either the fact that specific ideas emerged in connection to specific problems that need to be solved, or move forward an organisation that seems stagnated. In other words, stories about the origin of ideas focus on the stress, not in the importance of the original

idea itself, but the relevance of the idea in responding to particular needs and requirements [Tait and Jensen, 2007]. This conceptualisation does not deny the possibility of radical ideas or models, but does argue for the need to connect them with the social environment where they will be valuable. Therefore, the key issue is the *effect* of a model or idea, and here, a key element of this idea is the capacity of it to be linked with a specific and concrete problem or situation [Tait and Jensen, 2007].

Actor-Network theory

Actor-Network theory (ANT) emerge as a critique of sociological analysis of science, and since then has helped to describe practices in vary fields like politics, economics, and many other fields including planning [Tait and Jensen, 2007]. In order to understand 'the social', Latour [2005] argues that is necessary to move from the idea of measured it, and return to the essence of the word, which means connections or assembles. In this context, it is pertinent to ask how things, people and ideas become connected and assembled in extended units. Here is where ANT regards a process for answering this question, therefore is not a theory of the social, but a theory about how to study the social [Latour, 2005; Czarniawska, 2006]. In other words, ANT help to understand interactions between humans and non-humans actors, the way that they mediate their interests within a network, and their consecutive constitution of actions [Demir and Fjellström, 2012].

Three main features of Actor-Network Theory (ANT) are synthesised by Tait and Jensen [2007], which are relevant when understanding travelling ideas.

- First, it is central focused on process and how objects and concept come into being and fade away, rather than perceive them as stable. If they appear stable, from actor-network perspective they are perceived as 'black boxes' and required unpacking.
- Second, actor-network theory aims to define all materials that are used to constitute networks, including the human, non-human, physical, textual, and so on. In this context, textual and humans resources may play a key role when translating concepts from one place to another, but at the same time, other resources (like physical design of development) may also help to translate these concepts.
- Third, actor-network theory views space as created out from relations between things, rather than an abstract container. This understanding can help to see how some ideas may have influence over long distances due to the strong and intense connections between actors, in contrast to other ideas that have little influence due to weakly elaborated nets.

When conceptualising the diverse processes of creating and re-elaborating different sets of relations, actor-network theory use different set of metaphors, where two fundamental and most important are the 'actor' and the 'network' [Tait and Jensen, 2007]. Networks, for ANT perspective, are not stable systems of connections and nodes, but rather a metaphor for variable relations and links between actors and objects. In the same way, actors are not necessarily or strictly human actors, but rather anything that helps to change and modify sets of connections, or create new ones. In this sense, a building can be understood and serve as an actor in certain circumstances [Tait and Jensen, 2007]. Latour [1996] defined an 'actor' in ANT semiotic definition as an actant, an actant is "something that acts or to which activity is granted by others [...] An actant can literally be anything provided

it is granted to be the source of an action” [Latour, 1996, p.373]. Under this perspective, ‘actors’ and ‘networks’ are closely defined, therefore to define an specific actor, also means to define the specific network that makes it an actor.

Czarniawska and Joerges [1996] presents the metaphor of micro and macro actors, connecting them with the metaphor of global and local. In this sense, the authors pointed out that macro-actors does not exists, but rather a large set of micro-actors who associate with other micro-actors creating a large network. In this context, "global economy" could be seen as many local economies that have built an strong and large scale network.

Following with similar metaphor, Czarniawska and Joerges [1996] introduced the term ‘translocal’ referring to the notion of *localised time/space* and *globalised time/space*, specially when they build a net interconnecting localised time/space. In this context, the author presents metaphors to argue that global and local are not irreducible dichotomy, but a continuum. Each locality and its time is defined by a sequence of moments at unique place. In a global network, due to new technologies of information, it is possible to get access into different "localised time/space", creating a ‘momentary space’ or ‘co-temporary space’. In this sense, the global time represent a large connection of places that are permanently accessible [Czarniawska and Joerges, 1996].

Within this context, Tait and Jensen [2007] highlights that the most important metaphor developed from this theory, which remains useful to follow and trace the paths in which concepts, models and ideas become adopted in different contexts and places, it is the notion of ‘translation’. Czarniawska and Joerges [1996] argues that through this process, ideas become quasi-objects, crossing barriers of local time and moving towards trans-local paths, they become dis-embedded’. As a following step, quasi-objectify ideas land in different localities becoming ‘re-embedded’, transformed in actions, and institutionalised, following by the creation of new generation of ideas.

Translating model - The travel of ideas

Ideas themselves do not travel if they are just stationed on books or libraries. The travel of ideas and its effects are more related to the action of numerous actors to import, change and embed the idea in different context [Tait and Jensen, 2007]. For Latour and other actor-network theorists, this process has been termed “translation” [Latour, 1986a; Callon, 1986]. ANT reads "translations" as meta-language that allows the movement of ideas from one locus to another. This translation vary as much as number of frames that are used and translating [Latour, 1996]. This process is not only a linguistic one, but one that serves to move ideas, change them, reconfigure them and while doing so, change the relations and capacities of the actors involved in this process [Tait and Jensen, 2007]. As Demir and Fjellström [2012] argued based on Scandinavian Institutionlaism, when technologies, practices or ideas travel a cross boundaries, some contextual elements are eliminated or lost, and others from the new context are added, helping for the rendering of new forms within a new context [Czarniawska and Sevón, 1996].

Drawing on Callon [1986] four stages of translation have been defined, and in words of [Tait and Jensen, 2007, p.112], perhaps the most significant description of the mechanics of translation:

- Problematisation: relates to the need for an idea to match with certain problems faced by different actors at the local level.
- Interesement: relates to the stage in the process of stabilising and making clear the identities of different actors who are, and will be “enrolled” into the network.
- Enrolment: relates to the stage of actual engagement with the identified actors. In this sense, different strategies would be used by actors in order to enlist one another in different ways, including the transformation of attached interests.
- Mobilisation: denotes the stage in the process when one actor starts to speak for others, or in name of the network.

[Callon, 1986; Tait and Jensen, 2007; Nicolaisen et al., 2017]

By reaching the last stage indicates that the actor-network has cohered and the different elements of the network are coordinated. In fact, as [Tait and Jensen, 2007] point it out, when key individuals speaks for the network encourages the dissemination of ideas and it fosters action. This is important in terms of the translation of ideas and concepts across space, as it allows actions to be determined at a distance [Tait and Jensen, 2007]. In other words, The ‘entrepreneurial’ mode focused on action may help and allow the idea and model to travel, as it moves from existing structures [Law, 1994; Tait and Jensen, 2007].

As Czarniawska and Joerges [1996] describe, ideas can turn into objects by process of translation characterised by *"turning them into linguistic artefacts by a repetitive use in an unchanged form, as in the case of labels, metaphors, platitudes [...] This is an attempt at a reproduction, a mechanical translation, intended to minimise displacement effects."* [Czarniawska and Joerges, 1996, p.32]. In this context, *Local labelling* plays a key role in cases where ideas must to be inserted into existing action patterns, as they can reflect more general and abstract categorisations, for example, models of decentralisation. Another way that ideas turn in to objects is trough process of design; as Czarniawska and Joerges [1996] mention, by establishing and putting images into a graphic form.

Czarniawska and Sevón [1996] perceives translation model as ‘device’ that is capable to mediate between local and global time/space, so ‘global’ remains sense and at the same time it does not represent a metaphysical idea of something beyond or above the localised time/space. In this sense, translation it can be seen as a ‘device’ to understand how ideas travel. As Czarniawska and Sevón [1996] portrays, ‘translation model’ can be useful to conciliate that a text is also an object-like, and yet it can be read and interpreted in many different ways. In this context, this model also answer the question about the energy required for travelling: it is the people, understood as user or creators, who energise an idea each time they translate it for their own or ether’s use. In this sense, *"ideas left in books left on shelves do not travel, and no amount of satiation will help to diffuse ideas from closed libraries"* [Czarniawska and Sevón, 1996, p.23]. They required the social activation of it by giving meaning and interpretation. Here, it is important to highlight that the meaning of ‘translation’ transcends the linguistic interpretation, it regards *"displacement, drift, invention, mediation, creation of new links that did not exists before and modifies in part the two agents"* [Latour, 1993, p.6], the one who translated and what is translated [Czarniawska and Joerges, 1996]. This process, that can happens among two people, it’s speed up, made continuous and magnified by globalising processes and development of new technologies. The following figure shows the cycle of ideas when translated into objects,

actions and by repetition, translated into institutions. It also show the process of travelling from one location to another through larger process of translation.

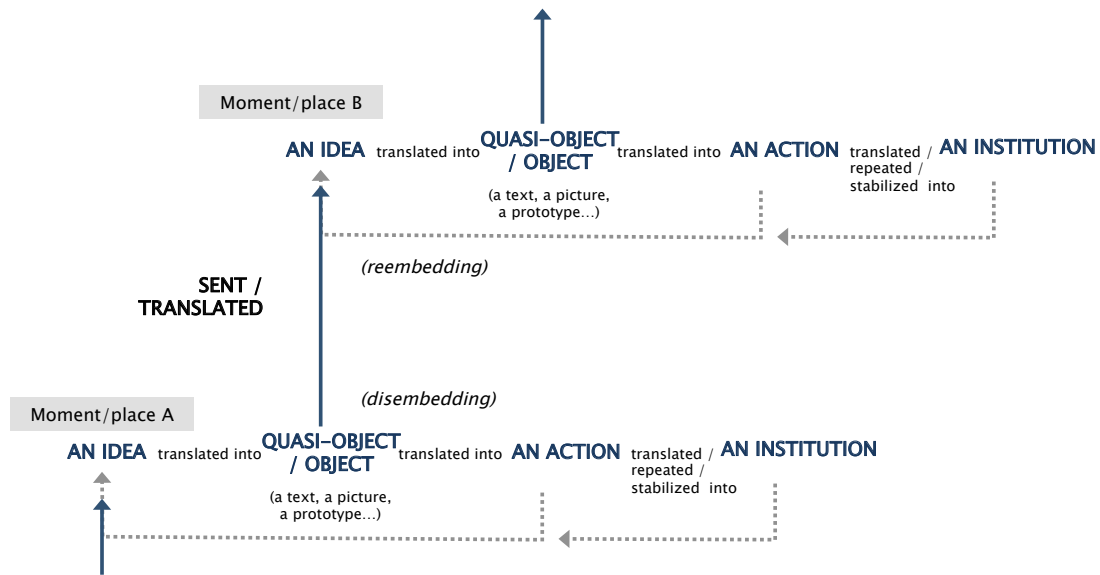


Figure 3.2. Process of translation and travel of ideas. [Czarniawska and Joerges, 1996, p.26]

As Tait and Jensen [2007] argues, the four stages of translation outlined by Callon [1986] gives only a general understanding of the forms of movements required in order to embrace ideas into relationships that permits them to travel. This process required further consideration regarding the elements that constitute the actor-network to evaluate how ideas are translated into actions at a distance. As Czarniawska and Sevón [1996] explains, the successful dissemination of a model demand relations to be created in different locations, and by objectifying the model, these ideas can enter new contexts, becoming 'quasi-objects', and then 'objects', and then turning into ideas again. For Callon [1991], the medium that forms these networks is base on "**intermediaries**". They serve both to describe the networks where they are insert and to compose the network, and can be any object that orders and is configure the network. Four types of intermediaries has been identified: texts, technical objects, embodied practices, and money [Callon, 1991; Tait and Jensen, 2007]. The role of intermediaries is fairly important because of its ability to transport sets of relations from one location to another, which is a consequence of its durability [Tait and Jensen, 2007]. As Latour [1987, 1986b] has described, they are "immutable mobiles", in this way, intermediaries such as documents, plans, books and professionalised practice help to transfer and disseminate models of development to different locations [Tait and Jensen, 2007, p.113].

Fashion/Institution

It is in this mix of humans/technologies networks where more complex translation mechanisms take place, named as 'fashion' and 'institutionalisation' [Czarniawska and Sevón, 1996]. Even though fashion as a phenomenon has been criticised by setting individuals apart from the responsibility to shape cultures, and neglected in social theory partly due to the dominating masculine culture of the social science, for Czarniawska and

Sevón [1996] the metaphorical and literal understanding of fashion can help to understand the complex process of development in organisations. This concept can be seen as complement towards institutionalisation. Although fashionability and institutionalisation can be seen as opposite due to its temporality and stability, by looking at them as interconnected and interdependent it is possible to challenge the the institutionalised order of things [Czarniawska and Joerges, 1996]. In other words, the conceptualisation of fashion seems to question established institutions, therefore new practices can disposed of or revitalised the existing institutional other [Czarniawska and Joerges, 1996].

As Czarniawska and Joerges [1996] presents, it is pertinent to ask what type of ideas become 'fashionable' and which remain for ever local? As the authors argues, on the way to becoming institutionalised practice, ideas are modified and turned around, and in this process they gain attributes that makes them 'quasi-objects'. When translators are not able to find equal translations, by necessity they find equivalent meanings, which brings variations and distinction from the original idea making it take multiple forms [Demir and Fjellström, 2012, p.372]. This process also brings the corruption or challenge of previous practices and the promote the emergence of new [Demir and Fjellström, 2012, p.372]. As we pointed out above based on Callon [1986]; Tait and Jensen [2007], strong ideas are those that matches the problem that is faced at that specific context. In this regards, [Czarniawska and Sevón, 1996, p.25] adds that: *"The perceived attributes of an idea, the perceived characteristics of a problem and the match between them are all created, negotiated or imposed during the collective translation process"*. Therefor, the process of translation should be the focus of concern, and not only the priorities of ideas.

In this section we have build a theoretical understanding of how ideas are travelling between actors and locations and in this process, how ideas are translated in order to fit within the local context. We believe, that in this process of translation and embedding an idea in a local context, its key rationalised will be maintained. In this sense, we will use the above theories to analyse how the idea of resilience is translated and embedded in Vejle.

3.4 Institutions & Institutional Change

After introducing a brief presentation regarding the way that ideas are formed and how they travel from one location to another, – crossing stages and processes of dis-embedding and re-embedding, translation, objectification, transformation into actions, and becoming ideas again, all elements that foster the travel of ideas. It is pertinent to look at the way that these new ideas are integrated into practice by asking how this new rationale are being institutionalised; how resilience in our case triggers institutional change and changes in planning practices.

From an Scandinavian Institutionalism perspective, practise and human interactions are shaped by institutional pressures, understanding them as set of norms, rules, and values that define the way of doing things [Demir and Fjellström, 2012]. This perspective *"treat construction and deconstruction of institutions as the most fruitful way of conceptualising social order"* [Czarniawska and Joerges, 1996, p.3]. Draw upon Scott [2001], institutional theory focuses on the deeper aspect that ruled social structures. It considers the process by which structures - defined as: rules; norms; schemes; and routines - become establish

as authoritative guidelines for social behaviour.

Scott [2001] defines institutions as multifaceted, durable structure, built up of symbolic elements, social interactions, and material resources. Institutions as social structures are characterised by its high degree of adaptations to changing context and remaining stable, in other words, they attained high degree of resilience. Are composed of cultural-cognitive, normative and regulative elements, that together with related actions and resources, proportion stability and meaning to social life. These elements are the solid ground of institutional structures that provide flexibility to resist changes. They are transmitted by different types of carries, including: Symbolic systems, relational systems, routines, and artefacts. As Scott [2001] pointed out, rules norms, and meanings emerge in interaction, and they are maintained and changed by human behaviour. In other words, institutions dissolve if they are only represented in verbal denominations and in physical objects, but not in human/social interactions. **The three pillars of institutions**

The following table synthesised by Scott [2001] presents the three systems/elements – pillars – that defined and composed institutions. These three pillars build and support institutions. At the same time, this table is summarised some of the main principal dimensions that have characterised one element from others.

	<i>Pillar</i>		
	<i>Regulative</i>	<i>Normative</i>	<i>Cultural-Cognitive</i>
Basis of compliance	Expedience	Social obligation	Taken-for-grantedness Shared understanding
Basis of order	Regulative rules	Binding expectations	Constitutive schema
Mechanisms	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules Laws Sanctions	Certification Accreditation	Common beliefs Shared logics of action
Basis of legitimacy	Legally sanctioned	Morally governed	Comprehensible Recognizable Culturally supported

Figure 3.3. Three Pillars of Institutions [Scott, 2001, p.52]

The regulative: It define the way how society must behave, using laws and rules that are supported by sanctions. In a broader sense, institutions constrain and regularised behaviour. Regulatory process considers the ability to define rules, inspect others conformity to them, and necessarily, operate sanctions –rewards or punishments– in order to influence future behaviour. These processes can operate within informal setting –shaming or shunning activities– or established and formalised settings, involving specialised actors –such as police or courts– [Scott, 2001]. By setting explicit rules and referees, it defines individuals and organisations behaviour, which will contribute to preserve order. In this sense, it has a instrumentality logic, where force, fear and expedience are some of the core ingredients, where sometimes the will of powerful actors are imposed over others by the use of authority to define rules and sanctions [Scott, 2001].

The normative: It define the way how society ought to behave, using values, norms, and roles. These are related and formed by the expectations of particular individuals or social positions. They introduce a prescriptive, evaluative, and obligatory dimensions into social life. Here [Scott, 2001, p.54-55] define: *Values* as conceptions of the preferred or the desirable, which mixed with definition of standards to which behaviour can be compared and assessed. *Norms* defined how this should be done, and determine legitimate means to pursue important aims. In this sense, normative system define goals or objective, but also define ways to pursue them, such as rules specifying how to play a game or conceptions of fair business practice. Some values and norms are applicable to all members of a society, but others apply to specific types of actors or positions. Here, the *role*, understood as appropriate goals and activities for specific individuals or social positions, defined how specific actors are supposed to behave. Through formal and informal mechanisms, norms and values empower and enable social action, but at the same time confer rights and responsibilities [Scott, 2001].

The cultural-cognitive: It is related to the way that individuals and society usually behave. It looks at the way that behaviour is shaped according to shared conceptions that constitute the nature of social reality, frames, and scopes through which meaning is made. Under this cognitive paradigm, the individual representation of its environment plays a key role shaping creatures' behave and acts (Scott [2001]). In this sense, symbols –words, signs, gestures– have influence over the meaning we give to objects and activities. These meanings are result of interactions, and are maintained and transformed while they are used to make sense of actions. In this context, to understand actions, it is necessary to take into account the actor's subjective interpretation of them [Scott, 2001]. Under this perspective, accordance happen in different circumstances because different types of actions are inconceivable, and routines are followed because "*it is the way we do these things*" [Scott, 2001, p.57]. "*A cultural-cognitive conception of institutions stresses the central role played by the socially mediated construction of a common frame-work of meaning*" [Scott, 2001, p.58].

All these three pillars are the basis that define the way that organisations and society interact and behave, reacting to its context. In order to keep them working in the social environment, social acceptability and credibility are required to persists. Here different sociologist use the concept of *legitimacy* to refer to conditions that keep these structures. Scott [2001] based on define *Legitimacy* as the "*generalised perception or assumption that the actions of an entity are desirable, or appropriate within some social constructed system of norms, values, beliefs and definitions*" [Scott, 2001, p.59]. Here, the social constructed systems can be understood as institutional frameworks, where each pillar provides a basis for legitimacy. As argued in Scott [2001, p.59] legitimating explains the institutional order by assigning cognitive validity to its materialised meanings. The three pillars have related but differentiated bases of legitimacy. The regulatory accent is on conformity to rules, where relevant legal or quasi-legal requirements define the operation of legitimate organisations. A normative definition stresses a profound moral base for judging legitimacy, which are related to internalised controls and future intrinsic and extrinsic rewards. A cultural cognitive draw attention to legitimacy that comes from accepting shared frame of definition of situations. It regards the deepest level, because it is based on *preconscious, take-for-granted understandings* [Scott, 2001, p.61].

Carriers and levels

Institutions are transmitted on various conveyances, representing different *carriers* that vary during the process of transmitting their message. These carriers include Symbolic systems, relational systems, routines, and artefacts, from ANT-perspective this can be understood as *intermediaries* that transmit the established institutions within the network. At the same time, institutions work, run and operate at different levels, from world system to localised interpersonal interactions and relations. The following table presented by Scott [2001], synthesises the different carries that institutions are transmitted.

Carriers	Pillars		
	Regulative	Normative	Cultural-Cognitive
Symbolic systems	Rules, Laws	Values, Expectations	Categories, Typifications, Schema
Relational systems	Governance systems, Power systems	Regimes, Authority systems	Structural isomorphism, Identities
Routines	Protocols, Standard operating procedures	Jobs, Roles, Obedience to duty	Scripts
Artifacts	Objects complying with mandated specifications	Objects meeting conventions, standards	Objects possessing symbolic value

Figure 3.4. Pillars & Carriers [Scott, 2001, p.77]

Institutional Change

In order to understand how institutions changes, we will start understanding what keep and reinforce certain institutions to persists. In relation to the patterns of how institutions evolve, different scholars have focused on two modes: Punctuated equilibrium [Baumgartner and Jones, 2010] and gradual changes [Mahoney and Thelen, 2010; Campbell, 2004]. Punctual equilibrium focuses and deals with rapid and unexpected changes –e.g. rapid changes required in security procedures after terrorist attacks– followed by resultant equilibrium. Gradual change focuses at modification that are progressive on time.

Current institutions tend to reproduce and persist due to *Path dependency*, understood as the way that institutional solutions lead to a restricted set of possible new institutions North [1990]. These processes are reinforces by *positive feed-backs*, described as different mechanisms that empower specific institutions to persists, and follow the same path. This can take place by re-inforce the attractiveness of staying in the same route, or by re-inforce the persistence of particular type of institution. As de Morais et al. [2015] synthesised base on [Arthur, 1994; North, 1990; Pierson, 2004] path dependence mechanism are defined by:

- High set up cost: creating new institutions and changes often requires considerable set-up costs.

- Learning effects: once individuals invest time and effort in learning to act within a frame of rules, they become reluctant to other options.
 - Coordination effects: actors will act in certain way if they fit well with the actions of others that have adopted the same options
 - Adaptive expectations: closely related with the previous one, it regards the adaptation of individual actions in light of expected actions of other actors.
- [de Morais et al., 2015, p.156].

According to de Morais et al. [2015]; Pierson [2004], there are some usual social processes in politics that created the conditions for positive feed-backs mechanisms to operate, named as: *collective actions* – it refers to what one gets in relation to what others do, and on the achieving mobilisation; *Institutional development* – regards a complex process where many balance are possible and required fostering new learning processes, co-ordinations, and adaptations; *social interpretation* – actors accept reinforcing information, and neglect dis-conforming facts, changing foundational perceptions is not an easy task [Pierson, 2004; North, 1990]; *power asymmetries* – regards the fact that strong actors imposing rules over others, therefore allows them to use power to increasingly adapt rules in their favour.

How do Institutions change?

Even though institutions and its mechanisms serve social behaviour by providing stability and order, they also experience change, in both incremental or revolutionary processes [Scott, 2001]. In this sense, the understanding of institutions must include not only them as state of existing social orders, but also as process that considers a course of institutionalisation and de-institutionalisation [Scott, 2001]. Discontinuity and change takes place when new order interrupt mechanisms that reinforced path dependency [de Morais et al., 2015; Pierson, 2004], or the appearance of new conditions that motivate actor to change institutions – new perceived problems that require adaptation, or recognised tensions between institutions and actor seek ways to accommodate them together [de Morais et al., 2015; Campbell, 2004]. Institutions maintain gradually evolving within a process that considers stability and change strongly related [Mahoney and Thelen, 2010]. As de Morais et al. [2015] synthesised, changes can be fostered by *exogenous factors* – understood as external shocks such as wars or economic crisis, which are not that frequent and normally associated with model of punctuated equilibrium; and *endogenous factors* – understood as changes that are trigger within the context where institutions are embedded, and producing gradual transformations on institutions [Campbell, 2004].

In relation to conditions for change Mahoney and Thelen [2010] suggests that exists specific circumstances that create the space for institutional change. On the one hand, shifting in *power balance* or existing *power imbalance* among actors can trigger and create the conditions for institutional change [Mahoney and Thelen, 2010]. On the other hand, *deficiency in compliance* of specific set of rules, norms or values can trigger gradual changes on behaviour, due to perceived tensions between institutions that generates an initial change, and which grows after new actors follow the new behaviour [Mahoney and Thelen, 2010; de Morais et al., 2015]. Here de Morais et al. [2015] based on Mahoney and Thelen [2010] highlights that compliance coupled with power are key elements in the explanation of institutional changes. When problems of interpretation regarding rules emerge, followed by lack of compliance, actors tend to develop new set of rules [de Morais et al., 2015]. Here

uncertainty of significance, and application and enforcement of rules leads for modifications that can later also reshape power distribution [de Morais et al., 2015].

Changes induce by actors will emerge embedded in existing institutions, where previous mechanisms of path dependency will influence the set of different options available [de Morais et al., 2015; Campbell, 2004]. Campbell [2004] propose a further differentiation of two sub-categories in order to explain the way that individual trigger change, named as *bricolage* – when actors acknowledge actual institutions in a different way, reorganising it in a new form; and *translation* – when actors translate and import new ideas from somewhere else into the local context/reality by mixing new institutions with existing ones. In both cases, the institutional innovations have to set properly in relation to existing institutions in order to survive, and therefore, will generate a path-dependant change [de Morais et al., 2015].

When changes are framed in a certain way that are able to recognise and highlight the material benefits of it, in relation and compliance with public will, institutional innovations have more chances to survive. At the same time, another important fact regards the access institutional entrepreneurs have to power resources such as financial resources, technology, decision makers, and social connection in order to keep the new institutions implemented [de Morais et al., 2015; Campbell, 2004].

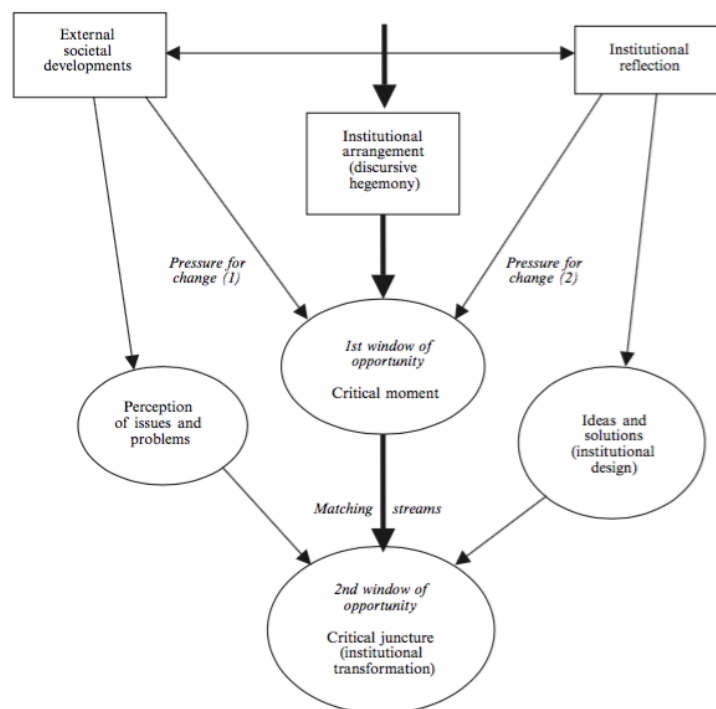


Figure 3.5. Model of Institutional Change. [Buitelaar et al., 2007, p.897]

As Buitelaar et al. [2007] synthesised based on Burch et al. [2003], "when there is sufficient pressure, whether internally or externally driven, a 'critical moment' for change arrives. Existing institutional structures become questioned and emerge on the agenda. Existing institutional structures become questioned and emerge on the agenda. There is scope for internal as well as external actors to jockey for new positions. If the opportunity is grasped

and changes are realised, the critical moment turns into a critical juncture encompassing a break with past patterns, inducing the overhaul of 'discursive hegemonies' through which institutional transformations may occur" [Buitelaar et al., 2007, p.896].

In this section, we have looked upon how institutions are constructed, *the three pillars*, and how processes of institutional change can occur. This theoretical understanding will be used in the theoretical framework, which we apply for in the case of Vejle to understand how Vejle experiences institutional change, triggered by the import and translation of Urban Resilience. In the next section, we will introduce the theoretical framework, build upon the theories and literature on relevant topics we have reviewed.

3.5 Theoretical Framework

In this section, the different theories described above will be presented in relation to our understanding of the research. They will be the lenses that we have recognised as key elements when looking and scoping the research problem. In consequence, these set of theories, and theoretical framework will lead the process of analysis. The following figure 5.1 is presenting the relation between different theories and how they will help to understand the research problem in relation to the three different levels of analysis: Global, Local, and spatial context.

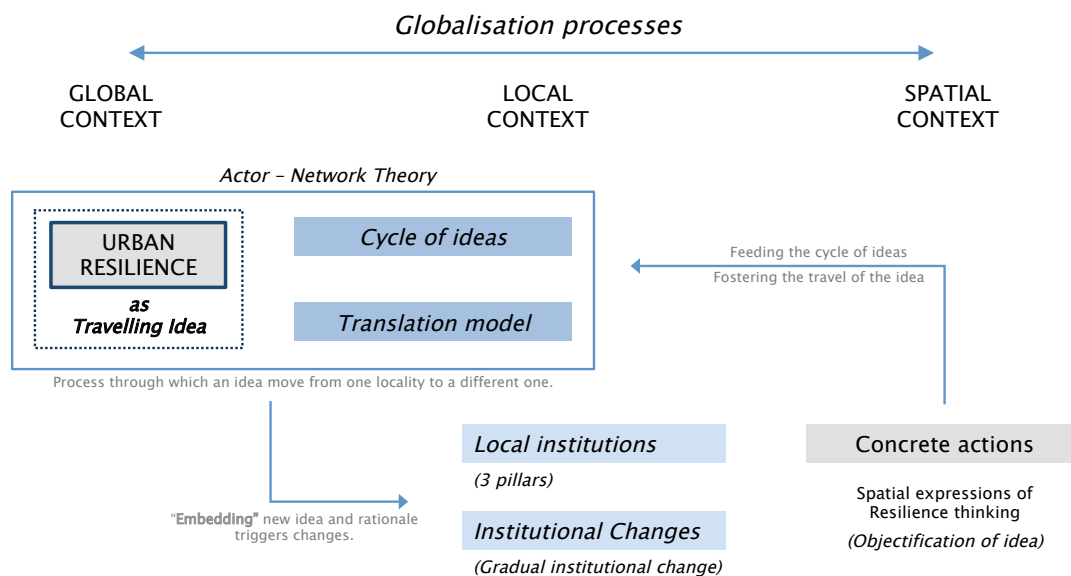


Figure 3.6. Theoretical framework

As we presented in chapter 1, introduction, and in our research design, in chapter 2, the research is structured on three different levels: first, the *Global context* that involves the understanding of 100 Resilient Cities program, and the broader understanding of Urban Resilience promoted by this program; second, the *Local context* understood as different localised time/space regarding cities that conform this network – this level will be researched through the case of Vejle; and finally, the *Spatial context* understood as concrete actions and spatial expressions of resilient thinking. Here we acknowledge that processes of globalisation reinforce the relation between different localised time/space, influencing

the way that space is created and represented. But at the same time, is this space that helps to define the local context, and further the global as well, therefore our framework considers globalisation processes as connector among levels, and localities rather than a 'space' above local context [Czarniawska, 2002; Czarniawska and Sevón, 1996].

We understand Urban Resilience as a *travelling idea* [Czarniawska and Joerges, 1996; Tait and Jensen, 2007], which is moving from one locality to another by processes of dis-embedding, translation, and re-embedding. In order to understand how the idea is travelling, we take the perspective of Actor-Network theory (ANT), which conceptualise space not as physical 3-dimensional one, but rather as a set of connections between different actors, where *"instead of having to choose between the local and the global view, the notion of network allows us to think of global entity – a highly connected one – which nevertheless remains continuously local..."* [Latour, 1996, p.372]. In this sense ANT let us to look at interactions among actors and the travel of ideas under a "glocalised" perspective [Robertson, 1995; Czarniawska, 2002; Tait and Jensen, 2007].

Through **Actor-Network theory** we will look at the way people and ideas become connected and assembled in extended units. As we described before, this theory used different set of metaphors when describing processes of creating and re-elaborating relations. In this sense, the most fundamental are:

- **Actor:** defined as *actant* by [Latour, 1996, p.373] as "something that acts or to which activity is granted by others [...] An actant can literally be anything provided it is granted to be the source of an action" which can be anything that helps to change and modify sets of connections, or create new one.
Under this perspective, actants can be humans, and non-humans (plans, reports, legislation, new technologies, and so on.)
- **Network:** are not stable systems of connections and nodes that for example characterised a computer system. But rather a metaphor for variable relations and links between actors and objects, characterised by having as many dimensions as connections they have.

Even though networks and connections among actors are space-free and multi-dimensional, we will organise the map of actants base on local, national and global. When looking at actors/actants within a network, Latour [1996] highlight that it is in the agenda to look at:

- The attribution of actors
- The distribution of properties among these entities
- The connections established between them
- The circulation produced by these attributions and connections, and the transformation of those attributions
- Distributions and connections, and the ways through which they are sent

Cycle of ideas & Translation model

Based on theory, we understand that ideas by itself do not travel, but by following different cycles of translations and transformation, they are able to access paths of trans-local time

and space. Drawing on Czarniawska and Sevón [1996]; Tait and Jensen [2007] we define the cycle of ideas as:



Figure 3.7. Cycle of ideas. [Czarniawska and Joerges, 1996; Tait and Jensen, 2007]

When ideas move from one actor to another, and from one location to different one, ideas use **intermediaries**: understood as the medium that forms networks, and help both to describe and serve the network. As Callon [1991] distinguished, an intermediary is also an actor, but *"an actor is and intermediary that puts other intermediaries into circulation [...] an actor is an author"* [Callon, 1991, p.141]. Intermediaries can be any object that orders and configure the network, named by Callon [1991] as:

- Texts
- Technical objects
- Embodied practices - Know how of Human beings
- Money

As we mentioned above, intermediaries such as documents, plans, books and professional practices support the process of transferring, and travelling of e.g models of development to different locations [Tait and Jensen, 2007]. This intermediaries are similarly defined by Czarniawska and Joerges [1996]; Tait and Jensen [2007] as **objects** within the cycle of ideas.

In this process of travelling, objects and intermediaries, are dis-embedded from one location, and re-embedded in a different one, as it was presented in section 3.3 and synthesised in figure 3.2 based on Czarniawska and Joerges [1996]. From ANT, this travelling is possible through **translations** process that allows the adaptation of original idea into local context; transforming ideas to fit in the local context they are embedded within, the process of (*translation*) Here the match between local problems, and new ideas, it is fundamental in order to perceive the new ideas as a potential solution. Drawn upon [Callon, 1986; Tait and Jensen, 2007; Nicolaisen et al., 2017], we will look at translation process based on the following 4 steps:

1. **Problematisation**: relates to the need for an idea to match with certain problems faced by different actors at the local level
2. **Interessement**: relates to the stage in the process of stabilising and making clear the identities of different actors who are, and will be "enrolled" into the network
3. **Enrolment**: relates to the stage of actual engagement with the identified actors. In this sense, different strategies would be used by actors in order to enlist one another in different ways, including the transformation of attached interests
4. **Mobilisation**: denotes the stage in the process when one actor starts to speak for others, or in name of the network

Institutions & Institutional changes

Within the local context, our theoretical framework acknowledge that when new ideas are translated and re-embedded into new context, they required adaptations from local institutions that will permit the activation of these ideas. As figure 3.1 shows, when objects are translated into actions, they move towards institutionalisation by repeating and stabilising those actions. As [Czarniawska, 2002, p.39] portrait, "*the economy of effort provided by institutionalisation creates room for new ideas, which will upset old institutions*". In other words, strong and established identity are the ground floor for innovation. Drawing on Scott [2001], we understand that Institutions, defined as *rules, norms, and values*, are shaping the way that society behave. And, at the same time, these institutions are not fixed, but rather changing and adapting through time. We will look at local institutions through the 3 pillars stressed by Scott [2001] to understand what has been adapted: **Regulative; Normative; Cultural-Cognitive**.

When understanding the influences that Resilience thinking – as a travelling idea – has generated into the local level, we drawing upon de Morais et al. [2015]; Mahoney and Thelen [2010]; Pierson [2004]; Campbell [2004] theory of institutional change, especially based on gradual changes that are progressive trough time. Here it is necessary to understand what are the mechanisms that maintain these institutions stable, and resistant to change, therefore we will look at the current *path dependencies* and the mechanisms of *positive feed-back* that have been empowering specific institutions. When understanding the momentum of external and internal influences that creates specific *window of opportunities* that leads to change, we will be inspired by Buitelaar et al. [2007] "Model of Institutional Change" which stresses external societal development, pressures and institutional reflections, and de Morais et al. [2015], which considers internal new perceived problems. The following figure 3.8 synthesises our understanding towards the analysis of institutional change:

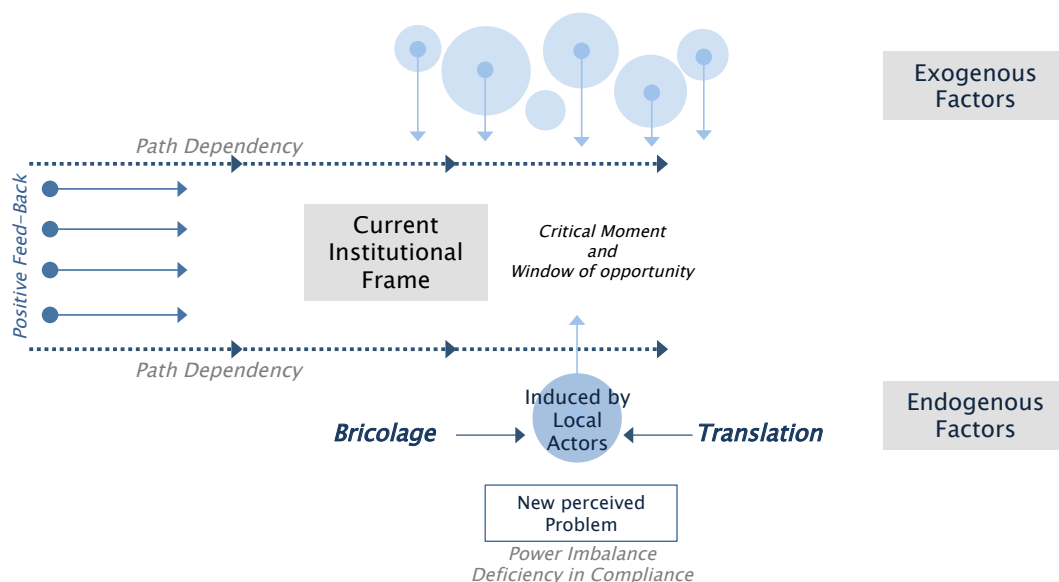


Figure 3.8. Model of Institutional Change.

Concrete Actions: *Local projects as urban resilience expressions*

Finally, within the local level, we will look at concrete actions and projects as expressions of urban resilience. This stage regards the transformation of an idea into an object – *objectification* – [Czarniawska and Joerges, 1996], and the way that following actions respond to the previous definition of a problem at the stage of translation. As our theoretical framework – figure 5.1 – is showing, based on the model of travelling ideas introducing by Czarniawska and Joerges [1996] – figure 3.2 – objects works as intermediaries that help to move ideas towards different locations. We will put especial attention over the physical space that is constructed as a result of the application of Resilience thinking at the Local level. And further, how the image of this physical space is helping to reinforce the travel of Urban Resilience. When looking at this process, we will consider the concept of "Fashion" and "Fashionable ideas" introduced by Czarniawska and Joerges [1996], understood as: Complement towards process of institutionalisation. This concept can be seen as a first step of embedding new ideas into local context that challenges and questions established institutions. In this context, *“Fashions bring in a variety of ideas; organisations within a field try them out, creating fashion by following it, but also creating institutions by persevering in certain practices, by refusing to reject previous fashions, or by hailing a new fashion as the final solution”* [Czarniawska and Joerges, 1996, p.38].

Research Approach and Methodologies 4

4.1 Scientific Approach

The aim of this section is to present the ontological and epistemological assumptions that this research is taking. This assumptions represents an important consideration since they are shaping and influencing the way that this research has been carried.

Epistemology and ontology Assumptions

When looking at social world it is necessary to make assumptions about *"what the social world is like, that is, what is the world composed of (ontology), and what one can know about the world (epistemology)"* [Farthing, 2016, p.14], and *"...how scientist should go about acquiring knowledge (epistemology)"* [Farthing, 2016, p.15]. As Farthing [2016] introduces, urban planning as practice has moved from the assumption about creating, to some extent, the ideal city –which characterised the critique of nineteenth century industrial city, towards planning as a generic process, where urban planing represents just one of them. Modern urban planning, which perceived the design of the city as an object that can be re-design and improved, has move towards the understanding of planning as *"much more general, a commoner activity than planners have considered it to be: common to all all human beings, common to all scientific investigations,..."* [Chadwick, 1978, p.xiii].

Following this first understanding of planning as common to all human beings, and drawing upon Berger and Luckmann [1966], this research project is taking mainly the perspective of social constructivism, when acknowledging that the perception of the world regards different people's points of view, which are also influenced by people's life experiences and life world. Social constructivism has the ontological perspective of world and reality as processes constructed through social systems, thus assume that there is no single reality, but a constructed truth. In this context, this perspective conceives the epistemological assumption that not objective knowledge can be acquired, because it is constructed by the viewer [Pedersen, 2012; Berger and Luckmann, 1966]. By assuming this position of knowledge, we understand that ideas, data, and information are context dependant and socially constructed, which are strongly connected and influenced by the social culture where they emerge [Farthing, 2016]. As Tait and Jensen [2007] portrays, *"ideas do not form in a vacuum, instead they arise from a particular context and a particular problem or issue at hand"* [Tait and Jensen, 2007, p.113]. In this sense, ideas that inspire plans, and therefor influenced planners and other groups of people involved in the planning process, are also influencing the original ideas by being part of this social process. Here, it is possible to recognise that different groups of people from specific locations (sharing the

same time/space) are also sharing similar point of view of the world and act like community, e.g. planners as a community, but also citizens and consultants [Galloway and Mahayni, 1977].

It is important to acknowledge that since this research is focusing on how ideas of *urban resilience* and *resilience thinking* are travelling from one localised time/space to another, and then translated and institutionalised in specific context, we assume that this reality is constructed through interaction between different actors, and influenced by its particular understanding of the world. In this context, as Czarniawska and Joerges [1996] explains, withing the process of translation of ideas and concerning *"the energy needed for travelling: it is the people, whether we see them as users or creators, who energise an idea any time they translate it for their own or somebody else's use"* [Czarniawska and Joerges, 1996, p.23]. At the same time, when looking at 100RC program and network –which is fostering the travel of urban resilience, we assume that different actors involved on this network are acting as a *community* [Galloway and Mahayni, 1977], that have a common understanding and view of the world through the lenses of Urban Resilience. In other words, this ontological assumption lead us to see the construction of reality – Urban Resilience, as a result of this social interactions.

Another ontological assumption of this research relates to the idea that practice and human interactions are shaped by institutional pressures –naming them as set of norms, rules and values; which define the way of acting [Demir and Fjellström, 2012]. This perspective, connected to *Scandinavian Institutionalism* [Demir and Fjellström, 2012; Czarniawska and Joerges, 1996], focuses on the ambiguity of change, and assumes that stability and change of institutions coexists as a norm [Czarniawska, 2002]. At the same time, this perspective lead us to the assumption that institutions –and its processes of institutionalisation and de-institutionalisation; are based on social interactions and reproductions, both embedded in specific cultural context. As Scott [2001] highlights based on different scholars, institutions are activated by social and human behaviour, and *"institutions are dead if they are only represented in verbal designations"* [Scott, 2001, p.49] based on [Berger and Luckmann, 1966].

Finally, the objectification of ideas within the process of translation, and the following reproduction of actions [Czarniawska and Joerges, 1996], are all context dependant, at the same time that are influenced by local perceptions of the world. In this sense, we are also taking the assumption that these processes of translation of ideas, and the following objectification of them through plans, projects, images, and so on, are socially constructed, responding to localised problematisation [Callon, 1986; Tait and Jensen, 2007]. Even though this research is taking mainly the social constructivist perspective, we acknowledge that some of the data and information that is informing and helping to shape local problems, are responding to other paradigms e.g. positivist perspective as Farthing [2016] described. In this sense, at the local level of Vejle, when working with the analysis of e.g. raising sea and precipitation levels, is arguable that this analysis are based on empirical observation of natural phenomena, by following procedures related to natural science and identifying with positivism. In this sense, we accept that the definition of specific problematisation of the city, and its prioritisation is a socially constructed reality, but the ontological assumption regarding this natural phenomena is informed and acquired

by facts that established a concrete and objective basis [Farthing, 2016].

The values

In contradiction to positivist paradigm, which perceive science as value-free and by having no comment about what the world ought to be like [Farthing, 2016], we agree that the interpretation of the world is charged by the influence of some prior assumptions about what define reality [Farthing, 2016], in other words, research started with the assumption of what we are looking for (ontological assumptions). In this sense, the initial question about Urban Resilience presuppose our views as researches regarding the desirability of specific situations, understanding this as a "better way of planning the city". As Allmendinger [2002] argues: all theories are, to some extent, normative and charged with values from the embedded social and historical context. When defining the scope of research regarding urban resilience, and the ways that this idea is translated into specific context, followed by process of institutionalisation of practices, as Farthing [2016] argues: we are using our own values to focus our research on such an issue or problem.

However, while Urban Resilience is regarded a "better" way of planning in a world of constant change, as we shortly highlighted in chapter 1, we are more interested in analysing how planning practices in Vejle have been influenced due to Urban Resilience, as a travelling idea promoted through 100RC. To explore this, the method of Case-study will be explained next.

4.2 Case-study

In order to investigate how the idea of 'resilience' and the more manageable 'resilience thinking' concept is implemented from the global context of 100RC and translated into the local context, a case study of a member city is relevant. In this research, the case of Vejle, which is the only member city in Scandinavia, has been chosen to conduct the research upon.

A single case-study, in this case of Vejle, is as explained by [Flyvbjerg, p.220] as a "*detailed examination of a single example*". By looking into how Vejle are trying to institutionalise and mainstream the concept of resilience into their own organisation and practices, the researches will produce context dependent knowledge. This is, as [Flyvbjerg, p.223] explains, important since it helps us develop competences and "*achieve real practical experiences*". Furthermore, Flyvbjerg explains that by developing concrete context-dependent knowledge the researchers will be able to produce their own skills to a high level. If the project did not use an actual case to conduct the research on resilience, the outcome might become more context-independent, which can have some benefits in other research. However, when simultaneously trying to understand what 'resilience' as a concept is all about and afterwards try to understand how the concept is used in practice, the idea of a case-study enables us to achieve real practical experiences; in this single case, how 'resilience' matters to Vejle. Within social science it's difficult to produce proofs, due to the absence of 'hard' theory. While cities have many similarities in terms of layout, materials and form, they are however much more different when moving into the more 'soft' layers of a city, such as its functions, organisational structure and population. There are 100 different cities within the 100 Resilient Cities network, hence the name, which most

likely means that there are 100 different complex networks of state-authorities, citizens and politics, not to mention the different challenges these cities are facing, that the concept of resilience has to be translated into and be institutionalised within. This is yet another reason for carrying out a single case study, because instead of seeking more universal answers within the field of social science which would, as expressed by [Flyvbjerg, p. 224] result in more vain results, the research strives to produce knowledge on behalf of actual and tested practices.

As mentioned, cities are different and therefore the usage and value of what the 'resilience' concept brings along might as well be different from city to city. Therefore, since this research mainly looks at how Vejle translate and use the concept of resilience, it only provides actual proofs of this for the single case. As Flyvbjerg mentions, the method of case-study have received criticism because it produces context-dependent knowledge that is impossible to generalise on basis of. For this research, this is however not a goal. The authors acknowledges the complexities and uniqueness of cities saying that, what we discover on Vejle is unlikely to be the same results if the research was conducted on a different city. The quality in this research lies in "the force of example" which can inspire other researches to conduct a similar research on a different city. This research will not answer how resilience is influencing cities worldwide, but it will give practical and deep insight into how it has influenced a single case.

The case description is integrated into chapter 6 in section 6.1, *Case of Vejle*. Description with an introduction to the case, its population, context and what challenges the city is facing as well as the city's enrolment in 100RC, will be described. Afterwards, the case will be mostly used in research question 2 and 3, where the understanding of the city becomes necessary to understand how the city of Vejle is incorporating the ideas of resilience into its own agenda and politics.

4.3 Methods

4.3.1 Interviews

In order to develop the required data to answer the proposed research questions, interviews have been a crucial part. In this research, we have practised four semi-structured interviews to get a greater amount of needed data. The first interview we had, was with Ulla Varneskov, CRO in Vejle Municipality. The interview was conducted in Vejle on the 10th of April. Ulla Varneskov have been CRO since summer 2016, taking over for the former CRO. The second interview was with Jim Walda, project manager and part of the Resilience Team in Rotterdam Municipality. This interview was conducted as a Skype interview on the 25th of April. The third interview we had was with Jacob Østergaard, a local planner in Vejle and currently working on the Ny Rosborg project. This interview was conducted through Skype on the 24th of May. The fourth interview was with Dima Zogheib from ARUP, which have been working with Vejle to assist them in developing the Resilience Strategy. This interview was also conducted through Skype on the 24th of May. The fifth and last interview was with Konstantina Karydi from 100RC, that is a part of a team in 100RC that assists the group of cities, that Vejle is included in, and was also hold on the 24th of May through Skype.

The four interviews we have conducted are synthesised in the figure below:

Organisation	Interviewee	Position	Main objective
100 Resilient Cities	Konstantina Karydi	Associate Director, City Resilience Delivery	Global context: Aims and means of 100RC to build resilience in cities
ARUP	Dima Zogheib	Landscape architect and consultant	Global/local context: How ARUP have assisted Vejle in the translation process of Urban Resilience and guidance on the Resilience Strategy process
Vejle Municipality	Ulla Varneskov	Chief Resilience Officer (CRO)	Local context: How Vejle have utilised Urban Resilience in their practices and organisation
Rotterdam Municipality	Jim Walda	Project Manager	Local context: How Rotterdam Municipality have utilised urban resilience in their practices and organisation
Vejle Municipality	Jakob Oestergaard	Local planner	Spatial context: How resilience is recognised in planning practices and local projects

Figure 4.1. List of interviews conducted

From the beginning of the project, we were eager on arranging interviews with both people from the global context of 100RC and also people from the local context of Vejle, preferably the CRO. Furthermore, when developing further on the research, we realised that interviews with a planner could provide interesting insights into how resilience have been translated further into the administration and how its used within local planning. The interview with Dima Zogheib was preferred since we learned, that ARUP have functioned as a consultancy for Vejle in process of installing resilience. At last, the interview with Jim Walda from Rotterdam was initially planned in order to develop knowledge on how Urban Resilience have been adopted and institutionalised in Rotterdam Municipality. This was initially meant to provide data for a second case of Rotterdam, planned to work as a reference case. This was however not sufficient since we could not get sufficient data in order to understand the municipal organisation and structure of Rotterdam Municipality, which was a crucial part in order to investigate, how resilience is institutionalised.

Prior to the interviews, we have send interview guide with interview questions enabling the interviewees to prepare for the interview. These interview guides are included in appendix A, Interviews. As shown in figure 4.1, we arranged interviews with 5 different people from 4 different organisations, ensuring that we could gather data and answers from people with different backgrounds and profession; gathering data and viewpoints from different angles.

The semi-structured interview form was chosen to ensure more openness and less structure in the interview; giving more space for conversation and additional thoughts. However, with the interview guide, we were still able to provide a more rough structure, focusing on the most important questions but also to ensure some kind of order of the answers, moving from global, to local and ending up in the spatial scale focusing on physical objects and projects. All interviews were conducted in English, and have been transcribed, see A. In terms of transcription we have structured the text so whenever a new person speaks, the

hour, minute and second (hour:min:sec) is shown and what person that speaks e.g. (JH).

4.3.2 Document Analysis

According to Farthing [2016] the use of existing documents and literature on the researched topic can be very helpful taken the relative short time of conducting the research in consideration. During this research we already have, and will continue to use existing knowledge on the topic of resilience. In chapter 3.5, theoretical framework, we have conducted a literature review of existing literature on the topic, serving as a theoretical base in order provide scientific justification for our own research. Furthermore, in our analysis we have used different documents, summarised in the figure below, figure 4.2:

Title	Author	Year
Resilience Strategy Vejle	Vejle Municipality, with assistance from ARUP	2016
Municipal Plan 2017 – 2029	Vejle Municipality	2017
Planstrategi (Plan Strategy)	Vejle Municipality	2015
District plan 1252	Vejle Municipality	2018
District plan 1254	Vejle Municipality	2018
District plan 1258	Vejle Municipality	2018
District plan 1232	Vejle Municipality	2017
District plan 1250	Vejle Municipality	2017
District plan 1240	Vejle Municipality	2017
District plan 1225	Vejle Municipality	2016
District plan 1203	Vejle Municipality	2016
District plan 1218	Vejle Municipality	2016
District plan 1232	Vejle Municipality	2016
District plan 1188	Vejle Municipality	2015
District plan 1189	Vejle Municipality	2015
District plan 1191	Vejle Municipality	2015
District plan 1195	Vejle Municipality	2015

Figure 4.2. List of documents used in analysis

The above figures summarises the documents, which have been used, mainly to conduct our analysis. We have looked in 14 different district plans which have been skimmed to see whether we can identify the concept of 'resilience' in the plans. Vejle's Municipal plan and the *plan strategy* have been used for same reasons; identifying how resilience has been merged into policies and plans on a more strategic municipal level.

The Global Context:

100 Resilient Cities program & The Definition of the Network

5

This chapter will unfold the first sub research-question: *How is 'urban resilience' conceptualised by 100 Resilient Cities and how is this network organised?* This question is considering two parts. First, it regards to acquire an understanding of the idea that 100 Resilient Cities as a program is portraying, and in this sense, understand what is the idea that this programme is promoting to travel. The second part of the question regards the definition of the network through which the idea of urban resilience is travelling. This will be enlightened by Actor-Network theory, as a part of our theoretical framework, and particularly when recognising different actants and intermediaries, which together constitutes the network developed by 100RC.

5.1 Urban resilience by 100 Resilient Cities

This section aims to discover how 100RC conceptualises urban resilience and in that sense, how it compares to existing definitions and conceptualisations of 'resilience', which we explored in section 3.1. In this section, we will look upon the definition of urban resilience from 100RC and the Resilience Framework, serving as a practical device on how to enhance resilience, to understand what it exactly is, that 100RC promotes.

Cities face a growing range of adversities and challenges in the 21st century. From the effects of climate change to growing migrant populations to inadequate infrastructure to pandemics to cyber-attacks. Resilience is what helps cities adapt and transform in the face of these challenges, helping them to prepare for both the expected and the unexpected [100 Resilient Cities, 2018a]

In this quote from the 100RC, resilience is portrayed as the remedy to help cities adapt and cope with the growing uncertainties and challenges that trigger the context of cities to change. Climate change, inadequate infrastructure, cyber attacks and the general strain urbanisation puts on cities are highlighted as potential adversities and challenges that cities are facing in the 21st century. Within the 100RC, cities are observed as economic centres with "*complex web of interconnected institutions, infrastructure and information*" which all together are responsible for the well being of humans living in cities. These complexities and large concentrations of humans are also what makes cities vulnerable. It is argued that cities are the places where stresses are accumulated and where sudden shocks can result in physical and social collapse. "That is, unless a city is resilient" [ARUP, 2015, p. 3].

Stating that 'resilience' can help cities to be prepared for "both the expected and the unexpected" and that resilience cities are not in danger of physical or social collapse is, in our perspective, an ambitious and interesting statement that enquires for further investigation. Because how is that? And what is the tool to secure this?

The "Resilience City Framework" (CRF) was published in 2015 as a product of a partnership with The Rockefeller Foundation and ARUP, a global and independent interdisciplinary firm of designers, planners, engineers, consultants and technical specialists. The aim of the partnership was to understand the characteristics of a resilient city and reveal the common set of factors that; *"enhances a city's ability to survive, adapt and grow in the face of adversity"*. [100 Resilient Cities, 2018a]

Exactly the ability to survive, adapt and grow is what appears to be the features or capabilities of a resilient city. Looking at 100RC's definition of urban resilience it says:

"Urban resilience is the capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience." [100 Resilient Cities, 2018a]

By looking at the definition from 100RC we can tell, that resilience is regarded as a combined measure for how good cities are at adapting, surviving and grow in the face of disruption. This unveils, that disruptions, which are divided into shocks and stresses, are somehow anticipated within the resilience way of grasping cities. For a city to be resilient, which we assume is understood as a good thing, it has to be adaptive and expect that unintended and unforeseen disruptions will occur. This is similar to the conceptualisation brought by [Coaffee and Lee, 2016, p. 51] in section 3.1, in which resilience is proactive and anticipatory, focusing on how to be better prepared and more resistant to events, that undoubtedly will occur. The division of disruptions into stresses and shocks reveals that 100RC operates with different types of disruptions. Chronic stresses are understood as *"slow moving disasters"* such as high unemployment, water shortages or inefficient public transportation systems which solely or combined can weaken the fabric of a system from day to day basis. Using the phrase 'fabric of a system' and the idea that resilient cities should be able to grow no matter the disruption, as brought by the 100RC definition, shows similarities to Hollings 1973 studies of ecological resilience as a measure for "systems ability to absorb change and disturbance and still maintain the same functions" [Coaffee and Lee, 2016, p. 21]. Though emphasis is put on cities ability to grow in face of disruption, compared to the more equilibristic usage focusing on withstanding main functions. The 100RC usage of resilience is also different from the engineering framing, as described in section 3.1 of resilience, which focuses on "systems ability to return to an equilibrium or steady-state after a disturbance" [Davoudi et al., 2012, p. 300]. This is evident within the conceptualisation; ability to adapt and transform in light of disruption. 100RC acknowledges within their conceptualisation that cities can be forced to transform from one steady-state to another; "bouncing into a new more desirable configurations" as explained within the socio-ecology framing [Folke, 2006]. Cities are regarded as complex and evolving systems, rather than stable systems (engineering perspective). The 100RC conceptualisation of urban resilience focuses on the need to remain functional (survive) and

be able to provide the same services to keep the city operating. Its however obvious, that in case of stress or shock the resilient city must be able to transform (long-term) and adapt (short-term) itself to the new circumstances. Looking at the first bit of definition tells us, that urban resilience is not something the local government can provide solely. Individuals, institutions, businesses and communities must also build in resilience towards stresses and shocks. This will be further elaborated within the next section 6. Acute shocks, which are defined as *"sudden, sharp events that threaten a city"*, are characterised as more sudden events that happens out of the blue [100 Resilient Cities, 2018a]. Events like earthquakes, flooding and terrorist attacks are exemplified as events in this category. As mentioned before, 100RC describes cities as complex systems with interlinked 'sub-systems', such as institutions and infrastructure. These sub-systems, which are linked together supporting and constituting the fabric of the city, are therefore exposed to different stresses and shocks. Its therefore likely, that cities can be faced with multiple and different types of stresses, both dependently and independently of each other, but with much greater impact on the city and its resilience. 100RC acknowledges this and aims to incorporate scenarios like these into the CRF. 100RC uses the experiences gained from the 2005 Hurricane Katrina event in New Orleans which is used to exemplify how a single shock, in this case the hurricane that triggered flooding, can expose and exacerbate the weaknesses of the city, making it way harder for the city to bounce back and revive itself. Unaddressed chronic stresses, like ageing infrastructure and environmental degradation meant, that when the event occurred, the total impact was exacerbated due to these weaknesses. 100RC explains, that for a city to be better prepared and more resistant towards events like these, looking at the city in more holistic manners is required. However, while its clear that urban resilience is about making cities, *and systems within a city*, more flexible, reflective inclusive., to enhance their overall capacity to adapt and survive, its not so clear how its actual redeemable. When is a system flexible enough to be resilient, how to measure systems flexibility and how could it possibly be enhanced? Its also not clear, what the underlying policies are behind the scope of enhancing urban resilience. 100RC argues, that to build urban resilience its necessary to *"understand the systems that make up the city and the interdependencies and risks they may face."* [100 Resilient Cities, 2018a]. This is where the City Resilience Framework comes into the picture.

The City Resilience Framework

The City Resilience Framework is the outcome of a partnership with 100RC and ARUP. 100RC describes, that throughout an extensive research on cities and their experiences with disruptive challenges, a common set of factors, that *"enhances a city's ability to survive, adapt and grow"* was revealed. Those factors were translated into the Resilience Framework, which is described as:

"The City Resilience Framework provides a lens through which the complexity of cities and the numerous factors that contribute to a city's resilience can be understood. [ARUP, 2015, p. 7]

100RC and ARUP have developed a framework which ideally should enable cities to interpret and assess their individual resilience. This framework, which works as an

analytical tool, is structured in three layers: categories, goals and qualities. There are four main categories, twelve goals and seven qualities. The four main categories are:

- Health and wellbeing of individuals (people)
- Urban systems and services (place)
- Economy and society (organisation)
- Leadership and strategy (knowledge)

Within these four categories are 12 goals in total which are described by ARUP to represent *the backbone of a resilient city* [ARUP, 2015, p. 8]. Minimal human vulnerability, diverse livelihoods, sustainable economy, reliable mobility and empowered stakeholders are few of the in total 12 goals. The 12 goals functions as indicators that are considered critical and fundamental attributes for cities ability to deal with shocks and stresses, or simple put, qualities of a resilient city [ARUP, 2015]. Its further added, that by using the 12 goals, which further features 52 indicators, its possible to analyse a city's 'resilience, identify critical gaps and help to decide where actions will be most effective in order to increase the city's overall resilience, or as ARUP uses as a metaphor; strengthen the city's immune system [ARUP, 2015, p. 8]. The 7 qualities refers to 7 different characteristics that ARUP have identified as being necessary for a city to be resilient. The 7 characteristics are:

- *Flexible (willingness, ability to adopt alternative strategies in response to changing circumstances)*
- *Redundant (spare capacity purposively created to accommodate disruption)*
- *Robust (well-conceived, constructed, and managed systems)*
- *Resourceful (recognizing alternative ways to use resources)*
- *Reflective (using past experiences to inform future decisions)*
- *Inclusive (prioritize broad consultation to create a sense of shared ownership in decision making)*
- *Integrated (bring together a range of distinct systems and institutions)*

These 7 characteristics of a resilient systems indicates that resilience is about learning from the past, co-creation and decision making in different layers, build-in capacities and assets to withstand shocks and resources and flexibility to recognise alternative solutions and practices to cope with stresses and shocks.

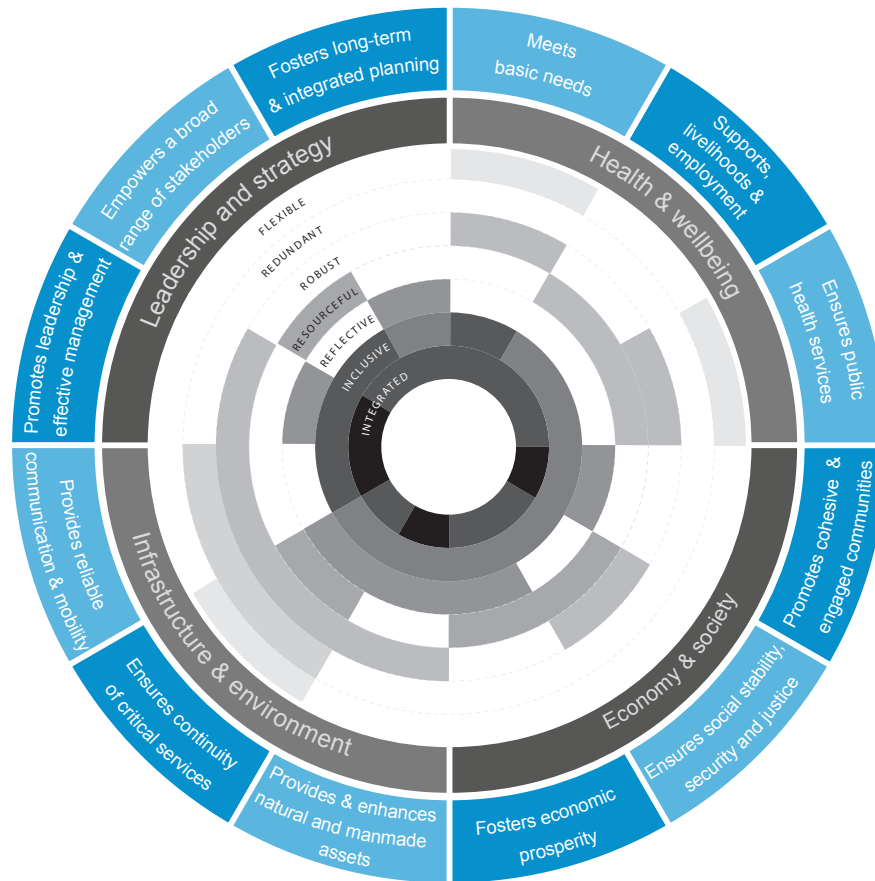


Figure 5.1. The Resilience Framework [100 Resilient Cities, 2016b] and [The Rockefeller Foundation and ARUP, n.d.]

As the figure shows, the 12 goals shapes the outer ring, the 4 categories the middle ring and the 7 qualities does each shape a ring in relation to each goal. This means, that there are 84 individual spaces¹ within the framework, which can be given a score, dependent on e.g. how robust the 'sustainable economy' is. This process of

As a part of the enrolment and value of joining the 100RC network/programme, which the next section will look deeper into, an assessment of a city's resilience is provided by using the framework. The result is what ARUP calls a 'Resilience Index' which cities can use to measure their progress on resilience against an initial baseline. This is expected to be used within the resilience strategy, that every city within the programme, are forced to do. The Resilience Strategy is produced by the city itself with assistance from 100RC and ARUP. The Resilience Strategy encompasses the results from the resilience framework by developing strategies to work on the identified weakpoints aiming to strengthen the overall resilience of the city. The Strategy furthermore outlines the core challenges which are to be addressed through strategic goals, that is to be achieved through concrete actions.

Summarising

The first part of research question 1 aims to understand how the idea of urban resilience is framed within 100 Resilient Cities. In this section we have discovered clear similarities

¹12 goals multiplied with 7 qualities = 84 spaces

between 100RC's conceptualisation and the usage of resilience from literature, especially the ecological framing. Urban resilience is a concept that acknowledges that cities, more than ever, have become vulnerable targets for physical, social and economic challenges in modern society. Urban resilience accepts that disruptive events, be it chronic stresses or sudden shocks, will occur. Urban Resilience asks the question; how prepared are we for when the water rises, when jobs closes, when terrorist attacks occur etc? Urban resilience focuses on enhancing the flexibility, robustness and overall capacity of systems to perform when facing multiple hazards. Perform in a sense to keep the city functioning, to ensure that the key services are retained and that city with its citizens, businesses, infrastructure and economy will grow no matter the disruption. The concept also acknowledges that disruptions can force cities to leap into new steady-states to ensure continued growth. The 100RC's conceptualisation of resilience also shows the acknowledgement that local government are not able to build resilience on their own, but also "institutions, communities and businesses" must improve their abilities to adapt in order to create a resilient system.

The 100RC's 'Resilience Framework' attempts to translate the idea of resilience into something more tangible and operational, and therefore tries to bridge the gap between the rather comprehensive and ambiguous understanding of resilience and this practical tool to study cities in a more holistic manner. So now we have learned, how resilience is conceptualised within 100RC, and therefore gained information on what it is, that the programme promotes. The next section will therefore look further into how 100RC as a network is defined to understand how the constellation of actants are supporting the travel of the idea.

5.2 100RC as a network

In the previous section we have presented how 100RC has portrayed the idea of urban resilience, understanding that cities are complex systems that are facing different challenges, and in this context they need to survive, adapt and grow. Here the Resilient Framework developed by Arup, helps to install a holistic perspective and bring the broad definition of resilience into a more operational tool. In this section we will build over this conceptualisation and develop an understanding of how the 100RC network has been defined. Here we draw upon actor-network theory in order to understand how the constellation of different actor/actants are, on the one hand, defining the global network of 100RC itself, and on the other hand, determining the way that the idea of Urban Resilience is travelling from one location to another.

When looking at the Network that 100RC has built around urban resilience, we look at connection between different Actants, as Tait and Jensen [2007] portrayed, from ANT perspective *the network* represent a metaphor for describing variable relations and links between actors and objects. When defining actors/actants we will draw upon Latour [1996]. In order to construct the network and its understanding, requires the deconstruction and recognition of human and non-human actors/actants and intermediaries that compound and define this network. As Latour [1996] portrays, when looking at actants, it is important to see at the attribution of the actors, distribution of properties and role, and its established connections. Since, ANT views and perceive space based on relations, and not in relation

to distances, scales, or levels [Tait and Jensen, 2007; Latour, 1996], it is possible to see that actors that works at global level, represents a highly connected ones. As Czarniawska and Joerges [1996] argued, the global scale is not a higher scale, but rather a net of different localised time/space contexts well connected. In this sense, when looking at "100RC program" acting as another localised time/space, a highly connected one, we can argue that the process of translation and its 4 steps (problematisation, interessement, enrolment, and mobilisation) are also applicable as methodology to understand how Vejle have installed the idea of Urban Resilience at this level. The following table synthesises the different actors/actants that are conforming the network around the 100 Resilient Cities program.

Actant		Strategic Role / Attribution	Connections
Global Level			
Human Actors	100RC Programme / Organisation	<ul style="list-style-type: none"> • Help cities around the world become more resilient to the physical, social, and economic challenges of 21st century. • Catalyser of urban resilience movement by building a dynamic global organization, which connects and influence actors at different levels. • Funding each city to hire Chief Resilient Officer. • Provide capacity building, technical assistance, and access to resources that help cities when implementing resilience solutions and institutionalise resilience thinking. • Reinforcing the network by providing the connections between Cities and Partners. • Catalyser of market place when connecting solution's makers (Partners) that offer what cities needs, and foster the creation of new solutions when necessary. 	Connections at Global Level with Partners and CROs
	Platform of partners	<ul style="list-style-type: none"> • One of the key offerings that 100RC is providing to cities. • It contains a large, curated suite of resilience-building tools and services, provided by a selected group of partners. • It is conformed by partners from Private, public, academic, and non-profit sector. • Cities access to this platform when developing its Resilience Strategy. 	Connections with 100RC, CROs, and Different Agents when developing Strategies.
Non - human Actors	100RC summit	<ul style="list-style-type: none"> • Instance where a strong peer-to-peer network is built among human actors. • Establishment of Channels of communication among Human actors, in order to facilitate the sharing of knowledge, best practices, and solutions. 	
	CROs Network	<ul style="list-style-type: none"> • Platform that connects CROs around the world, and facilitate the sharing of Experiences, best practices and solutions. 	100RC - CROs
	Resilience Framework and Index	<ul style="list-style-type: none"> • Tools that helps to install and build resilience at the local level. 	
	100RC WEB Platform / Social Media	<ul style="list-style-type: none"> • Channel of communication and sharing of ideas through documents, best practices reports, and posts. 	Open platform that expand boundaries of the Network.
Local level			
Non - human Actors	Cities	<ul style="list-style-type: none"> • Concentrate the challenges and opportunities of the 21st century. • Concentrate the systems and capacities that will lead process of coping their own challenges. 	
	Resilient Strategy	<ul style="list-style-type: none"> • One of the tools that provide members cities an holistic and integrated direction. • Roadmap that contains cities priorities for building resilience. • Document that helps 100RC when advocating for sharing practices, process, and ways of implementing Resilience. • Its production brings together public and private stakeholders. • It defines projects and initiatives specially designed for each city's strengths and vulnerabilities. 	Involved Local Actors with CRO and Partners during Formulation. As document, expand the boundaries of the network.
	Local Institutional Framework	<ul style="list-style-type: none"> • Regulatory framework that define the way that city is produced 	Local Actors
Human Actors	Chief Resilient Officer (CRO)	<ul style="list-style-type: none"> • Act as pivotal piece between global and local level when addressing 100RC vision. • Work across government departments in order to improve collaboration. • Bring together vary range of stakeholders. • Leads City's Resilient Strategy. • Ensure installation of Resilience Thinking within the city organisation. 	Establish the link between Local and Global Actors.
	Local Authorities	<ul style="list-style-type: none"> • Provides political will and support. 	Connection trough CRO
	Local Stakeholders	<ul style="list-style-type: none"> • Provides local perspective when defining priorities, challenges and opportunities. 	Connection trough CRO
	Local Civil Society	<ul style="list-style-type: none"> • Provides the local and ground knowledge during the process of definition and implementation of Resilience Strategy. 	Connection trough CRO

Figure 5.2. Map of Actors within 100RC Network.

100RC network is built around the idea of urban resilience, which in a way is presented as "the solution" when facing and coping nowadays problems and challenges that cities are exposed to. In this context, the different actors are connected by sharing and reinforcing the idea of resilience and urban resilience. As argued by Tait and Jensen [2007]; Czarniawska and Joerges [1996], when a new idea is installed in a new context, it requires to match with specific problems that this context is facing at hand. This process allows the new idea to arise as "the best possible solution". This process of definition of the problem, or the stage of *problematisation* within the four steps of Callon [1986] translation model, regards a discursive one, where some specific actors have the power to define and answer what is the problem, that will be solved through urban resilience.

When analysing different documents that has been elaborated within the framework of 100RC (Resilient Strategies, Reports, Prospectus, among others) one unified discourse remains common and untouchable: 21st century cities are challenged by different type of stresses, and Urban Resilience represents the best way of approaching them, and in this context, 100RC is portrayed as providing a world wide solution. This discursive process can be seen as matching with the problems that the world is facing at hand, and a process of mythologising the origins of the idea [Czarniawska and Joerges, 1996]. The following quotes exemplifying this point:

"In 2013, The Rockefeller Foundation identified three major global trends: urbanisation, globalisation, and climate change. Cities were growing, becoming more interconnected and more vulnerable to climate- related threats. Looking to help the world cope with these challenges, and building on a 50-year legacy beginning with Jane Jacobs and leading to the Asian Cities Climate Change Resilience Network (ACCCRN), 100 Resilient Cities was born".[Berkowitz and 100RC, 2018]

"What started as a bold, but untested, idea on how to best help cities prepare for the challenges of the 21st Century has transformed into a global movement driven by city leadership, urban stakeholders, and corporate and nonprofit partners" [Berkowitz and 100RC, 2018].

These two quotes were taken from the press note *"5 Years: A Growing and Evolving Resilience Movement"*, written by Michael Berkowitz, president of 100RC. Here, the origin of the network is presented as a legacy of 50 years, and introduces how The Rockefeller Foundation has been leading when working for coping global challenges. At the same time, it presents the origin of 100RC from scratch, and evolving towards a *"global movement"*.

100 Resilient Cities as a network

As 100RC presents through different means (Reports, Press notes, Documents, and publications among others) mainly condensate in its website: www.100resilientcities.org, it is possible to see that 100RC regards the main actant in this network by introducing the way that the program is operating. When introducing the "Global Prospectus" document released in February 2018, 100RC elaborate a short description of the different challenges that cities are facing nowadays (introduced in the previous section). This is followed by the presentation of the program as:

"100 Resilient Cities – Pioneered by The Rockefeller Foundation (100RC), possesses a unique vantage point for understanding this changing landscape. The holistic lens urban resilience offers decision makers is uniquely suited to meet the needs of the modern city and the regions of which they are critical members. Cities in the 100RC network are provided with the resources necessary to develop a roadmap to resilience along four main pathways:

- 1. Financial and logistical guidance for establishing an innovative new position in city government, a Chief Resilience Officer, who will lead the city's resilience efforts.*
- 2. Expert support for development of a robust Resilience Strategy.*
- 3. Access to solutions, service providers, and partners from the private, public and NGO sectors who can help them develop and implement their Resilience Strategies.*
- 4. Membership of a global network of member cities who can learn from and help each other".*

[100 Resilient Cities, 2018b].

The four main pathways mentioned before, are constantly presented in several documents and reports, which helps to reinforce and highlight the role that 100RC program is assuming when installing the idea of Urban Resilience world-wide and helping cities become more resilient. As highly connected actor, 100RC assume its role by providing 4 main offerings to the member cities:

- 1) We provide the funding for the city to hire a Chief Resilience Officer (CRO). The CRO works across city government silos to create and implement a resilience strategy, serving as a senior advisor to the Mayor, promoting resilience thinking, coordinating resilience efforts across government and multi-sector stakeholders, and liaising with other CROs, 100RC staff, and resilience service providers.*
- 2) We pair each city with a consulting Strategy Partner to develop and deliver a Resilience Strategy, which is a tactical roadmap that articulates the city's resilience priorities and specific initiatives for short-, medium- and long- term implementation.*
- 3) We grant our network cities access to a Platform of Services to support strategy implementation. The Platform Partner network consists of a carefully selected group of private sector companies, universities, NGOs, and publicly funded labs that provide resilience- building tools, products, and services to our cities to help them design and execute the initiatives within their resilience strategies.*
- 4) We provide our cities with membership to the CRO Resilience Practitioner Network, through which CROs can celebrate successes, discuss challenges they face in their cities, share insights on their work, and provide support for one another. [100 Resilient Cities, 2017a].*

The Platform of Partners

When introducing the Platform of Partners, Liz Yee, 100RC Vice President of Strategic Partnership and Solutions, highlights that one of the problems that 100RC aim to solve regards the lack of exchange of ideas and solutions among cities that actually are facing similar challenges. She states that *"existing solutions aren't scaling or are not being shared more broadly. In other words, cities constantly find themselves reinventing the wheel"* [Yee and 100RC, 2015]. In this context, the Platform of Partners is one of the four key offerings that 100RC is providing to member cities, and have designed to address this problem. Through this Platform Partner, member cities can have access to a large, *"curated suite of resilience-building tools and services supplied"*, provided by a carefully selected group of partners that came from the private, public, academic, and non-profit sector [Yee and 100RC, 2015].

As Yee and 100RC [2015] portrays, *"the catalogue includes tools and services that cities might not otherwise be able to access for a number of reasons, such as affordability, not knowing that the tool existed, or not understanding that it could be applied to address their unique city needs"*. These tools and services can help and educate member cities when implementing and planning the strategy process, i.e. when evaluating and integrating big data into decision making; assessing risk exposure to hazards; monitoring and protect water resources; designing resilient urban infrastructure and environments; and among others, one of the most important elements, providing education around the concept of resilience [Yee and 100RC, 2015]. As we presented in the previous section, ARUP as a consultant group, the Resilience Framework and Index represents one of the different tools that cities are having access through this platform. This platform of partners is mainly activated when member cities are developing its Resilience Strategies, where 100RC connect specific needs with the capabilities and expertise of divers Platform Partners. Here, Yee clarify that although the platform of partners will not address all the needs that member cities have, its purpose is to help and guide cities when identifying tools and services that they can use and implement, and which have worked elsewhere. In this sense, cities would be able to address many of their current resilience needs, at the same time that they build the capacity to keep working on their resilience in the future.

By helping individual cities, and by connecting these *"world-class actors"* with cities, 100RC expected to facilitate the process of informing the the market place. In some sense, this practice can be seen as large laboratory to try new solutions and developed new tools, at the same time that partners can develop a better understanding of the new needs of cities. Here, partners from the private sector, NGOs, and publicly funded partners could build new knowledge, developed new tools and improved old ones, in order to open this offer to other cities out of 100RC network. As Yee and 100RC [2015] highlights, *"Through our Platform, cities will become more resilient, the marketplace will produce better tools, and the global practice of resilience will advance ever further"*.

The map of Partners

The almost 100 organisation coming from fields of expertise regarding: Buildings, Climate Change, Community, Culture, Economy, Education, Emergency & Disaster Management, Environment, Equity & Vulnerable Populations, Finance, Governance &

Policy Administration, Information & Technology (IT), Public Health, Transport & Mobility, Urban Planning & Development, and Utilities.

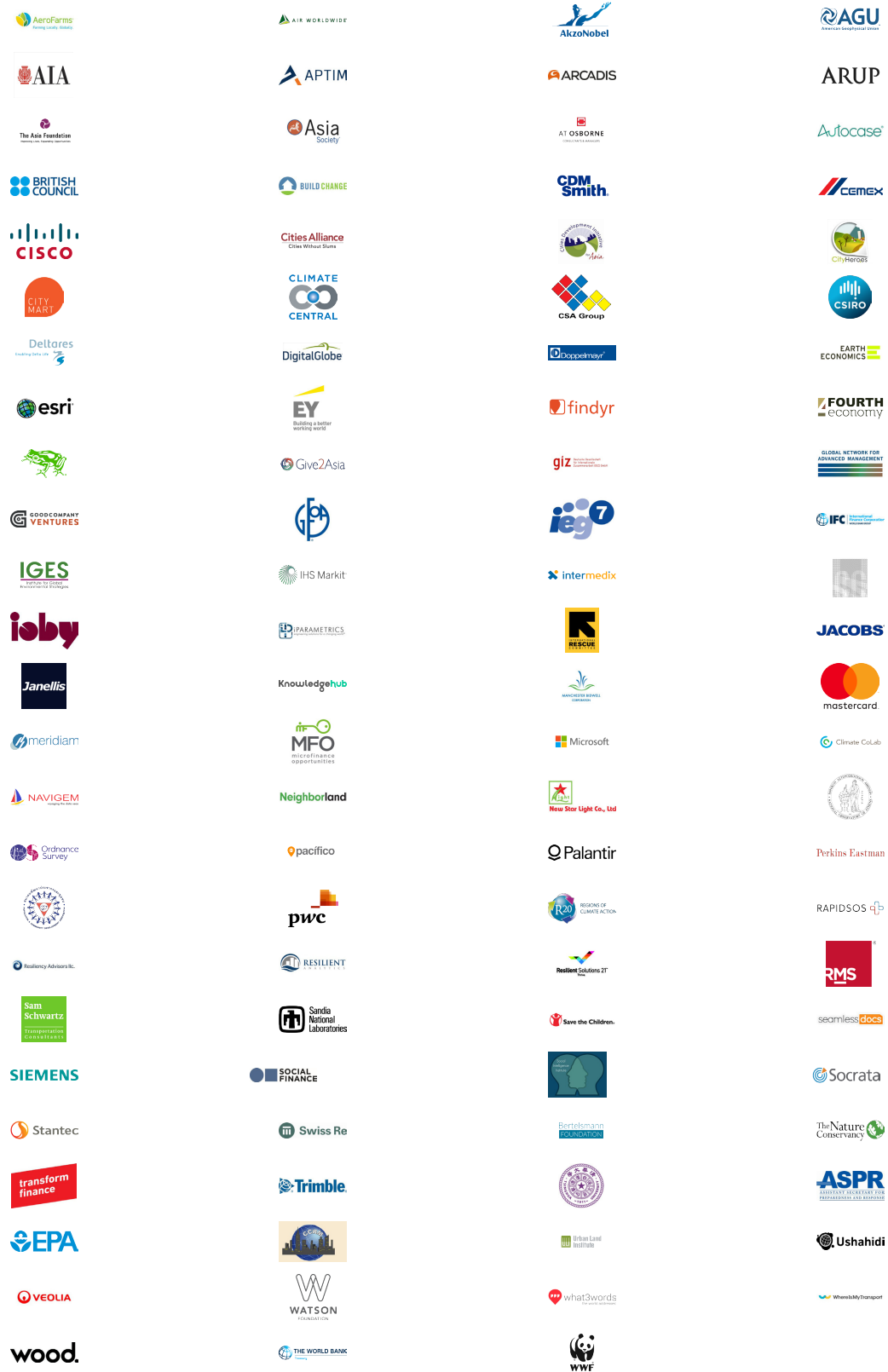


Figure 5.3. Platform of Partners - 2018. Source: www.100resilientcities.org

100RC Summits, consolidating the Network

As Paul Nelson, Director of Network and Learning at 100 Resilient Cities, portrays: *"One critical problem that 100RC helps cities overcome is the difficulty of sharing information about more and less successful initiatives and practice, which prevents existing resilience solutions from scaling"* [Nelson and 100RC, 2015].

In November of 2014 the first-ever Chief Resilience Officer Summit took place in New Orleans, where 100RC programme launched the **100RC Chief Resilience Officer Network** [Nelson and 100RC, 2015]. As Nelson and 100RC [2015] explains: *"This incredible event provided the first cohort of CROs the opportunity to come together for four intensive days to learn from one another and the living laboratory of New Orleans. It generated the personal and professional connections that are the bedrock of any strong peer-to-peer network"*. This activity opened the door for new different global summit and regional summits where city leaders, resilience teams, and partners could interact and find new further ways of collaboration [Nelson and 100RC, 2015].

As Nelson argued, in order to build a strong peer-to-peer network, its members must trust each other, at the same time that the network has to be based on needs, priorities and voices of its members. Within that first summit, the different CROs synthesised that the network should be: *"a trusted peer venue of confidence and information sharing where they can be honest about successes and challenges; a force for collective resilience advocacy, leadership, and mobilisation across 100RC member cities"* [Nelson and 100RC, 2015].

This first summit set the beginning for a personal and professional relationship among different CROs, where channels of communication were established in order to share knowledge that could foster the learning and the sharing of best practices and solutions among member cities of the program [Nelson and 100RC, 2015]. In this context, as Nelson explained, technology regards a critical tool that allowed the connection across time and different geographies. Here, the so called On-Line Community brakes spatial barriers and help to keep the connections and foster the collaboration among these actors.

As Nelson and 100RC [2015] highlight, the core of this Network is about people and not tools, the program has been working on providing the means that make easy the sharing of good practices, experiences, and solutions among CROs. Therefor, during 2015 100RC created the *Network Exchange Program*, which aim for creating the opportunity for co-create immersive learning experiences in relation to common resilience challenges, where cities can work together in order to find common solutions. In this sense, this network exchange it is seen as mean to strengthen connections among CROs, and between CROs' resilience teams, which will lead towards *"building a collective, global resilience-building knowledge base"* [Nelson and 100RC, 2015].

As Nelson highlights, beyond the formal 100RC Network channels, the different CROs are contacting each other in a regulary based, when searching for insights of their work, shearing good experiences, or supporting each other. In this sense, Nelson highlight the role of CROs when activating the network, and transforming this net into a part of their on space of work [Nelson and 100RC, 2015].

In this context, the CRO summits, represent a strong tool that empower the peer-to-

peer connections among human actors of this network. This is based on enthusiasm, experiences, and intellect that CRO put into the network, in order to create *"a powerful, peer-led catalyst for resilience building across the world"* [Nelson and 100RC, 2015].

Chief Resilient Officer (CRO)

As Michael Berkowitz, President of 100RC, introduces: *"the CRO is an innovative position in city government that ideally reports directly to the city's chief executive, and acts as the city's point person for resilience building, helping to coordinate all of the city's resilience efforts"* Berkowitz and 100RC [2015]. CROs are the central pivotal piece that helps to address the 100RC visions into the local level. Some of the core responsibilities are:

1. *"Work across government departments to help a city improve internal communication, address its own complexities, and surface new collaborations"*. In this sense, the CRO promotes new types of collaborations across significant internal divisions, at the same time that foster synergy among the different projects and plans that agencies are preparing.
2. *"Brings together a wide array of stakeholders to learn about the city's challenges and build support for individual initiatives that help the city build resilience"*. Among different stakeholders, it considers government officials, some critical representative from the private sector, non-profit organisations, and civil society.
3. *"Leads development of the city's Resilience Strategy, which unites the city's key resilience challenges and opportunities, and spurs the city to act on them"*. This is a six to nine-month process that stresses the city's resilience challenges. The following step will consider to put in action the different resilience-building initiatives, while assisted from 100RC and platform partners.
4. *"Ensure the city applies a resilience lens to everything it does so that resources are leveraged holistically and projects planned for synergy"*. In this sense, the CRO is the "resilience point person". Who is responsible for ensuring that projects potentially achieves multiple resilience goals.

[Berkowitz and 100RC, 2015]

As Berkowitz and 100RC [2015] portrays, an effective CRO should perform all these functions, searching for make resilience effort more impactful, at the same time that considers external collaboration in order *"to identify and integrate lessons other cities have learned, so solutions scale globally"*. Here addressing the challenges of complexity and scalability regards a way of contribute to the development of global community practice around urban resilience.

The Resilient Strategy

As Bryna Lipper, former Chief Resilience Advisor and Senior Vice President at 100RC, presents: *"The City Resilience Strategy is one of the tools that propels 100 Resilient Cities member cities in this holistic and integrated direction"* [Lipper and 100RC, 2016]. This tool, it is a product of six-to-nine months process where each city develops a deeper and better understanding of the challenges that are facing; evaluate its capacity to address those challenges; at the same time that connect and unites people, projects, and priorities, therefor cities can collectively take actions on their resilience challenges [Lipper and 100RC,

2016]. In this context, Bryna Lipper highlights: *"The document that is produced at the end of this process is not a master plan, but rather an expression of the cities' priorities for building resilience"*. Different member cities of 100RC network around the world, from Melbourne to Medellin, Vejle and Rotterdam among others, have developed and produced their first ever resilience strategy, reaching around 40 strategies at the first half of 2018 [Berkowitz and 100RC, 2018]. Resilience Strategies, not only represent a road map for each city when planning then means to become more resilience, at the same time, as more and more cities are taking this step, 100RC network is advocating for sharing this documents and process of developing them, all this in order to help others to learn from this work [Lipper and 100RC, 2016]. In this sense, Resilience Strategies are a fundamental tool to portray the process that each city will follow, but at the same time it becomes an important means when fostering the sharing of ideas to outsiders that can take them as inspirations. Resilience Strategies, become talkers of the network.

The components

One of the core principles when developing the Resilience Strategy, and within the development process, it is avoiding to reinvent the wheel. Building on what is already existing activities, projects and actions that underway regards fundamental perspective that resilience thinking contribute. This core principle, building on existing work, has the advantage that includes and brings together already aligned public and private stakeholders across the city. This characteristics represents a valuable asset of the strategy when lending political support and technical expertise to the resilience work [Lipper and 100RC, 2016].

"It is not a linear process, but rather an iterative one. The city will continually collect new information, synthesise and evaluate it, ask questions to help identify topics of focus, and bring in new partners and stakeholders from across the city"[Lipper and 100RC, 2016].

The resilient strategy is a concrete action plan that defines projects and different initiatives specially designed considering city's strengths and vulnerabilities. This *road map* gives the city a strong base to build resilience and triggers actions. As Lipper and 100RC [2016] explains, it spurring coordination, integration, prioritisation, and application of resilience thinking; it connects the city agents and the city itself with privates solution providers that will help when addressing city challenges and designing new tools if needed; and it defines a common and ongoing global practice of resilience.

How does it work?

As the following schema shows, the Resilience Strategies are made up of two phases, lead by the local CRO and 100RC. This phases are considering an important stakeholders engagement and inputs, coupled with the support from the Platform Partners, and collaborations and learning from other member cities of 100RC Network.

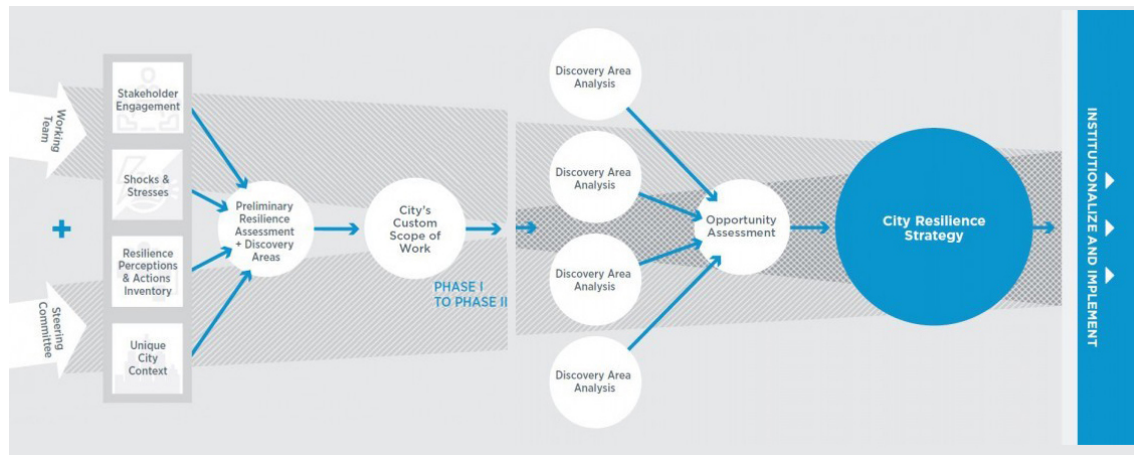


Figure 5.4. Resilient Strategy's phases [Lipper and 100RC, 2016]

During the first phase of development process, there is a intense focus on data collections that will inform the different decisions and further actions, engagement with local communities and stakeholders, acquire of an understanding how the city is functioning, and create a first preliminary work-plan defining what the city should focus on and why. In the second phase, the city consolidate the different outcomes, diagnostics and assessments in to concrete initiatives and projects. By evaluating the different focus areas previously defined, the city estimate its opportunities, and move further into workshops and more detail studies such as risk modelling or financing.

The final step in this chain regards the implementation of the Resilience Strategy. As Lipper and 100RC [2016] portrays, *"The strategy serves as a guide, articulating the city's priorities and the specific initiatives to reach them in both the near and long-term"*. But rather than being a static road map, the resilience strategy is an active document that requires to be constantly revised and adjusted while priorities are addressed and different initiatives are implemented.

Resilience Strategies as intermediaries expanding the boundaries of the 100RC network.

"Resilience Strategies are being utilised as a basis for investment; serving as a model for its counterparts" [Berkowitz and 100RC, 2018]

How was/is the network conformed? The process of enrolment

Within the 100RC network conformed around the idea of urban resilience, the 100RC program plays its role as main actor behind the creation of this web. This program, pioneered by The Rockefeller Foundation, it can be seen as trigger of different process of *interssesment*, understood as the definition of the actors that would be involved in this net; and processes of *enrolment*, understood as the actual engagement of those defined actors by using different strategies.

Through its mission of *"Catalyse an urban resilience movement"* [100 Resilient Cities, 2018a] the 100RC program has rapidly built a dynamic global organisation. As we describe above, this has been possible through 4 pathways that have define the role of this organisation: *City Action; Resilience Solutions; Local Leaders; Global Influence*. When

defining this mission, and the consecutive strategic pathways to pursuit it, 100RC program has defined the potential area of interest and the possible future actors that would be enrolled in 100RC network. As Michael Berkowitz, president of 100RC, portrays *"When we started this organisation in 2013, we had no cities, no staff, no CROs, and no Platform Partners"* [Friedman et al., 2017, p.7]. With this sentence, the President of 100RC is opening the welcoming letter within the document "Cities Taking Actions" which lead-up to the 2017 Urban Resilience Summit [Friedman et al., 2017], and at the same time it is highlighting what have been the four key actors that defines, to some extent, 100RC Network.

The following figure 5.5, extracted from [Friedman et al., 2017], shows the impacts that 100RC program has had in relation to its four strategic pathways.



Figure 5.5. Impacts of 100RC program under 4 pathways [Friedman et al., 2017, p.13]

It is possible to see as well that this figure talks about the itressement process under the four strategic pathways. City actions refers to the definitions of cities and its following resilience strategy. In numbers of 2018, 40 cities have lunched its resilience strategy. Resilience solutions refers to the active global network of partners that 100RC have created, and have offered to the members cities. Local leaders refers to the first processes of hiring a CRO that will act within the local government, and at the same time, it refers to its capacity to attract local actors the this network. Finally, Global influence can be seen as the way that 100RC is expanding this boundaries of its network and including new actors on it.

"Our collaboration with cities goes beyond standing up a CRO and setting a vision and a series of actions for building their resilience. We will continue partnering with them, and all of our global partners, during the most crucial stage, implementation—delivering solutions and institutionalising change for long term impact". [Armstrong and 100RC, 2017].

The enrolment of different cities

As we have mentioned, the Rockefeller Foundation launched in May 2013 the 100 Resilient Cities program during its Centennial celebration, and commitment towards coping 21st cities' challenges. The process of enrolment of cities has been divided in three different rounds: 2013; 2014; 2015. As Judith Rodin, former president of The Rockefeller Foundation (2005-2017), explained: *"each city was asked to present a clear and compelling description of how they are approaching and planning for resilience to decrease vulnerabilities"* Rodin and 100RC [2013].

For each process of application and subscription, each city was asked to present clear argumentation and captivating description of their big resilience challenges, introducing how they are and would approaching and planning for resilience in order to decrease vulnerabilities, and how they would pan to partner with 100RC program [Berkowitz and 100RC, 2014]. After receiving applications, the process of evaluation considered a careful review of applications, where a selected group of judges that included former presidents, were focused on recognising innovative mayors, a recent catalyst for change, a history o building partnership, and ability to work with a large and vary range of stakeholders [100 Resilient Cities, 2018a; Rodin and 100RC, 2013].

The first, announced in mid 2013 coupled with launching of 100RC program, it ended in December 2013 with the selection of 33 first resilient cities. In that occasion, the program received *"more than 1,000 registrations and nearly 400 formal applications from cities around the world"*. The second round of cities was announced in December 2014, where 35 new member cities were selected. In that occasion, the program received over 330 application from 94 countries. Finally, the third round of 100RC enrolment process was announced in November 2015, and it ended with the final group of 37 cities in May 2016 [100 Resilient Cities, 2018a; Berkowitz and 100RC, 2016]. From 100RC perspective, this is not an ended process, but rather it is expected to expand the number of cities that will be include, and influence by the work that 100RC has initiated. As the President of 100RC portrays: *"100 is just the beginning. There's a great deal of work ahead to bring this movement to 1,000, then 10,000 cities. In the meantime, we look forward to working side-by-side with these 100 visionaries to build their own resilience, and in the process, a more resilient world for all"* [Berkowitz and 100RC, 2016].

The Following figure is showing the three different rounds of enrolment and the cities that where chosen at that time.



Figure 5.6. Map of Member Cities. Source: [100 Resilient Cities, 2017a].

As we presented before, it is possible to recognise that 100RC used different mechanisms when making the process of enrolment attractive for the different member cities of this network. As Callon [1991] portrayed, intermediaries are actor/actants that helps to connect and move ideas between the different actors. In this sense, when 100RC presents the benefits that member cities will have access to when joining this network, it is presented the way that intermediaries are used to build the net. These intermediaries are arguable connected to the 4 pathways that 100RC has defined to accomplish its mission, which are connected to the following benefits that member cities have access to:

- Economical support support to hire and empower a Chief Resilience Officer, a central point of contact within each city.
- The support for that Chief Resilience Officer to develop a resilience plan.
- Access to a platform of partners and services to support the implementation of such a strategy.
- Connection to other Network members, to share what works, spotlight success, and advance both global and regional dialogues on urban resilience.

[Rodin and 100RC, 2013]

Enrolling Chief Resilient Officer

The process of enrolling the different Chief Resilient Officers has been equally defined within the 100RC 4 strategic pathways to achieve its mission. Through economical support,

100RC is fostering that each member city hire a CRO that will work as a pivotal point between the program and the city. The 100RC economical support to each city can be seen as intermediary to create the point of connection between the 100RC network and each city. As Ulla Varneskov, Chief Resilient Officer in Vejle city, explained: it was responsibility of each city and local government to define and suggest its Chief Resilient Officer. As Ulla explained, through this mechanism of local empowerment, 100RC secure that each city would find the right person to assume this strategic role, at the same time that having local support from local authorities and politicians due to its already local connections and roots.

Enrolling the Private Sector through Platform of Partners

As it is stated in different documents and reports that 100RC has elaborated, the collaboration between sectors represents a fundamental action that 21st challenges required in order to be coped. As final section of the report "100RC: Catalysing the Urban Resilience Market" conclude: *"One thing is clear – cities can formulate policies and learn from one another, but resilient cities can only be built with collaboration from the private sector"* [100 Resilient Cities, 2017a]. Here, there is a clear invitation to the private sector to be part of this global movement in order to *"work with 100RC to address these new market demands"* [100 Resilient Cities, 2017a].

Within its strategic pathways, 100RC has stated the aim of resilience solutions, which will be accomplished through the creation of large and varied platform of partners that would offer it help to cities when developing its resilience strategies and solutions. As 100RC acknowledges, the challenges that 21st cities are facing nowadays, represents an opportunity for developing new innovative solutions and tools as well. This is portrayed as an increasing market that partners can have access when developing new solutions that can offer to other cities. This idea is synthesised in "Catalysing the Urban Resilience Market" report when saying: *"As you and your company invest in the communities and economies of the 21st century, thinking and planning "at city-scale" will become ever-more important, with an ever-growing market for the most optimal and scalable solutions to pressing urban challenges. 100RC's vanguard network of cities is leading the charge"* [100 Resilient Cities, 2017a]. As the President of 100RC resumes, this strategy of enrolment has had a large impact over city when developing strategies and solution. *"to help get these Resilience Strategies off the ground and put them into action, our partners have pledged nearly \$230 million in pro-bono solutions and services to our member cities"* [Berkowitz and 100RC, 2018]. On the other hand, as the CRO of Vejle comments, the benefits that these partners can get from this partnership is not always a straight-forward process, because each city represent a particular reality and contains peculiar challenges that not always are scalable and directly translated to other cities.

Enrolment of Local Actors

The process of enrolling local actors represent a particular role that CRO would assume when planning and developing the resilience strategy and particular solution. In this sense it is possible to highlight that 100RC has planned the strategy to involve the local government through the sign of "Pledge" that involves the economic compromise of the 10% of the annual budget, which should be focus towards implementation of resilience

strategy or solutions. As it is portrayed by 100RC *"The 10% Resilience Pledge urges mayors of 100RC cities to make the most ambitious commitment to city resilience in history, promising 10% of their cities's annual budgets toward resilience-building goals and projects, without raising additional funds or taxes"*. [100 Resilient Cities, n.d.]

As the final part of the pledge states: *"As a result of my (understood as each mayor from member cities) commitment to the 10% Resilience Pledge, 100 Resilient Cities commits to make available Platform Partner goods and services worth up to 5 million US dollars over the next five years to support [city]'s resilience building efforts"* [100 Resilient Cities, n.d.]. Even though the role of enrolling and coordinate local actors belongs to some extent to the particular CRO, through this compromise 100RC as a programme ensures the involvement of local authorities and therefore its political support. Here again through the intermediary are embodied through the access of economical support and the large know how that the platform of partners and 100RC is offering to member cities.

In this section we have discovered how the network of 100RC as defined. In short we can argue, that the network has been fitted the 100RC programme; building a network allowing the idea of resilience to travel, and be supported and reinforced along the way, from the global network of 100RC and into member cities. After presenting our sub-conclusion for research question 1, the thesis will continue on how resilience and the inclusion of Vejle as a partner in 100RC have influenced planning practices and Vejle as an institution.

5.3 Chapter Conclusion

The aim of this section is to conclude on the empirical findings regarding the conceptualisation of urban resilience portrayed by the 100RC network and how the network, which consists of actors and intermediaries to support the travel of urban resilience, are organised. This section will in short answer sub-research question one; *How is 'urban resilience' conceptualised by 100 Resilient Cities and how is this network organised?*

urban resilience is within 100RC understood as a measure for how capable inter-urban systems are at surviving, adapting and grow when being disrupted. This conceptualisation shows clear correlations to the more ecological and evolutionary framing of resilience, focusing on systems ability to absorb disturbances while still maintaining functional (surviving) and being able to adapt to the complexities of constant change, and if desirable, transform into more desirable configurations (adaptable). urban resilience is also acknowledging the challenges that cities are facing, either caused by chronic stresses or acute shocks, and the increasing uncertainties in the 21st century. While we perceive the definition as perceived rather ambiguous, the additional Resilience Framework, portrayed as the remedy to build resilience into urban systems, seeks to practise the concept by providing holistic lenses for understanding a city's vulnerabilities and potential enhancements. However, while the framework seeks to bridge the rather ambiguous term into something more concrete and applicable, it shows extensive and ambitious character, aiming to encompass many different concepts relating to climate adaptation, sustainability, risk assessment and predictability etc, at once. These characteristics and desired outcomes are what we will try to see, if we can identify how Vejle has implemented the concept into their own planning practices, which the next chapter focuses on.

When defining the network, 100RC program has played a key role by defining its mission of "*Catalyse an urban resilience movement*", and defining four strategic pathways to accomplish it: *City Action*; *Resilience Solutions*; *Local Leaders*; *Global Influence*. Through this process, the global network around 100RC idea of urban resilience has determined its main actors: First of all, 100RC program emerged as trigger of this network and catalyser of the movement. Second, by defining the Platform of Partner and its role of supporting cities' resilient process, 100RC has integrated a large range of experts in to the Network. This process is in a continues expansion. Third, Chief Resilient Officers represents a new position within the local government that assume the role of leading the local processes of becoming a more resilient city, at the same time that act as pivotal actor connecting the global level of 100RC and platform of partners, with the local and ground level of the city and its specific stakeholders. Fourth, the resilient strategies represent an holistic tool that consolidates the challenges that cities are facing and transform them into opportunities of development by defining goals and concrete actions. The resilience strategies at the same time helps to expand the horizons of the network when sharing the particular ways of facing challenges, and when helping for inspiration for other cities/ actor within and out of the network. Finally, an important point is made by considering 100RC and CRO summits. This moments helps to consolidate the peer-to-peer network and reinforce the collaboration and connections among different human actors within this network. They represent a concrete channel of communication that facilitate the transferring and sharing of good practices, good solutions, and at the end, the consolidation of the idea behind the program: urban resilience. Similar as the definition of the main actors, the process of enrolment it is arguable connected to the 4 strategic pathways that 100Rc has defined. The main strategy used behind this enrolment process is the "economical" support that each city receive when becoming a member, the attractive access to an extend platform of different specialist that will help during the process of building the resilience strategy, and the ability to be part of a large net of other members that can help along this process. It represent an interesting finding that, sharing responsibilities by empowering local actors it is arguable an strategy of enrolment as well. Even though CROs are the main responsible of including local actors, by the signing of a "Pledge" that compromise 10% of the annual city budget, 100RC is not only enrolling the local authorities, but also empowering them in order to become active participants in this process.

In short, we can say that 100RC conceptualises urban resilience as a practice and mind-set that promotes to incorporate the 7 qualities of resilience in everyday planning practices, and that 100RC have developed a comprehensive network to support urban resilience to travel and become part of local institutions. The the next chapter will unfold the process of translation of urban resilience, as a travelling idea, by considering Vejle as case of study. This will be build under ANT and translation models. Further, considering the same case of study, the chapter will analyse what are the implication of this process over local institutions. This analysis will be enlighten by institutional change theory, helping us to understand how local practices are integrating resilience thinking and helping to *institutionalise changes for long term impact* of the program [100 Resilient Cities, 2016a].

Local Context:

Translation of the Idea & Institutional Changes

6

This chapter will introduce the case of Vejle as a member city in the 100RC network and afterwards unfold the second sub research-question regarding: *How is urban resilience , as a travelling idea, translated in to local context of Vejle, and in this process, how are local institutions adapting to it?* Similar to the chapter before, this question is compound by two parts. The first, regarding the process of translation of urban resilience into the local context. Here, the four steps translation model from Callon [1986]; Tait and Jensen [2007]; Nicolaisen et al. [2017] will be used to understand this processes within the local context of Vejle. The second part of this questions follows the rationale behind the cycles of ideas presented in the section 3.5: Theoretical Framework. In this sense, when ideas are translated into the local contexts, they become quasi- objects and object, this process leads towards actions, and when this actions are translated and repeated they become institutionalised. Having this in mind, the second part of this sub-questions focuses on institutionalisation of actions and institutional changes as consequence of the integration of new ideas into the local context of Vejle.

6.1 Case of Vejle

The aim of this section is to introduce the case of Vejle and its process of becoming a member of 100RC. This has been chosen as basis for this research as the main case of study.

Vejle is the 9th largest city in Denmark with a population of 55.000 citizens. Vejle is located in Southern Jutland in the financially attractive Triangle Region formed by the triangle between the cities Kolding, Vejle and Fredericia. Vejle is the largest city in Vejle Municipality that has a total of 111.000 inhabitants making Vejle the 6th largest municipality in Denmark.



Figure 6.1. Vejle's location in Denmark. Based on [100 Resilient Cities, 2016b]

The name 'Vejle' comes from an ancient Danish word 'wæthel' which can be translated to fjord. Vejle is located at the fjord of 'Vejle Fjord' and since the first settlements the water has been an important asset and symbol for the city. The location at the river have had a large impact on the industry of Vejle, serving as a beneficial location for shipping trade, which is still characterising the city. However, today the location of Vejle at the logistical centre of Denmark has helped the city in recent decades to attract more creative businesses and IT-companies. Vejle is one of three parts of the largest regional collaboration called the Triangle Region.

Vejle at the water

While the location at the fjord is considered an important asset, both historically as well as today as an attractive urban environment, its also a challenge for the city. Vejle is designated as a risk area together with 10 other danish cities by the Danish Coastal Authority [The Danish Nature Agency, 2011]. Cities that are particular exposed to flood risks due to rising sea levels, increasing rainfall and flooding. The coastal areas, the city centre and the harbour of Vejle are particularly vulnerable to climate change. The water and sewage systems does not have sufficient capacity to handle heavy rain and flooding, which many times have led to expensive flooding in the city. When the water levels are peaking in the fjord and the nearby streams, which outlets are in close proximity to Vejle, the city becomes exposed which have led to several storm surges throughout the citys history. During summer 2015 a cloudburst hit Vejle with rainfalls of 70mm in one day resulting in over 50 registered reports of flooding in private homes, cancelled trains and temporary closing of multiple department stores and supermarkets [TV2] [Berlingske, 2015]. Events like these, and the fact that the chances of even worse water flows in the

future are increasing, leading to the predictions that Vejle will be under water in 2100, have led the municipality of Vejle to initiate a comprehensive emergency response to mitigate the impact of similar events in the future [100 Resilient Cities, 2016b, p. 31]. However, the municipality are keen on exploring new innovative solutions that can completely prevent devastating events associated with increased water and in the meantime create attractive urban environments in the exposed areas close to the water [100 Resilient Cities, 2016b, p. 20].



Figure 6.2. Photo taken from Staldsgaardsgade in Vejle in 1941 [Vejle Stadsarkiv, 1941]



Figure 6.3. Photo taken in a residential area of Vejle in the summer of 2015 [Ingeniøren, 2015]

Vejle in the 100 Resilient Cities programme

In 2013 Vejle applied for membership in 100 Resilient Cities, and was chosen among over 700 applications in total, together with 32 other cities as a part of the first round of enrolment [100 Resilient Cities, 2015]. The network expands worldwide with member cities as New York, Cape Town, Mexico City, Salvador, London, Rotterdam, Seoul, Bangkok and so on. Vejle is the only city in Scandinavia to be selected [100 Resilient Cities, 2018a]

"Cities from across the world will develop a resilience road map and share best practices to tackle the physical, social and economic challenges facing the 21st century" [100 Resilient Cities, 2016b, p.4].

Three years later in 2016 Vejle released its Resilience Strategy as the first member city to do so in Europe. Arne Sigtenbjerg, at the time mayor of Vejle, expressed the network as:

"Membership of the 100RC network offers us a fantastic opportunity to collaborate with a range of international players with the goal of making Vejle

a more resilient city. Over the past 3 years, we have focused on identifying challenges and opportunities to develop our city into an even better place to live for all our citizens. Vejle seeks to turn its current challenges into opportunities. Our ambition is to become an innovative lighthouse that demonstrates how small cities can solve big problems and show great responsibility. With our resilience strategy we invite all partners to action and cooperate in the development of tomorrow's resilient Vejle - a cohesive, robust and sustainable city." [100 Resilient Cities, 2016b, p.6]

The former selected Chief Resilience Officer in Vejle, Jonas Kroustrup, marked at the release that with the resilience strategy Vejle is *"constructing the foundation for the coming generations and securing a city and society that is prepared for what tomorrow brings"* [100 Resilient Cities, 2016b, p.10]. The president of 100 Resilient Cities, Michael Berkowitz also marked his expression and gratefulness of how the City Council and the Mayor of Vejle have shown passion and been visionary in the process of developing the resilience strategy. Berkowitz acknowledges the efforts of Vejle to integrate resilience as an organizing principle and predicts that Vejle can become an inspiration to other cities in the region. In terms of the concept of resilience and how it matters he adds;

"Building city resilience requires recognizing the interplay of a city's strengths, weaknesses, shocks, and stresses. It is also about bolstering the foundation of a city so that it can respond to new, unforeseen events, and plan for the unknown [...] This strategy, which is the result of many months of research, stakeholder engagement, self-assessment, and analysis, looks to identify a tactical road- map for the future. It identifies a range of goals and concrete initiatives which will address the interplay of the city's challenges and opportunities." [100 Resilient Cities, 2016b, p.7]

Vejle's Resilience Strategy

The Resilience Strategy made by Vejle municipality, with guidance from 100RC and ARUP, aims to strengthen the overall foundation of the city. The purpose of the strategy is also too identify the core challenges and plan how to respond to the city's needs. The core challenges are within the strategy identified as:

- Climate change and flood risk
- Urbanisation
- Infrastructure Demand
- Changing industries, global economy and new technology
- Demographic changes in society

[100 Resilient Cities, 2016b, p.12]

The goal of the strategy is not only to identify the threats, but also their long term implications and how the challenges should be addressed. Through the resilience strategy, the municipality of Vejle wants to consider the following:

- How do we ensure that the children and youth of tomorrow, including vulnerable people and immigrants have the best conditions to meet a new reality?
- How can Vejle strengthen its foundation for sustainable growth and development turning its future challenges into new opportunities?
- How can Vejle continue to be an inclusive, safe and secure society despite social and demographical changes?
- How can we create an attractive city environment while simultaneously protecting Vejle from climate change?
- How can Vejle keep up with regional urbanization, changing industries, new technology and global economies?
- How do we collaborate to make Vejle the resilient city of tomorrow and secure a prosperous future?

[100 Resilient Cities, 2016b, p.13]

The resilience strategy made by Vejle municipality with guidance from 100RC is build around four strategic pillars, 12 goals and 100 actions. The purpose of the strategy is to;

1. A co-creating City
2. A Climate Resilient City
3. A Socially Resilient City
4. A Smart City

In terms of the first strategic pillar, the goal is to strengthen the link between the public and privat sector by building productive partnerships. Vejle wants to use co-creation between the two sectors to build resilience capacity, or in further details; *"to work with those who have the drive and desire for action - be it locally, regionally, nationally or internationally.* As for the Climate Resilient City pillar, the overall goal is to use the water and climate change as an asset as well as a driver for the development of Vejle. Vejle wants to adapt to climate change by develop coastal protection and in the meantime, create attractive urban environments where the water becomes an asset instead of a challenge for the city. A socially resilient city is identified as one of the main goals of Vejle municipality. Within the process of identifying the main threats for the resilience strategy, the municipality have completed 'diagnostic analysis' that suggests an increased risk of polarization of the civil society in the city. The tool also raised a concern for the youth of Vejle, due to a widening gap of social cohesion between sections of the population across culture and economic. The idea is, that building social resilience will *"reinforce the societal shift form compensation thinking to resource building"*. [100 Resilient Cities, 2016b, p. 21]. At last, the 'Smart City' is a goal in itself to create a more efficient society. In the resilience strategy, Vejle municipality explains that by embracing new technologies and improve co-creation, the city will be capable of: *"generate efficient and innovative ways to adress a variety of challenges around both climate change, urban development and economic growth whilst also improving our social resilience"*., indicating that urban resilience goes beyond climate change adaptation, risk management, social cohesion and urban development [100 Resilient Cities, 2016b, p. 21].

Vejle in 2050

Within the Resilience Strategy there is a chapter about the vision of Vejle as a resilient city. The vision in terms of municipal practices is to make resilience as a concept central for the development of visions and plans within the municipality's organisation. Furthermore, the vision is that local businesses, housing organisation and education institutions will work together with the municipality to address the challenges and to collectively incorporate resilience into future municipal plans and refine long term planning within the municipality. The first action of 100 in total is to establish a 'Resilient Vejle Committee' with housing, businesses and education to monitor and coordinate actions across the different stakeholders. Another noteworthy action is to develop a new urban part of Vejle called Rosborg, which will be used as a laboratory to explore innovative solutions to address the challenges and opportunities of the city.

What is next?

With the Resilience Strategy the municipality of Vejle have identified possible challenges for the city and how to address them. However, in order to address these challenges it is necessary that the strategy is turned into actual actions. Within the Resilience Strategy, Vejle have defined some main actions which are to ensure that the ambitions and goals of the strategy are met. One of the main actions is to normalise 'resilience' and make the concept central within the Municipal Plan and other policies and strategies. Another action is to establish partnerships, such as a 'Resilience Lab' in which housing associations, businesses, research institutions and the municipality can collaboratively deliver resilient actions. Furthermore, Vejle wants to maintain their engagement with 100RC and other Platform Partners, such as other member cities, to exchange knowledge and experiences and to learn from other best practices. At last, Vejle wants to institutionalize the resilience strategy by creating a new organisational structure of the municipality, including the instalment of the CRO position.

6.2 Translation of the idea into the local Context

This section aims to understand how urban resilience is travelling from the global level of 100RC Network to the local level Vejle, by process of translation. Drawing on ANT, this section will understand how the steps of: *problematization*; *interessment*; *enrolment*; and *mobilisation* have been carried and generated the embedding of the idea in Vejle. Inspired by ANT and the translation model, this section will be organised following the four steps of translation. However, it is important to acknowledge that during the analysis it has been possible to realise that these four steps are rather complex and interconnected than a sequential procedure, and processes of translation happen to some extent simultaneously at different levels. This also speaks about the complexity regarding the process of creating a new network around the idea of urban resilience, at the local level.

Enrolment of Vejle into 100RC network

As Ulla, CRO at Vejle Municipality, explains: the recognition of the 100RC network was rather coincidental;

"We have a unit or department within the city called 'Vifin' (...) what they do is a fund-raising unit (...) they found the 100RC, which is something, as you maybe know, that you apply for (...) So they did the application, and then we got called to New York, and nobody really thought that we would be selected."
[Varneskov, 2018, 06:38]

As explained, an external fund-raising unit in Vejle discovered the 100RC programme, likely because of the financial benefits. Ulla further explains, that the fund-raising unit are experts on EU and international funds, and have existed for more than 10 years, providing funding for the municipality to initiate different projects [Varneskov, 2018, 06:38]. At first hand, this might seem as Vejle applied for the programme for economical interests, but Ulla further explained, that Vejle, and probably many other cities worldwide, have a bad tendency to "not look out to the world enough" [Varneskov, 2018, 14:46]. Ulla mentions, that cities tend to develop new solutions to solve not necessarily unique problems; "cities working on sort of the same issues". After presumably short time of consideration, the fund-raising unit developed the application and the Mayor of Vejle was alongside the consultant from the fund-raising unit invited to New York city, to great surprise [Varneskov, 2018, 06:48].

"and we got selected. And everybody was sort of surprise that it happened, cause looking at the other cities (...) you know, well famous, huge cities, and we are just like a small city in Denmark (...) and so they then came back and they were: "ok, so now we are a 'resilient city", and then we sort of had to find out what we are going to do now"

This event, Vejle joining 100RC network, is a mile-stone that triggers the beginning of translation of urban resilience from 100RC, and its adaptation into the local setting of Vejle; a process called 'building resilience' as explained by 100RC.

Preparing the landing field, the local labelling

As presented in chapter 3 and section 3.3 3.2 when ideas travel, and are re-embedded in new context by process of translation, *local labelling* helps to insert new ideas in existing action patterns. The definition of broader conceptualisation helps to integrate the new idea into the local context by the linguistic action of giving a label [Czarniawska and Joerges, 1996]. In this context, the definition of a Chief Resilient Office that belongs to the local context, and acts as connection point between the global and local level, it represents a key definition towards the embedding of urban resilience in Vejle, as Konstantina explained, to start mainstreaming resilience in the city [Karydi, 2018, 27:40 & 30:44]. In this context, the CRO acts as pivot and intermediary by gathering knowledge and working as "ambassador" of urban resilience.

Vejle's CRO and Executive CRO

As described early in chapter 5, one of the requirements from 100RC to member cities regards the definition of a *Chief Resilient Officer*. In order to ensure this position at the local level, 100RC has made available the direct financing support for hiring the CRO and

paying its salary and travelling expenses for two years. As we realised early, this strategy can be read as *enrolment* step within translation of urban resilience at global level of 100RC network.

The role of the CRO is to act as the central pivotal piece that helps to address the 100RC visions into the local level. The former CRO in Vejle, which in 2017 left the municipality and which position was replaced by Ulla Varneskov, was hired from outside the municipality and inserted in Vejle Municipality at director level and answering directly to City Manager, which was a demand from 100RC [Varneskov, 2018, 06:38]. Even though, as Ulla explained, this position (CRO) in Denmark is not the stronger one, because in order to act at director level, it requires a "portfolio", therefore, Vejle adapt this position by creating an "Executive CRO" role that City Manager assumed in order to gain weight at political and director level of Vejle [Varneskov, 2018, 29:20]. This will be further analysed in next section, institutionalisation of urban resilience.

In order to empower the CRO in its role, 100RC has created different mechanisms to "educate" this actor in urban resilience, at the same time that made available for them constant support and reinforce of their capacities. This action can be seen as a way of *energising the travelling of the idea* by empowering the key local actor, understanding that people's actions provide the required energy for an idea to travel. As it was explained by Konstantina, the CRO is required to participate in different type of 'training sessions': "*We have training programmes in terms of the implementations, environment trains like personal training, and one to one sessions, communications sessions. We asses their skills basically*" [Karydi, 2018, 43:46]. In this sense, by supporting, including and training Vejle's CRO, 100RC ensures the right installation of urban resilience at local level.

"Unpacking" urban resilience in Vejle

As we described in the previous chapter 5, in order to create a well defined network that ensures the travelling of urban resilience world wide, and with this defining the means to reach its long term vision, 100RC has *stabilised* the idea of urban resilience into different *objects* such as: resilience framework, resilient index, resilience strategy, different manuals and procedures, and so on. From ANT perspective, the *stabilised idea* in the form of objects, for example the resilience framework that help to develop the resilience strategy at local level, are defined as "*black boxes*", and *require unpacking* [Tait and Jensen, 2007]. In this context, the "unpacking" of urban resilience in Vejle, and arguable in the other 99 cities that compose the 100RC network, it refers in a first place to the development of City Resilient Strategy. Therefore, when looking at the process that Vejle has followed when translating urban resilience, we acknowledge and argue that it mainly regards the different processes that the resilience strategy development considers, involved, and generate as following actions. As we have mentioned before, during this analysis we realised that the different steps named within the translation process occurred simultaneously, or very closed related, which also speaks about the complexity behind the translation process.

Before that the resilience strategy development process began, two actions took place in Vejle Municipality. First a resilience team was formed, composed by anchor-person, or coordinators, from each department within the municipality to "facilitate the whole strategy work" [Varneskov, 2018, 10:29]. This can be read as a first process of enrolment,

that defined the key persons within the municipality network, and who started with the work of the resilience framework. Through the process of the resilience strategy development, different process of enrolment took place, but this will be unfold later. Second, Vejle was coupled with ARUP, one of 100RC platform partners, that helped and assisted Vejle throughout the whole process of developing the resilience strategy, and "*helping [Vejle] to go through the specific processes*" [Varneskov, 2018, 59:59]. As we have explained before, ARUP also developed together with 100RC and Rockefeller Foundation the resilience framework and further resilience index, used to evaluate and asses urban resilience, 'identify critical gaps and strengthen the city's immune system' 5.1. Under ANT and translation model, ARUP has played the role as *intermediary* when helping to move the idea of urban resilience from 100RC to Vejle, taking the 'black box' and 'unpacks' it. As Dima portrays:

To develop the strategy we follow a standard procedure which 100RC have setup (...) so you start with assessing the current resilience performance for the city, and for that there are number of different tools, and we use the City Resilience Framework, to understand where the strengths and weaknesses are in the city. After we have identified the strengths and weaknesses, we help the city to focus on the areas where they really need to improve, to become more resilient [Zogheib, 2018, 9:15]

The role as intermediary has been based on ARUP's extensive knowledge in urban resilience, its role as consultant that guide the application of resilience framework in Vejle, and its assistance when developing and writing the resilience strategy.

Problematisation; Interestment; and Enrolment as interconnected steps

As we explained in chapter 5, the resilience strategy has the double function of: developing a deeper understanding of the challenges that cities are facing, and evaluate its capacity to address them (problematisation step); and at the same time helps to create the platform and spaces for connection between people, projects and priorities (interestment & enrolment steps). Under the resilience strategy framework this two steps are closely related base on *theory of collaboration* that 100RC foster and embrace [Karydi, 2018, 27:30]. As Ulla explained, when working through the resilience strategy: "*...this was, for instance one of the first times that we could say it was ok for us to say: we do not know the answers, you have to help us and be a part of finding the answers, saying that both to the community, and to the NGOs, and within the organisation*". [Varneskov, 2018, 14:46]. In this sense, the development of the resilience strategy and the operationalisation of urban resilience as method, has been designed with the capacity to enrol differ actors during its process of development. In this sense, when Ulla mentioned that it was ok for them (resilience team and municipality) to as for help in order to find the answers, it also refers to the activation of existent networks that were working around specific projects and challenges within the city. As explained in chapter 5, one of the components of the resilience strategy considers the principle of building on the existing work, which has the advantage of bringing together already aligned and connected public and private stakeholders. The following picture 6.4 is extracted from Vejle's resilience strategy and refers to the process of collaboration , mixing the steps of problematisation, interestment and enrolment while developing the strategy.



Figure 6.4. The resilience strategy process [100 Resilient Cities, 2016b, p. 54-55]

As we explained in chapter 5, the resilience strategy development is divided in three main phases: Phase 1, focused on local data collection and recognition of shock and stresses, engagement with local communities and stakeholders, and acquiring deep understanding of how the city is functioning. As konstantina explained: during this phase 100RC *help them [Vejle] to understand what resilience is about, what the problem entails. We help them to build the actual position within the city (CRO)* [Karydi, 2018, 27:30]. In Phase 2, the city condense the different previous outcomes, diagnostics and assessments into concrete initiatives and projects. In this phase the city evaluate opportunities and move further into more detail studies and workshops. The final phase regards the implementation of the resilience strategy.

During the first two phases, Vejle had ARUP as strategic partner that helps to apply the resilience framework in Vejle. As dima explained, it build an understanding of the cities fabric, help them [in this case Vejle] to identify gaps and come up with possible solutions that can become concrete actions as a part of the strategy. As Ulla explained, the role of ARUP was fundamental when applying such a elavorated tool, and at the same time she highlighted the challenge that represent to create a tool that should work either in Scandinavia and India, in her words: *... "it make it a little bit difficult at times (...) some elements being less meaningful."* [Varneskov, 2018, 59:59]. As Dima explained, when applying the resilience framework on Vejle, the weak and strong-points are identified in terms of resilience. This also means, as Ulla mentioned, that some of the 12 goals in the framework were irrelevant for Vejle, and therefore could be cut away. Here, the holistic lenses, the framework, are used to analyse Vejle's 'resilience baseline' and make the work with the resilience strategy more oriented towards assessing the weak-points. In this process, which we recognised as the problematisation process, the solution provided from 100RC and 'unpacked' by ARUP is being re-configured to fit in the local context. After the framework have been applied, and the resilience strategy has been specialised to address the specific local challenges, the concrete initiatives, to close the identified gaps,

are determined. Here the translation process plays a key role, since the concept of resilience is not only a 'word', but the conceptualisation of resilience does also entail, that cities work together on solving many of the same issues. Therefore, the solution can be found through other cities or platform partners experiences and best-practices, which are for an example shared at annual CEO-summits [Varneskov, 2018, 27:19].

As it is possible to be recognised within Vejle resilience strategy, *"Through cooperation with 100RC, Vejle has gained access to a framework, methods and tools for diagnosing shocks and stresses, and for enhancing resilience through strategic urban development. We held a number of workshops to develop an understanding of the shocks and stresses facing the city, the vulnerable assets, people's perceptions and the city actions". [100 Resilient Cities, 2016b, p. 58]*. In this quote it is possible to see the value that Vejle perceived when joining 100RC network, and at the same time it is talking about the way that the problematisation process led towards the enrolment of specific departments within the municipality. Jakob Østergaard, Planner in Vejle Municipality supports this when asked if the planning department was included in the process of developing the resilience strategy:

"... well we were asked to come with the ideas, the project, resilience projects, which could be included in the strategy. But we also actually took part in the workshop, where we defined our challenges, to look out where our strengths, weaknesses, opportunities and threats, kinda SWOT, it was called the resilience wheel i think. So I was a part of that workshop, along with politicians, companies, social workers, a lot of different people. With a lot of different backgrounds" [Østergaard, 2018, 9:35].

This shows that through the process of resilience strategy development, the problem has been defined in a collaborative way fostered by the Holistic perspective that resilience brought, and at the same time worked as interestment and enrolment process when Vejle utilised the Resilience Team alongside politicians, private companies, social workers, and so on, to identify all types of challenges that Vejle would face. During this process, Vejle discovered the 5 core challenges they are facing, which are to be assessed in the Resilience Strategy. As described in the 6.1 the five challenges are; Climate change and flood risk, urbanisation, infrastructure demand, changing industries and demographic changes in society.

Mobilisation

The resilience strategy

The consolidation of around 6 to 9 months of work in terms of the development of the resilience strategy is a written document, Vejle's Resilience Strategy. As explained by the Chief Resilience Advisor and Senior Vice President at 100RC, rather than being a static road map, it is an active document, that requires to be constantly revised [Lipper and 100RC, 2016]. In the same line, the president of 100RC explained that resilience strategies are being used as a base document to define investments in the city, at the same time that they are serving as examples and models for counterparts [Berkowitz and 100RC, 2018]. Under ANT perspective it is possible to be recognised that Vejle's resilience strategy is an Actor that started to talk for the network within both: the local level of Vejle, as playing this

role of strategic road map for the future resilient city development; and at the global level of 100RC as inspiration for other cities, and as publicity for the work that 100RC is doing when consolidating this global movement around urban resilience. In this sense, Ulla explained, Vejle's resilience strategy was meant to be a mobilising strategy:

"We did what we call a mobilising strategy, like an invitation for cooperation. Saying this is what we think of the challenges, this is what we think could be some of the solutions, pleas join us in realising the visions." [Varneskov, 2018]

Ulla here mentions, that Vejle used the Resilience Strategy to outline what 'resilience projects' they wanted to initiate and also use that as an open invitation for cooperation with other organisations and partners. One of the issues that Vejle are working with, and have identified in the Resilience Strategy, is the proximity to the water which have resulted in flooding many times before. To adress this issues, Vejle has been working on a dike in Fjordbyen, the urban part of Vejle closest to the fjord. To develop this dike, Vejle searched help through the network of Platform Partners, and was enrolled with Arcadis, a dutch firm specialized in water management, which visited Vejle, held workshops in the city with citizens, and provided Vejle with three different solutions to adress the issue, for free [Varneskov, 2018, 01:09:30]. This mobilisation of concrete actions to support the idea of resilience is what the next chapter will look further into.

Vejle's CRO and Excecutive CRO

As we have explained throughout this section, and in previos chapter 5, the role of the CRO in Vejle has been reinforce by definining an Executive CRO that will support and install in a political level the different actions that the resilience strategy has promoted. Recognising the role that Ulla Varneskov as CRO, and the City Manager as Excecutive CRO, both of them acting as 'embasadors' of urban resilience within Vejle and within 100RC network, lead as to argue that both CRO's are speaking and acting by the network around urban resilience.

Summarising

We can conclude that Vejle has translated the idea of urban resilience, conceptualised and operationalised by 100RC, by following and integrating the different steps and phases that 100RC has carefully designed in order to ensure the proper embedding of urban resilience into cities, and with that reach the long term goal of the program. It has being argued that the process of translation of urban resilience followed by Vejle, has had interconnected steps that reflect the complexity of this process and the creation of a new network around this new idea in Vejle. Here, the value of collaboration behind urban resilience, in order to reach the holistic perspective, has played a key role that has defined the integration of: problematisation; interestment; and enrolment, in closely related steps stressed within the methodology of resilience framework and within the process of resilience strategy development. In this sens, it has been possible to realised that 100RC has stabilised the idea of urban resilience within different objects such as: resilience framework, guidelines, manuals, procedures, and so on, which from ANT perspective regards 'black boxes' that requires unpacking. This unpacking has been made through a intermediary, role played by ARUP, the strategic partner of Vejle during its process of developing the resilience

strategy. In order to make the idea travel, 100RC demanded the appointment of a CRO at director level in Vejle, which has been provided with a resilience team to ensure the spread of resilience in the different departments in Vejle Municipality. When the important actors are first selected and afterwards enrolled and stabilised within the 'wider' network containing 100RC, Vejle Municipality and platform partners, the work on resilience could begin. This indicates that 100RC wants to establish and build the connection between the relevant actors to start 'translating' the idea of resilience. By the definition of key actors, and specially the definition of the CRO, 100RC ensure the energy required for ideas to travel, assuming that social actions and interactions make ideas to travel.

6.3 Institutionalisation of practice, the long-term impact.

Drawing on Scott [2001] and the three pillars of institutions, this section look closer into how Vejle have changed its organisation and institution in the translation process of resilience. As we analysed in the previous section, when translating the idea of urban resilience into the local context of Vejle, it required the construction of a new network in order to accept, install, and create the room for the new ideas to be embedded. This process is not an easy one, but when some of these new practices and actions, (named as new collaboration across sectors; new routines; or new actors and roles withing the city council organisation among others), gain acceptance withing this network, and they started to be repeated, new structures of institutions emerge. At the same time, the previous structures that shape the "way that actors behave" are slowly removed, giving the space for new norms, rules, and values that create the floor for the new idea. In this section we draw upon Institutions and institutional change theory, and we will move forward along the process of translation and the cycle of ideas, by looking at how this translation process has impacted local institutions and given the space for institutionalisation of new practices. By doing this we will cover the second part of the second sub research question: *How is Urban Resilience, as a travelling idea, is translated in to local context of Vejle, and in this process, how are local institutions adapting to it?*

As we introduced in chapter 5, 100RC has the mission of *catalyse an urban resilient movement*, and installed urban resilience practices worldwide. As 100RC trough its president has portrayed, one of the ways of reaching this long-term goal with a 'tight' budget and punctual actions is by institutionalisation. In this context, we will look at Vejle acknowledging that different actions designed by 100RC program and implemented in Vejle have the long-term goal of institutionalise urban resilience at the local level.

Institutionalising resilience thinking

As a starting point of analysis, we will describe what have been the findings that 100RC has already made about the way cities are institutionalising resilience, and later we will contrast them with our findings in the case of Vejle. After three years of life and experience, 100RC developed a report with reflections upon early insights from member cities that have moved towards institutionalising of the idea of urban resilience. As presented by 100RC: *"we use "institutionalising resilience" to mean both permanently establishing the function and structure of the Chief Resilience Officer, as well as integrating and mainstreaming the concept of resilience into city services, plans and initiatives"* [100 Resilient Cities, 2016a, p.8]. These two ways represents a first understanding of institutionalisation.

As synthesised by the aforementioned 100RC report, cities within 100RC network are mainstreaming resilience in different ways. One of the first steps that cities have taken in that direction regards the formalisation the CRO or CRO office, and its role as a permanent unit within city government. This action locates the functions of the CRO as equally essentially as the director of urban planning or the head of civil defence. As recognised by 100 Resilient Cities [2016a], more than 12 cities have already taken the step making the Resilience Office part of the permanent city's government structure, at the same time that have assigned additional resources to operate in this role, and to coordinate and implement the city's resilience strategy. As it is highlighted, many other cities out of 100RC Network have incorporated this figure, and have promoted the creation of CRO position or CRO office. This reflects the power of influence that this idea has reached when crossing beyond the borders of this network.

At the same time that formalising the resilience office, 100 Resilient Cities [2016a] argues that cities and local governments are integrating and installing resilience thinking into concrete plans and policies. For example, some cities have integrated resilience lenses when evaluating and designing capital projects, which at the end has led towards more holistic solutions. In order to promote this strategy and foster local compromise, 100RC has created the tool "10% Resilience Pledge", described in previous chapter in section 5.2. Explained briefly, this pledge encourages the compromise of concrete annual budget dedicated to resilience-building, at the same time that empowered local authorities in this aim.

How has Vejle institutionalised Urban Resilience?

As it was presented in methodology chapter, we have used interviews and document analysis in order to reach a better understanding of how the translation of urban resilience into the local context of Vejle, has influenced local institutions and triggered some institutional changes. Four main changes have been traced by the analysis named as: 1) Integration of CRO as permanent position within City Council Organisation, and coupled with this, the creation of an "Executive CRO" role assumed by the City Manager; 2) Mainstreaming of Urban Resilience into other planning instruments such as municipal plan, development plans, and visions; 3) Integration of Resilience Thinking into planning practices by transforming collaboration and work across sector as new way of achieving goals, and new routine; 4) Finally, repeating processes within the resilience framework (problematisation and definition of challenges) as way of involving new politicians, and reviewing the process. Each of these findings has different elements that define them and are helping to transform new practices into institutions. The following table 6.5 is synthesising these findings, and organised them under Scott [2001]'s three pillars of institutions. The division among three pillars of institutions has been based on the understanding that has been built in Theory Chapter 3 and synthesised in section 3.5 Theoretical Framework. Therefore, under the regulative pillar, *which defines how society must behave, by establishing rules and laws*, it has been located the changes regarding mainstreaming urban resilience into urban plans and regulation, understanding them as set of rules and laws that define the way that city should be conformed. Under the Normative pillar, *which defines how society ought to behave by defined values, norms and roles*, it has been located those changes related to new practices that defined goals and new ways of pursuing them, the integration of resilience thinking understanding them as composed by

values of collaboration and co-creation, the definition of new CRO and Executive CRO position understood as new role within the municipality structure, and the values behind specific objects and desirable solutions. Finally, under the Cultural-Cognitive pillar, *which regards the share conceptualisation of meanings and routines*, it has been located the new routines of collaboration and the repetitions of processes within the resilience framework and resilience strategy process. It is important to mention that from theory it is expressed that this last pillar remains the deepest socially constructed institutions, therefore are the most strongly embedded in society. In this context it is important to mention that the changes described under this pillar are still ongoing process. The more detailed description of each finding will be unfold after the following table.

	Regulative	Normative	Cultural – Cognitive
Carriers	<i>How society must to behave. (Rules – Laws)</i>	<i>How society ought to behave. (Values, norms and roles)</i>	<i>How society usually behave. (Shared conception of meanings - routines)</i>
Symbolic System	(2) Mainstreaming Resilience into urban planning instruments – Plans and Regulations	(3b) Integration of resilience thinking when looking at problems and searching for desire solutions – Best practices. (Values – behind resilience) (3) New Practice: collaboration as new black. Braking silos within the organisation. (Norms: define goals but also ways of pursuit them)	
Relational Systems			
Routines	(2) New demands when developing the city.	(1) CRO as new permanent position within City Council. (Role) (1.b) Integration of functions, new role of City Manager as “Executive CRO” (Role)	(3c) New routine of collaboration, opened to new actors. Braking of traditions of planning practice. Still an on-going process. (4) Repeating the process of resilience strategy – problematisation, in order to involve the new politicians.
Artefacts		(3b) Integration of resilience thinking when looking at problems and searching for desire solutions – Best practices. (Values – behind resilience objects)	

Figure 6.5. Institutionalising Urban Resilience in Vejle. Based on [Scott, 2001].

1. Chief Resilient Officer as permanent position within City Council

As presented by 100 Resilient Cities [2016a] reports, one of the first and more recognisable ways of institutionalise urban resilience among the 100RC, regards the inclusion of CRO position and its role as permanent within the City Council organisation. Vejle has followed a similar pattern: the CRO position has transcended 100RC founding, and nowadays is a permanent position within the Municipality. As Ulla Varneskov (current Vejle’s CRO) explained, after two years of funding from 100RC, the position of the chief resilient officer has been assumed by Vejle Municipality, and integrated within the regular city budgeting. As Ulla explained by time that the interview took place, the municipality has assumed this economical responsibility by them selves: *..”so our two years run out a year ago, I think, so now is something that we finance by our own, so we do not get money from them*

any more. We do not get directly financial support" [Varneskov, 2018, 28:45]. Reasons: In this sense it is arguable that the benefits of keeping the CRO and its role as connecting point between the local context and 100RC global network has been positively validated by the Council. As Ulla explained, her role is: *"...to (...) have the international focus, and to coordinate within the organisation, so the internal coordination in 100RC. And developing new steps, and mobilising the organisation, and the strategy work."* [Varneskov, 2018, 04:23]. By keeping this position, Vejle has kept access to the 100RC network, and even though the direct funding for it has been stopped, Ulla, appointed as new CRO since summer 2017, went through different process of education hosted and fostered by 100RC: *".. I am still newly appointed to. So I had a training program together with the newly appointed CRO in Barcelona, [...], so they are trying to do different stuff that will connect the cities"* [Varneskov, 2018, 24:20]. As Konstantina Karydi mentioned, this strategy is based on the *theory of chain* that aims for installing resilience practices and capacities within the local context by supporting knowledge sharing and CRO support. *"So we are actually from the very beginning asking the cities to invest themselves. Because at the key of our theory is to create capacity from within. So we don't do things for them, we give them a framework, we give them some funding, we give them access to the network"...* [Karydi, 2018, 21:26]. During the two years that 100RC funding lasts, the CRO gain weight within the municipality, and in this way, the role and position of this key actor is slowly institutionalised.

1.b Integration of functions, the City Manager as Executive CRO

One of the changes that Vejle has implemented, after that the former CRO left this position during summer 2017, was the empowerment of the City Manager as "Executive CRO". As Ulla mentioned, the City Manager *"is not political [pointed position], he is the head of the top ranking official within the city. So, him and me sort of partner on this, and you know that's in order to both ensure the strategic political leadership within the resilience work"* [Varneskov, 2018,03:34]. This action was taken as a strategic decision in order to ensure the following steps withing the resilience strategy, at the same time that empowering the Resilience Chief Officer's role within the political sphere. In this context, as Konstantina explained, one of the requirements from 100RC, in relation to the definition of CRO regards the need for them to play a strategic role withing the local government. As she explicated, the implementation phase of the strategy requires large coordination of different actors within and out the municipality, which should be combined with political will. In this sense she highlights the need for having a senior person assuming the role of CRO.

"So the CRO is internal external person, even when they are within the administration they help open up the city. But often in the implementation you will have a key actor, you know, the city architect, or program manager for a specific program. [...] we are constantly helping the city to understand why is important to have a senior person being the CRO, or director of resilience, or what ever you name it [...] Some cities they, especially in Europe they also have a deputy mayor for resilience now, and it can be [...]sometimes is combined, my opinion is that the best is having development and resilience together" [Karydi, 2018, 21:26]

The following figure 6.6 presents the position of the CRO within the municipality structure and the new role "Executive CRO":

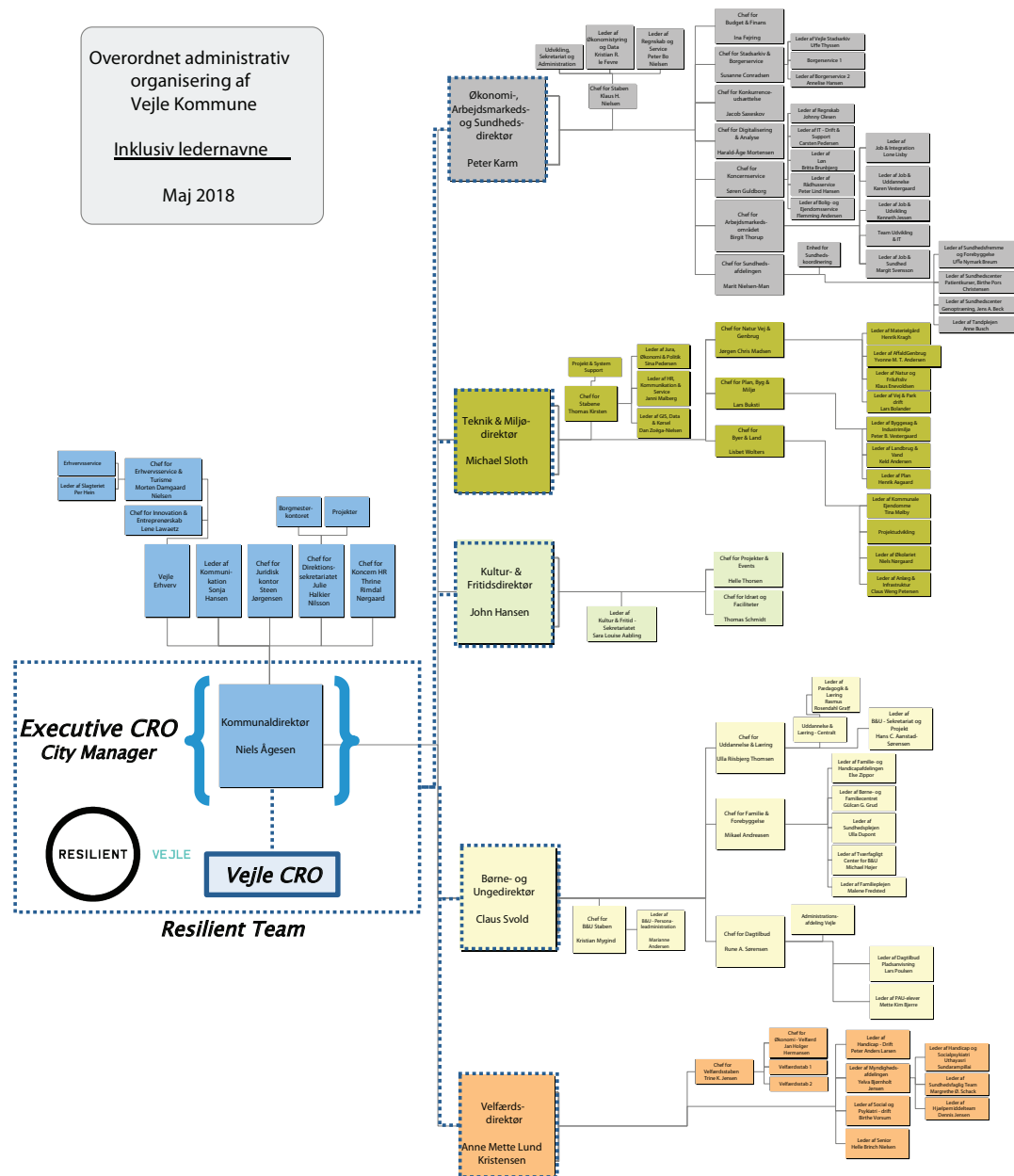


Figure 6.6. CRO within the Municipality Organisation. *Scheme adapted from original.* Source: Vejle Municipality

As Ulla explained, before this, the CRO was not a strong position within the municipality. As she mentioned, the position of the CRO within Vejle did not have the required weight, because of the lack of team and "portfolio" that support it. As she explains: *"I think here the challenge was that being (...) it is quite difficult to be a director with no portfolio, so it is this just one person. And your job is to do a strategy, so it is quite small. And, so, I really think that is not necessarily the strongest position in Denmark, or in Vejle. Cause you need to have some sort of portfolio"*... [Varneskov, 2018, 29:20]. In this sense, when the

City Manager took the stick and assume the role of "executive CRO", this position gained new strength, power, and larger perspective. As Ulla explains: ...*"And so, now when the City Manager says: [...] I will take it on, I will be the anchor in the board directors. I will make sure that our strategic work connects (...) that there is a connection between this. [...] cause they [100RC] wanted to be an a director level because they want it to be so: when the CRO calls out on the organisation, that person has strengths, and has the ability to say: it needs to be this. And me coming out saying: The City Manager wants to be like this, it is a lot stronger"...* [Varneskov, 2018, 29:20]. In this sense we can see this as a lesson learnt by Vejle, which led to adaptation of normative institutions, and as a way to institutionalised this position and role within an already existing position.

2. Mainstreaming Urban Resilience into other planning instruments.

As we have introduced previously in chapter 5, and chapter 6, the Resilience Strategy is one of the main tools where member cities consolidate the *holistic and integrated directions*. This tool, at the same time that describes challenges and cities' capacity to address them, its production also connects and unify people, projects and priorities in order to collectively take actions over the resilience challenges. In this sense, this tool is not only a master plan that sets the means for addressing urban resilience, but also a speaker that "spread" the message of resilience within the city and across sectors, and abroad towards other cities and organisations that can take this document as inspirations. In this context, one of the first steps in this analysis is looking at the relation between this tool and other urban planning instruments.

As it was presented in the previous section 6.1, Vejle's Resilience Strategy is built on four strategic pillars, 12 goals and 100 actions. Acknowledging that this document represent the strategic rad-map for building resilience in Vejle, an analysis of this document has been carried in order to reach a better understanding about how Vejle has planed to mainstream urban resilience into other plans and planning instruments. As a general overview, it is possible to recognised that the firs strategic pillar: 'A *Co-creating City*' contains three goals, where the first one states: *"We will make resilience central to the Municipality's vision and plans"* [100 Resilient Cities, 2016b, p.20]. Similarly, the explanation of this pillar ends stating: *"In our co-creative city we will primarily focus on integrating resilience into our municipal strategies"*[100 Resilient Cities, 2016b, p.20]. Within the same chapter, when describing the initiatives' characteristics within the four strategic pillars, it is highlighted in first place the intention of *"Integrating resilience into new visions, policies and strategies for Vejle's development"* and *"Introducing new methods of strategic thinking and planning to incorporate resilience"* [100 Resilient Cities, 2016b, p.23]. As we contrasted and confirmed with interviewees at municipality, Ulla and Jakob, mainstreaming resilience over other planning instruments represent one ways of building urban resilience in the Municipality. Following with the analysis over the resilience strategy, it has been possible to recognise 16 over 100 different actions that potentially would generate the mainstreaming of resilience over different policies and planning instruments. This has been inferred by looking at description of actions/projects contains in the strategy, and evaluate its explicit or implicit aim of developing a new plan or strategy, or either influence existing ones. As it is highlighted by the strategy, 15 of these 100 actions are presented as "lighthouses actions" that are *"a priority to Vejle's resilience, and they will work with supporters actions when*

implementing them. After analysing them, 9 over those 15 actions have the explicit or implicit aim of mainstreaming resilience. The following table is synthesising these 9 lighthouse actions:

Pillar	Action	Pag.
A Co-creating City	Vejle 2050 - Integrate resilience into the development of vision 'Vejle 2050' and into the municipal development plans	25; 72
	Co-creation strategy: Deliver an action plan for co-creation between citizens, businesses, unions and institutions.	27; 72
	Rosborg: Use Rosborg as a laboratory to address the challenges and opportunities that Vejle will face in 2050	29; 75
A Climate Resilient City	Fjordbyen: Use 'Fjordbyen' as a laboratory for climate change adaptation and flood control	31; 76
	Mobility: Reduce traffic congestion by planning a 'cycle super-highway' through central Vejle	35; 78
A Socially Resilient City	Social Resilience Policy: We will increase social and economic cohesion and create the best conditions for future generations	37; 82
	Social Housing Master Plans: Develop social housing estates 'Løget' and 'Nørremarken' with possible investments from the Municipality and external financing bodies	43; 85
A Smart City	Advanced Smart Lighting: Using the streetlights to integrate smart technologies	49; 90
	Digital Resilience: Develop a set of standards to be shared across the council to increase digital resilience and cybersecurity	53; 92

Figure 6.7. Mainstreaming Resilience: Actions within Vejle's Resilience Strategy. Based on [100 Resilient Cities, 2016b]

From these 9 lighthouse actions we recognise the importance of 5 actions due its capacity to integrate resilience thinking into existent urban planning instruments, or its aim of develop a new instrument that define the development of the city including a resilience conception.

Vejle 2050 - Integrate resilience into the development of vision 'Vejle 2050' and into the municipal development plans: As the strategy portrays: Through the City Council's vision 'Vejle – We Make it Happen' ambitious goals have been set for Vejle. The concept of Vejle 2050 will be the driving force for developing the city. We will include researchers, citizens, educational institutions and businesses, to create an image what Vejle will look like in the future. This will contribute to creativity and growth across the city.[100 Resilient Cities, 2016b, p.25-72]

Co-creation strategy: Deliver an action plan for co-creation between citizens, businesses, unions and institutions. As the strategy presents: We will develop and implement a co-creation strategy in Vejle. We want to be a resilient and co-creative municipality that, together with its citizens and civil stakeholders, create communal and better welfare solutions for our citizens. Through co-creation we will increase our resilience capacity and facilitate engaged citizen groups.[100 Resilient Cities, 2016b, p.27-73]

Rosborg: Use Rosborg as a laboratory to address the challenges and opportunities that Vejle will face in 2050. As the strategy presents: The Rosborg area of the city is expected

to be developed towards 2040-50 with a view to accommodating Vejle's growth with attractive residential areas. The area can be developed into a green city area with housing, recreational areas and good links to both the city and the nature in the Valley. The new city area will be a laboratory for social resilience, smart city and sustainability.[100 Resilient Cities, 2016b, p.29-75]

Fjordbyen: Use 'Fjordbyen' as a laboratory for climate change adaptation and flood control As the strategy presents: Vejle is threatened by flooding so we must focus on protecting the city's assets and citizens, in particular our vulnerable citizens. Vejle's fjord area is particularly vulnerable to climate change. By focusing on this area of the city we will increase the collaboration around common challenges and solutions to flooding.[100 Resilient Cities, 2016b, p.31-76]

Mobility: Reduce traffic congestion by planning a 'cycle super-highway' through central Vejle. As the strategy presents: This project creates the framework for increased mobility between Vejle's resilient areas – Fjordbyen, Vestbyen and in time Rosborg. We want to develop a 'cycle super-highway' to facilitate a more active lifestyle and secure a better 'flow' through the city using green transport. Improved cycle parking, shared bikes, and permeable paving are also under consideration as part of this framework.[100 Resilient Cities, 2016b, p.35-78]

Social Housing Master Plans: Develop social housing estates 'Løget' and 'Nørremarken' with possible investments from the Municipality and external financing bodies As the strategy presents: The social housing plan contributes considerably to the city's cohesion, strengthening local identity and actively engaging the local community creating a resilient city. The vision for 'Løget' and 'Nørremarken' is to be resilient, robust and attractive areas that use the local resources to create citizenship, security, well-being and space.[100 Resilient Cities, 2016b, p.43-85].

Even though the Social Resilient Policy (marked as grey on the table) represent the concrete creation of a new policy, therefore the concrete expression of mainstreaming resilience, it has been marked in grey to make a distinction from other actions because it is one of the actions that nowadays will not be implemented. As Ulla mentioned during the interview: *"looking at the strategy then all of the lighthouse projects (actions) that would be really good examples are really far along and then some of them would never be. Doing a policy for social resilience it just doesn't make sense today"* [Varneskov, 2018, 01:02:19].

Out of the lighthouse actions, we recognise the importance of the action called: *Integrate resilience into the municipality plan* [100 Resilient Cities, 2016b, p.72] which aim for working to integrate the Resilience strategy into the new municipal plan. The focus will be on the benefits of the resilience work undertaken to date and how to best integrate it into future plans and strategies for the city.

In terms of the concrete influence that the Resilience Strategy and resilience thinking have had over other planning instruments such as Municipal Plan and local Plans, Jakob synthesised: *"We have incorporated some texts and principles about resilience and how we work with it, but whether it has influenced the whole local planning practices and the municipal plan, no, not yet"* [Østergaard, 2018, 15:48]. He explained that resilience thinking and the strategy it is still to some extent new within the Municipality. He took the example that a Municipal plan takes four years in being fully developed and the resilience strategy is just two years old. But on the other hand, he explained: *... "it has inspired*

us to look at the whole municipal plan and planning strategies in a new way, so i think that it is going to happen in the next run, we go with even more resilience plan. People wants to change the way it looks and appears"... [Østergaard, 2018, 15:48]. In terms of the influence over local plans, Jakob mentioned that they are in constant development, and from his perspective, these instruments will not be "revolutionised but more refined to this new thinking instead"...[Østergaard, 2018, 15:48].

When asking Ulla about the influence of resilience thinking and the resilience strategy over planning practices, she synthesised that among the extended Municipality organisation, which considers around 12.000 people and different departments, the answer have not been the same. And for some of them the program, and resilience *"just to some it is more a common platform than to others"*. She highlights that different departments have integrated this way of thinking deeper than others. As she explains: *"our technical department really took it on and they are really strong actors (...). And our health department as well, you know, talking about [...] the holistic approach to being healthy and to prevent different sicknesses[...]/And the Child & Youth department, [as well]... but then our cultural department is maybe a little less"*... [Varneskov, 2018, 38:25]. When Ulla mentioned that the Technical Department represents a strong actor in terms of resilience thinking, she explains that the team has incorporated this new approach when planning the city. In this sense, when asking about Ny Rosborg, so called *the resilient district* she explains:

"it is totally normal for the technical department , when they have to build something, like a [dam] or whatever, you know, it comes natural to them to call the social sector and say: [what is your understanding of] workshop, and that was not a normal practice before but now it is something we do, so we, you know, across when they are working in something urban planning they will invite people from [...] to ensure the holistic approach [...] is not just bricks, it is people, and life, and future and how can we, you know, speaking in to that context, and, we always look at the add value, how can we maybe do more, how can we get more value from this. How can this on thing be an opportunity to create more holistic value" [Varneskov, 2018, 41:52].

Here, as Ulla mentioned, it seems evident that some departments have integrated 'resilience thinking' deeper and to some extent more spontaneously than others. For the technical department, and development unit where Jakob belongs to, the holistic perspective of resilience became something useful for everyday practice, and its outcomes (plans and projects) arguable will reflect this new routine. This can be also connected to old tradition of participation that Denmark culture is well known for [Kjaersdam, 1988; Lyhne et al., 2016], and in this sense, urban resilience and resilience thinking come, to some extent, to reinforce a very old practice of collaboration. But for others departments, as Ulla confirmed: nowadays it doesn't make sense to build a 'Social Resilience Policy', the new idea of urban resilience remains distant and difficult to apply in a more concrete way. It is possible to argue here that the translation of urban resilience remains difficult for some departments within the municipality due to its "ambiguity and broad conceptualisation". On the other hand, for departments that involved more concrete problems and solutions,

urban resilience regards an useful perspective 'easily' to integrate in procedure and arguable in its outcomes.

In order to address an overview about how resilience has been mainstreaming over urban planning instruments, it has been revised different documents such as Municipal Plan 2013 and 2017, Vejle Plan strategy (general strategy for the physical development on the municipality), District Plans (Lokalplan), and vision "Vejle 2050" (part of the Municipal Plan). After our analysis, we can confirm what Jakob has synthesised: it is possible to *find some texts and principles about resilience and how [the municipality] work with it*, specially in the Municipal Plan and Plan Strategy. But at the same time, it is also possible to confirm that this influence has not been revolutionary for the whole local planning and municipal plan, as Jakob said, *not yet*. After revised local plans released between 2012 and 2017 it was not possible to find resilience as concept contained in those documents. As Jakob argued, this area of planning is not "revolutionised yet". In his words: "*i don't think it will be revolutionised but more like refined to this new thinking instead [...] We are still a authority, and we have the laws, which we have to fulfil*". [Østergaard, 2018, 15:48]. In this sense, it is possible to see that the existent law define the way of producing local plans and acts as strong positive feedback towards the traditional way of producing plans. The following table synthesis where has been possible to find the influence of resilience within planning documents:

Document name / Type	Year	How resilience is included	Quote	Page
Vejle Planstrategy	2015	Chapter: Will to cooperate	We want to lead the way by developing local solutions on global challenges - and we will be gladly to share the experiences. That is why we are a member of the city-network 100 Resilient Cities.	7
Vejle Planstrategy	2015	Chapter: Goals (National Leading-position in welfare-development)	Vejle attracts every year millions to Pilot-projects and development projects, that can strengthen the welfare, for example through the 100RC network.	14
Vejle Municipal Plan	2017	Introduction	The perspective in the Municipal Plan is as basis 12 years, but Vejle Municipality wants to look further ahead. Therefore we have initiated a process where we, together with other actors, are discovering possible development up until 2050. That will help us make decisions that can make planning more robust in terms of tomorrow's challenges.	12
Vejle Municipal Plan	2017	Focus areas	We are aware that we can create better solutions and create value by cooperating on urban development. Both on the strategic level, but also on the concrete physical planning area. That is why we work together with both international, national and local partners. We are sharing knowledge and cooperate with businesses, associations, institutions and citizens, but also other authorities and education-institutions. When we develop together, we achieve better results.	35
Vejle Municipal Plan	2017	Resilient Neighbourhoods	We want to create resilient neighbourhoods where knowledge and experiences are shared regularly, so methods and possibilities are tested and modified to the local setting	40
Vejle Municipal Plan	2017	Resilient Communities	Resilient Communities include an active citizenship, strong local communities and environments for self-sufficiency.	41

Figure 6.8. Mainstreaming Resilience in Plans.

3. Integrating Resilience Thinking into planning practices - breaking silos.

New practice and routines, Collaboration as new way of working.

When asking to the different interviewees about the values behind resilience, and specifically about urban resilience and the 100RC program, there was an agreement that collaboration is one of the biggest concepts behind it. In this sense, Konstantina from 100RC, and Dima from ARUP agreed that *collaborating across sectors helps to brake the*

silos of segregated departments, and it represents one of the key elements that resilience, as method, is fostering into the local level in order to reach the holistic perspective. As Konstantina portrays: *... "And then internally it is about to working together to break silos and really orient around programs and projects in an organised way. So resilience is both an end goal, and a methodology"* [Karydi, 2018, 09:56]. This new practice, promoted from the very beginning when developing the resilience strategy, it has slowly been adopted as new routine, and incorporated by different departments within the Municipality. As Ulla, and Jakob Østergaard (Urban Planner and architect at Vejle Municipality) agreed, it represent a new way of working together across departments, but at the same time both agreed that is an ongoing process. *"So, that is sort of ongoing work, [...] but one really really important thing is definitely that working across sectors is a lot different now than [how] it was. And even though people might not say the word resilience, it is a result of the resilience"...* [Varneskov, 2018, 37:59].

Conflict when implementing something new:

As Ulla and Jacob agreed, implementing this new way of work requires time and adaptation of previous structures and routines, and that is not always an easy task. In this sense it is possible to recognise that established routines are sometimes conflicting with this new collaborative and more open way of working. In this sense, the influence of resilience thinking over the broader municipality organisation is in progress, as Ulla portrays: *... "the other (perspective about the influence of resilience thinking) is how we implement or normalise this within the broader organisation, and that is the ongoing work"* [Varneskov, 2018, 32:00]. This ongoing process is arguable related to adaptations required to integrate the new practices that urban resilience brought. Arguable prevalent practices are stronger enough to resist, and can rise the question about why doing things different, if everything has worked well so far. As Ulla confirmed: *...when you start this work and you take on a new method, it would, you know, fall in to something. Something would be going on already, and [...] either it would fits very well [...] on or (...) it would need to be shaped a bit differently or more connected to something else"* [Varneskov, 2018, 32:00]. This potential conflict between 'new and old' practices has been highlighted by Jakob. For him, as new planner, the holistic perspective that collaboration create remains natural and a good way of producing good plans, which also have the advantage of speed-up processes due to the openly talk about the challenges and problems with other people. However, this represent a big challenge for planners that have been on practice for longer period, therefor are used to different routines and methods of doing planning. On Jacob's words:

"I think that is a change that has been going on for a couple of years, and i must say, that in my opinion, i think that is what i always thought is the right way to do it and to make planning [...] because you get a better solution and a better plan if you involve more people who knows more about special subjects, i just think that Vejle has speed-up this process because we have talked so openly about our problems, [...] I am kind of a new urban planner, so my philosophy is perhaps a bit different for people that has been doing this planning for 20-30 years." [Østergaard, 2018, 20:53]

Here, Jakob make evident the potential conflicts that rise when translating a new idea

into different context, and how this process challenges established practices and routines embodied by 'new and old' planners. Even though it is not the aim of this section, interestingly it is possible to recognise that new trained planners, as Jakob called him self, can integrate this new 'mind set' as the best way of doing planning. Arguable this can be connected to process of education, and to a more broad and 'newly' understanding of planning practice and rationales behind planning practice that are dominating the contemporary planning debate and discourse.

New way of looking at problems

Jacob's last point lead us to find that under resilience thinking, talking about problems and challenges of cities, districts or neighbourhoods in a more opened and collaborative way represents a new practice and routine that is being installed in Vejle. As Ulla portrays:

"I worked with the city of Vejle for 10, 11 years. And this was, for instance, one of the first times that we could say it was ok for us to say: we do not know the answers, you have to help us and be a part of finding the answers, saying that both to the community, and to the NGOs, and within the organisation. Cause normally (...) maybe that is a particular Danish thing, because of the whole Nordic well-fare model, and normally actors look to us for answers, so they would come to us and say: here is an issue, fix it. And then we (...). But with this, we could sort of more open up and invite people in, and saying, you know, we do not have the answers, you have to help us, and we have to do this together. And that gave new perspectives on some of the issues we have been working with" [Varneskov, 2018, 14:46].

In a similar way, Jacob highlights that one of the biggest values of resilience thinking regards collaboration across sectors, and at the same time, the chance to open process to local people, *about going out and talk to people*, which from his perspective is something new that has been a change. At the same time, Jacob agreed with Ulla, when recognising that resilience thinking and method has give the opportunity to talk about problems more openly, but at the same time brings the responsibility to do something about those problems. In Jacob's words: *"the value is definitely the way you talk about problems in open spaces, its OK to talk about the problems, but when we talk about them, we are also, we have to do something about it in a smarter or a new way, and to do that, we have to work together with a lot of people"* [Østergaard, 2018, 19:32]. This represent an innovation on practice and routines. Arguable, in this line what urbane resilience has brought to Vejle regards the capacity to challenge the established role that municipality has as authority, therefor this established social understanding that this authority should provide solutions. On the base of this 'new method' Vejle's authority is not challenged for not provided the answer, but rather is positioned as new way of leadership. Vejle's new approach to facing problems, based on resilience thinking, is democratising the the challenges that city is facing by saying that is something that should be solved in collaboration. In this context, konstantina support this argument when saying: *"in different ways each city chooses to go dipper, in like Vejle for the is about democratise the concept [...] they [Vejle] really believe in some strong part of what resilience is about, this co-ownership..."* [Karydi, 2018, p.27:30]. Here is difficult to argue whether or not this 'democratisation of problems'

would have happen, but clearly the self perception of authority with established role and responsibilities is to some extent changing towards a more co-creative one.

This new way of looking at problems has brought at the same time a new way of looking at solutions. In this sense, it has been possible to recognise from both Ulla and Jacob discourses that there is a right way of solving problems. In this sense, resilient solutions are connected to a specific type of solutions that remains better than others. Here the 100RC play a key role when transferring knowledge and best practices. This represent a broader type of collaboration that is being installed in Vejle. As Ulla explains: *"how we would prevent flooding? Should we build a dam? Should we build a wall? That is one way of going about,[...] actually when we talk about the problem we can easily skip to a possible solution without having to go through all the different, for instance scenarios, or perspectives on. So we do not have to talk about should we build a wall? case we all know it is not resilient"* [Varneskov, 2018, 56:57]. In the same line, Jacob argued that in this sense, this network has help both for get good inspirations for other cities, but at the same time to see how to not do things: *"to be honest, we have also learnt how not to do it, so if you build a wall for instance,[...] you are not doing anything for the connection between people and between, also the connections to the nature. So doing things in a different way, both we get good inspiration but also inspiration on how not to do it"* [Østergaard, 2018, 43:07]. This point rises the inherent contradiction that urban resilience can generate. On the one hand, as the interviewees have highlighted, urban resilience is a mindset that focuses on go across sector fostering collaboration in order to reach the holistic perspective towards addressing challenges. But at the same time, the sharing of best practices (way of solving problems) play a key role when forming the network of global collaboration. Arguable this create the problem focus orientation at the local level, but at the global level is all about sharing solution, projects, innovations that can reinforce the 100RC network and foster the travel of the idea. The concrete objectification of resilience will be unfold in next chapter, therefor here concrete examples will not be explained in detail.

4. Repeating processes from resilient framework

Finally, when asking Ulla about what are the future steps of the resilient strategy, and further steps of the implementation of resilience in Vejle, she portrays this as new challenge. Since Vejle belongs to the first round of 100 resilient cities, and the strategy has been launched 2 years ago, there is not a clear road map for following steps. In this sense, she clarify : *"no body is going to deliver the answer"*. Therefor internally at the Municipality, she as CRO, the City Manager, and the Mayor have started to discuss about what will be the next steps for resilient Vejle. Here Ulla highlight that after elections, almost one third of members in City Council are totally new, and have not even heard the word resilience. As she portrays: *"so when people talked about (resilience), they were like: what? And, some of the new city council members, one of them wrote me an email saying: I was just in a meeting in a different city and they ask me about resilience, and I was what the hell is it?"* [Varneskov, 2018, 01:02:19]. This reflects the early stage regarding the institutionalisation process and, on the one hand, the 'fragility' of the installation of urban resilience at local level, and on the other hand, the resistance of previous institutions that remain stable. In this sense, it is possible to recognise that, even though some practices and routines have been in some way institutionalised under norms, best ways of doing things, and roles, these

are still attached to people. When these people are replaced, and new people arrived in the organisation some of these routines and understandings are lost, therefor they require to be reinforce and re-install. Interestingly, Ulla explained that since almost 80% of the initiatives defined in the resilient strategy are ether done or running, she and the other local authorities have talked about *"go through the same processes again, with the new politician"*. When talking about the process, she refers to the phase of defining challenges and questions within the Resilience Framework. In this sense, the repetition of this process would help both, define the new steps for resilience in Vejle, but also, engaging the new politicians within this new idea and network. As Ulla explains: *"some of them (politicians) that have been along for the entire ride say: well maybe, I mean, we understand the good part, but we are not sure if resilience is the answers, then what is the question. So, we just talked about [...] involve the new city council in the question, instead of just skipping to the answer. So I think we will at least to some extent, do it again some how, and then revitalise the strategy with new stepping stones in terms of projects"* [Varneskov, 2018, 01:06:50]. Here, the repetition of this phase within the resilience framework, represents the first step towards transforming this method into a routine. This can be, in the long run, institutionalised under the culture-cognitive pillar embedded in Vejle Municipality. As Ulla mentioned, even though the word resilience is not explicitly mention, the repetition of this method and practice reinforce the embedding process of resilience thinking.

Institutional Change in Vejle

As we introduced in chapter 3, institutions rather than be static structures that serve social behaviour by providing stability, they are under constant revision, adaptation and changes by following process of institutionalisation and de-institutionalisation [Scott, 2001]. In this context, this section aim to understand how has Vejle's process of institutional change been after joining 100RC. As we presented in the previous section the process of *translation* and implementation of urban resilience under the framework of 100RC has required the mix of new institutions with existing ones [Campbell, 2004], and this institutional innovations have required the adaptation of existent institution in order to both accept and activate the new idea, and at the same time to survive by generating a path-dependant change [de Moraes et al., 2015]. Inspired by Buitelaar et al. [2007] model of institutional change, the following figure 6.9 synthesises the institutional change process found in Vejle.

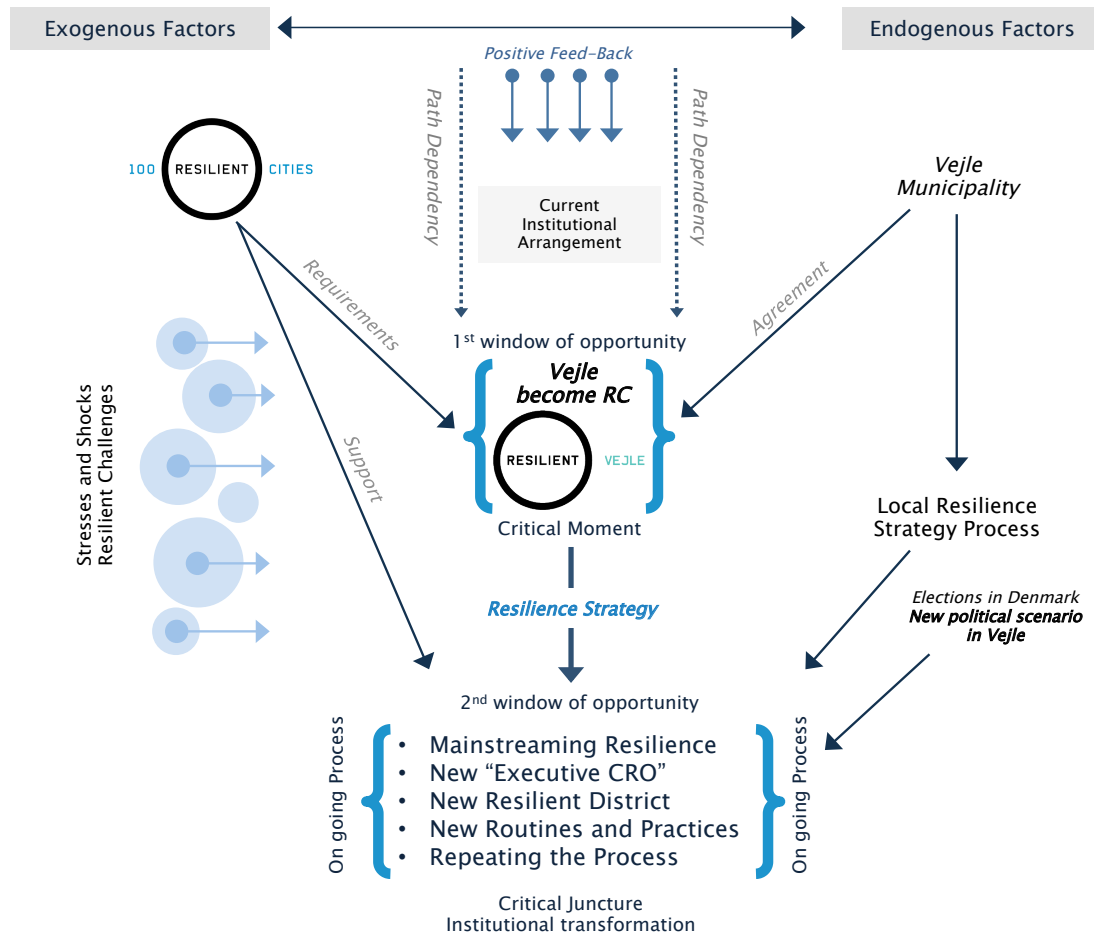


Figure 6.9. Model of institutional change in Vejle

As the above figure presents, the incorporation of Vejle into the 100RC program and network represent one of the first actions that triggered the internal process of changes. This action regards a critical moment for Vejle's institutional arrangement, which aliened the internal political will of becoming a member city, with the acceptance for new ideas to be implemented within the Municipality. This created a critical moment and a first window of opportunity for institutional innovation when Vejle integrated and accepted the requirements that 100RC ask to member cities, coupled with the internal reflections of different actors within the municipality during different phases mastered by 100RC program and stressed in the resilience framework. As we explained in previous sections, one of the first actions, and requirements from 100RC to member cities, and Vejle, was the definition of a Chief Resilient Officer who would act as point person for resilient building, and would coordinate all the city's resilience efforts. This new and innovative position within the city government has been ensure by 100RC through the direct economical support to hire and pay the salary for at least two years for this new actor. At the same time, when cities have selected their CRO, they follow differed processes of training and support. This new position on the local government empowered local leaders that became the connecting point between the global network and the local actors. In this sense, this new actor serves as intermediary by including new different local actors to the network

and connecting them to a large range of other global actors conforming the network.

Since one of the main goals of 100RC is create a global movement of resilience by impacting local organisations and building capacity into the local governments, it is possible to argue that 100RC has created different means that challenges current mechanisms of positive feedback that reinforce existent institutional framework. This can be understood as a way of creating the space for institutional innovation, in order to overcome the resistance to accept the new institutional arrangement that urban resilience requires. In terms of the mechanism that reinforce current institutions to persists, 100RC is challenging the *high set up cost* and *learning effects* by giving direct financial support to cities (equivalent to two years salary of a CRO directive position) and facilitating the training and support of CROs, at the same time that assisting them during the different phases that the program is considering. 100RC is building the capacity at local level to manage and reproduce resilience thinking into the broader municipal organisation by empowering the CRO in terms of know how, and by installing that role within the municipal structure during the development of the strategy and its implementation. At the same time, by making available an extensive platform of partners that support each city during the strategy development process, different actors, and its will are aligned within one main goal that generates a new *coordination effect*. This ensured the coordination of actions and role of different actors at the local level. In the same way, by integrating different actors during the process of strategy development, leaded by CRO and assisted by external advisers, *expectations are adapted* under one collaborative aim, building resilience.

During the process of strategy development, which required the participation of a varied range of local actors such as different stakeholders; NGOs; civil society; and different departments of City Council; new capacities were installed at different levels. In this way, the development of the resilience strategy can be seen as a mean that ensure the coordination of actors, and the general understanding of resilience thinking consolidated in the strategy. In this sense, the new lenses and practices that resilience thinking proposes become embedded and mix with the existent institutional arrangement. As the figure shows, this process of strategy development, which combine ideas and solutions to overcome the resilience challenges and opportunities that the city has, is helping to create the *second window of opportunity* and *critical juncture for institutional transformation*. As we presented in the previous section, the mainstreaming of resilience into Vejle's Municipal Plan and other planning instruments regards one of the strategic actions presented in the resilient strategy. At the same time, different urban development projects have been included as lighthouse actions within this strategy, stressing resilience thinking withing its process of future implementation.

Finally, the political change withing the municipal organisation after 2017's elections, and the learning process of the CRO as not that powerful within the City Council organisation has trigger institutional design and innovation. As we explained in the previous section, Vejle has integrated the role of "Executive CRO" assumed by the City Manager. This institutional innovation has empowered and reinforce the position of the CRO within the municipality. The renovation of one third of the political actors within Municipality which are not familiar with resilience and the resilience strategy, has created the window of opportunity to repeat the process within the resilience framework. This repetition of

practice would in the long term help to install and institutionalise the practice of looking at the city under resilience thinking perspective.

As Ulla explained, resilience thinking and the method of working that this approach proposed has been integrated in different levels by different departments within the Municipality. As we explained in the previous section, the technical department has been one of the departments that has changed its institutionalised routines towards more collaboration across sectors in order to reach the holistic perspective. As Jakob agrees, his perspective in relation to urban development department and the routines related to planning specific new districts has changed. As he portrays in the case of Ny Rosborg:

"we have flipped the process totally around, we are going around the area, we talk to the neighbours, to the citizens, to the developers, to the experts within nature, pollution, water handling, talking with the politicians, having workshops, having city-walks, basically gathering information, involving people, and then we just, when we have this as a platform, we have this workshop with politicians, where they are presented for all the ideas from the citizens, from the professionals, from us, and they actually made a vision with that as background, instead of they doing it from a blank piece of paper, but then from the inputs, from the process. And we have not drawn a line yet, but it has been going on for 2,5 years now, its all about the process" [Østergaard, 2018, 27:18]

On the other hand, when developing local plans, he recognises that, the municipality is an authority and therefor there are laws that it is necessary to fulfil. In this sense, the expectations regarding the role as authority is working as strong positive feedback that reinforce the path dependency of normative and regulative institutions, which blocks possible institutional innovations. At the same time, he recognised that this new way of thinking, the resilience thinking seem natural for him, self-defined as new planner, but it can contrast with established institutionalised routines presents in "old" planners within the municipality.

6.4 Chapter Conclusion

This chapter has covered the local context of Vejle as one of the member cities within 100RC global Network. This has been carried, first, through the brief presentation of the city as a case, its selection as member city of 100RC network, and the presentation of Vejle's resilience strategy overview. This has been followed by the answer of the second sub research question: *How is urban resilience , as a travelling idea, translated in to the local context of Vejle, and in this process, how are local institutions adapting to it?*. As explained in introduction, the analysis required to answer this question, and its answered, has been divided in two parts. The first part regarding the process of translation of the urban resilience, conceptualised as travelling idea, into the local context of Vejle. And the second part, referred to the implications over local institutions and the required changes when embedding urban resilience in Vejle.

Directly answer the first part of research questions 2, regarding how resilience, as a travelling idea is translated into Vejle, we can say that the translations process has been

very 'non-linear' and rather interconnected, reflecting the complexity of the process, which is still ongoing and evolving. Applying the four steps of translation from [Callon, 1986], shows that each step has 'occurred', but not chronological. The idea of urban resilience has been implemented in that sense, that Vejle have applied the resilience framework, observed the city holistically, identified possible threats and matched them with a solution through the resilience strategy, all of them objects that 100RC has developed in order to stabilised urban resilience world wide. From ANT perspective, this represented 'black boxes' that have been unpacked in Vejle, assisted by an intermediary, called ARUP, Vejle's strategic partner. In this context, the definition of CRO and Executive CRO in Vejle was a key moment of engagement with 100RC. This new actor, has played the double role of being the connection point between the global network, and the new formed local network. In its role as ambassador of urban resilience, it is also a intermediary that energised urban resilience to travel from one location to another. Furthermore, Vejle have engaged with different actors, 100RC, platform partners and local private companies, forming new networks which are to develop 'resilient' solutions which, are meant to be shared with other cities, forming new networks. The idea of urban resilience regards ambiguous, and we can realised that what 100RC provides, and wants to translate, is not only a single tool, but also a mindset, a way of thinking that entails cities to pay more attention to its, often not unique weak-points and challenges, and share both the good and bad experiences with other cities; building resilience globally. Vejle is still in the process of translating the concept. To mobilise resilience, or to implement the concrete actions to improve Vejles resilience, they will have to translate 'resilience' yet again when they engage with new actors, platform partners and other CRO's worldwide. The key elements around the translation of urban resilience at local level regards the instalment of CRO and development of the Strategy, but after this, new translations processes occurs. New networks are formed, new actors are enrolled and new solutions are developed when Vejle wants to build resilience, that is a crucial part of sharing knowledge with each other.

In terms of institutionalisation of urban resilience, it has been possible to confirm that Vejle is under an ongoing process of institutionalising urban resilience based on different actions that arguable are can be categorised within within the different Scott [2001]'s three pillars of institutions. In terms of the regulative pillar, Vejle is institutionalising urban resilience by mainstreaming the concept and its principle over different plans and regulations. It has been possible to confirm that both Municipal plan and Vejle strategic plan have include resilience principles such long term vision, collaboration and holistic perspective, among others. However, this influence has not reach yet instruments such local planning, arguable due to strong procedures that the law stipulate when developing this kind of plans. In this sense is possible to see that mayor changes are required such as changes in general law and the procedures that the local authority needs to fulfil in order to mainstream this new concepts and principles to large extent. In terms of the normative pillar, the definition of CRO as permanent position within the municipality organisation, and the establishment of an Executive CRO, role that asumed the City Manager, reflect the intention of institutionalised this actor and its role within the organisation. Similar as other member cities of 100RC network, Vejle has assumed the cost of having a CRO after that 100RC stop the direct economic support for it. In this sense, this reflect the value of having this pivotat person at the organisation, and the intention of continuing with the

process of implementation of resilience strategy, at the same time that continuing being member of the 100RC network. Whithin the same normative pillar, it has been possible to recognise that some new practices brought from resilience thinking, specially related to work in a more collaborative way in order to brake silos within the municipality, and integrating new actors in order to reach the holistic and long term vision, have become new usual practices defined. This new practices can be seen as norms, that at the same time that define long therm goals such those expressed in Vejle resilience strategy and Municipal Plan among others, it also describe the means to pursuit them, such a collaborative work, inclusion of stake holders in the process of development. In a similar way, and under the similar normative pillar, the integration of resilience thinking withing the municipality is arguable changing the way that problems are perceived and portrayed. As expressed by the interviewees from Vejle municipality, for very first time it has been possible to talk about the problems and challenges in a more openly way with citizens, public and private stakeholder, and search for solutions in a collaborative way. This has been possible due to the values that urban resilience brought and installed in Vejle while developing the resilience strategy, through its different tools, methods and actions. This arguable is changing the established institution that define the municipality as authority that should provide solutions towards a new leadership based on co-creation and democratisation of problems and solutions. Finally under the cultural-cognitive pillar, it is possible to see that some changes are ongoing, especially related to the repetition of routines and practices at different levels within the municipality organisation. In this sense, this pillar regards the deepest embedded in society due to it social definition and conceptualisation. Here the social interaction and interpretation of urban resilience is required and the repetition of some practices such as the evaluation of challenges within the municipality within a collaborative perspective, would help to create a common understanding of resilience and, at the same time, enrolling new actors that have been excluded or are not part of the local network in Vejle. Here, the example of new politicians that joined Vejle Municipality after 2017 elections, and were totally outdated about resilience reflects the need of repeating some process in order to include them in to this network, but also the early-stage or emending and institutionalisation of urban resilience, which is related to concrete people and not embedded in the organisation. Here it is interesting to notice that, as theory highlight, ideas do not travel if they are on books, or written strategies. And those politicians reflect this, even though they belong to the same municipality, some of then were out of Vejle's former resilience process. But by the action of human actors, and the repetition of routines, they can be include in this network. But this is an ongoing process in Vejle that is still happening.

In this chapter it has been presented the case of Vejle, the process of translating urban resilience from 100RC in to the local context of the city, and how this process of translation has generated some changes in local institutions due to the embedding of urban resilience as new idea. The following chapter will move forward towards the objectification of urban resilience, conceptualised as travelling idea, and how this idea is translated into spatial expressions.

Spatial context:

Local projects reflecting urban resilience

7

This chapter will build upon the previous two chapter, *the global context and the local context*, by considering spatial expression of urban resilience, and in that sense, answer sub-research question 3; *How are local projects in Vejle reflecting the translation of Urban Resilience?*. This zoom-in into Vejle pretend to bring a more concrete aspect within the argument that has been developed so far. In this sense, drawing on ANT, travelling ideas theory, and the cycle of ideas presented in chapter 3 *theoretical approach*, and synthesised in figure 3.2 *process of translation and travel of ideas*, it is acknowledge that when ideas are dis-embedded and re-embedded in new context through processes of translation, they are translated and transform into quasi-objects and then into objects, this objects are translated into actions, which after translation and repetition become institutions [Czarniawska and Joerges, 1996]. In this chapter we will focus in two specific *objects*, named as Fjord Byen, an Ny Rosborg, both projects that have been described within the resilience strategy of Vejle and have been acting as stabilised actions of resilience that has been used by the 100RC program to promote the idea of resilience by presenting what Vejle has been doing to build resilience. Even though, both projects are different types of urban development and are in totally different stage of implementation, both have been highlighted as lighthouse projects within the resilience strategy and act as Vejle's windows to the global network. In this sense, this two urban development projects, conceptualised as stabilised objects from ANT, are helping to make the idea of urban resilience travel from Vejle to the world through the network of 100RC.

7.1 Resilient Ny Rosborg

Ny Rosborg is a coming development project located in the western part of Vejle, right next to Vejle River Valley. The area measures 80 hectares and is owned solely by Vejle Municipality. The name comes from a fortress called Rosborg from the 1300s. District plans are expected to be developed in 2019 on basis of a comprehensive development plan initiated in 2016 [Vejle Municipality, 2018].



Figure 7.1. Ny Rosborg seen from the outskirts of Vejle. Source: Vejle Municipality

Ny Rosborg is labeled a new 'resilient' neighbourhood in Vejle, which we would like to clarify how so. What is 'resilient' about it?

Ny Rosborg is, as Jakob explained, not developed yet and the planning of the area is still on the more strategic level; at the moment under the phase of 'development plan' [Østergaard, 2018, 03:39]. Today the area serves no other function than being a recycling quarter, where Vejle Recycling depot is located. This depot is expected to be relocated when development of Ny Rosborg is initiated [Vejle Municipality, 2017a]. Besides this, Vejle river valley constitutes the rest of the zone. This landscape is selected as a natural zone of great value, which entails that a particular authorisation procedure are required, in order to develop the area [Vejle Municipality, 2017a].

When asked how Ny Rosborg is going to be resilient, Jakob replied that Ny Rosborg probably is the only place in Denmark, where the municipality seeks to "recycle a recycled area" [Østergaard, 2018, 27:18]. Jakob explains, that the challenge and probably the reason why the project is unique in Denmark, regards that the area is not suitable for living because of the large amounts of waste accumulated. Jakob elaborates by stating, that Ny Rosborg is about developing a local solution to a global problem:

The problem, or the threat is, that every major city has experience with, well the global, what do you call that, global trends is that people are moving to the cities, so every city, larger city, are growing, that creates a demand for space, and those waste deposits and recycling areas are often located on the outside of the cities, but when cities expand we will have these huge areas of waste and recycled areas which are not suitable for living, so if we can change this view, change the way you handle these brown-areas, to actually be a new attractive urban development area, then we do not only create a new solution for the

city of Vejle but actually also as an example for the whole world to follow.
[Østergaard, 2018, 27:18]

This support the argument we build in chapter 5, that resilience is about learning from each other, share experiences and cooperate to solve common problems faced in many cities worldwide. What is resilient about Ny Rosborg is that it serves as a 'laboratory' for how to develop on less suitable areas. During the process, Vejle will gain experiences on how to develop on a wetland, and learn how the physical expressions of an increased urbanisation can be done in different ways. Ny Rosborg is a different development project because of its conditions. Its probably not the most suitable area for development in Vejle, but as Jakob explains, the ongoing global urbanisation process can induce cities to expand into less desirable areas. Vejle may have other options for expanding the city, but by developing Ny Rosborg they will produce knowledge and gain expertise, which can inspire and help other planners worldwide that could be running out of suitable areas to accommodate urbanisation. This support the whole idea of the 100RC network: although cities seem very different and unique from each other, they are facing very similar challenges, and local solutions might be applicable on global problems. This is the very fundamental idea of 100RC, innovate and solve local problems and share the experiences through the network to spread best-practices, as Jakob also expresses;

"Basically i think the resilience thinking and the resilience concept is about networking, its about learning from each other, about understanding of the challenges, and make them into opportunities." [Østergaard, 2018, 06:45]

Of course you can ask, what is resilient about urban sprawl, what is resilient about developing a preserved natural area, or what is resilient about developing a neighbourhood on an area, that is in high risk of flooding? This argues about that resilience has no physical expression. Resilience does not have a particular image, and what is resilient about Ny Rosborg is not the buildings, roads or sewerage systems, its the knowledge and expertise gained when developing the buildings, roads and sewage systems in the area. This is also supported by Jakob, when he was asked how we can recognise resilience in the area;

It has nothing to do with the physical appearance (...) its all about the process and the way of thinking (...) [Østergaard, 2018, 24:59 & 25:14]

Speaking of the process, as we found in section 5.1, resilience is about knowledge sharing but also about the process in which knowledge is produced. Resilience focuses on developing a comprehensive understanding of the challenges and potential threats the city might experience, and how to be better prepared for these. Jakob explains that the process of Ny Rosborg has been "totally flipped around" [Østergaard, 2018, 26:24]. Jakob explains that when they initiated the work on the development plan, neighbours, citizens, developers, experts on nature, pollution, water handling and politicians were invited to attend workshops and city-walks with the objective of gathering information and involve people to develop ideas and visions for the area [Østergaard, 2018, 27:18]. The planners were also having meetings with the environment department, ministry of environment,

with the recycle centre to exactly understand what were the challenges. This process of enrolling the relevant actors is what Jakob refers to as creating a platform. After these involvement processes, the planners arranged a workshop with politicians where the ideas from citizens and professionals was presented and was utilised to produce a final vision for the area. Even though this process can be seen as time consuming, due to all the new steps that have been created, as Jakob explains; "We have not drawn a line yet, but it has been going on for 2,5 years now" [Østergaard, 2018, 27:18], this process also speed-up other procedures that in the long-term can be perceived as 'better outcomes'. In this sense, the case of Ny Rosborg, rather than been focused on deliver a spatial or strategic plan, it has been building the required network that high complexity development project requires.

As explained before, Ny Rosborg serves as a laboratory to test and monitor new innovative solutions. In that sense, Ny Rosborg serves as:

... "areas where we test for better building materials, test for new sources of energy (...) test-site where we can monitor how to extract heat from energy (...) climate protection projects started actually this winter"... [Østergaard, 2018, 37:27].

Serving as a laboratory to test new innovations is by Jakob considered as resilient temporary activities in that sense that it produces knowledge and Vejle Municipality gains experiences which are shared within the wider network of 100RC. This is also recognised in the Resilience Strategy: *"The project will contribute insight into the methodology for developing greenfield and derelict land around cities, helping to solve global challenges arising from increasing urbanisation"* [100 Resilient Cities, 2016b, p.29]. Jakob also adds, that in the development of the initial plans for Ny Rosborg, Vejle have gained inspiration from other cities in the network of 100RC, especially on contemporary activities and climate protection. Here Jakob adds, that its not only about learning how it can be done, but also how it should not be done; *"we both get good inspiration and inspiration for how not to do it"* [Østergaard, 2018, 43:07]



Figure 7.2. Temporary activities and pictures showing the process of developing the Development Plan for Ny Rosborg. Pictures received by Jakob as agreed in [Østergaard, 2018, 49:43]

The pictures above shows some of the temporary activities and innovations in the area and different pictures from the process of developing the Development Plan of Ny Rosborg.

1. Energypiles to test geothermal energy extraction from the soil
2. Land surveys
3. Workshop with citizens in the area
4. Professional Workshop with Arcadis, one of several platform partners that have participated in workshops
5. 'City Council on tour'
6. Urban Development fair
7. A temporary activity working as a green gathering point for community building
8. Visualisation of the 'information pavilion' working as a information centre to inform visitors how the project is going forward

7.2 Fjord Byen

As mentioned above, Fjordbyen is one of the 15 lighthouse projects that resilience strategy has presented for Vejle. This project belongs to the second strategic pillar, named as *A Climate Resilient City*, and under this pillar it regards the first goal: *2.1 protect Vejle and turn the water into an asset for urban and social capital* [100 Resilient Cities, 2016b, p.20]. As presented in the strategy, 'Fjordbyen' would be used as laboratory for climate change adaptation and flood control.

As Ulla portrays: *"Fjordbyen is one of our great examples as well, cause that really focus on living with the water. The water being a challenge, [...] we put a lot of emphasis on the perspective of living with the water: How can we make, you know, water being a challenge, how we turn that into something positive or an opportunity to create a better city"* [Varneskov, 2018, 43:25].



Figure 7.3. FjordByen top-view. Source: Vejle Municipality

As described previously in chapter 6, Vejle's assets and communities are challenged and threatened by the water coming from the fjord. In future scenarios is expected the rise in sea water levels from +25 to 70 cm, and under storms burst sea water level would rises until +244 cm. This placed Vejle in a complex position where actions should be taken in order to cope flooding. In this context, the resilience strategy present Fjordbyen as a laboratory to improve water management through the exploration of innovative and integrated solutions such us new multi-use retrofitting public spaces. At the same time this project would be used as buster for the city by encouraging economic growth at the same time that reducing the risk [100 Resilient Cities, 2016b, p.31]. In order to reduce the risk of flooding, the following measures were taken:

- Design flood defence to encourage investment, development and real state value.
- Use Østbykvarteret as a demonstration area where flood management interventions have a recreational and community value.
- Protect the hinterland areas of the Grejs River by installing integrated flood solutions along the road infrastructure to decrease the waterflow.

[100 Resilient Cities, 2016b, p.31]

Interestingly, this urban development project, at the same time that has the aim to address the concrete challenge and threats, it has set the double purpose of improve the living with, and alongside water, to promote economic growth at whilst simultaneously reducing flood risk [100 Resilient Cities, 2016b, p.31]. As general overview, Fjordbyen project covers several other projects which collectively have the purpose to reduce the risk of flooding and add value to the Vejle. The following picture shows the focus area.

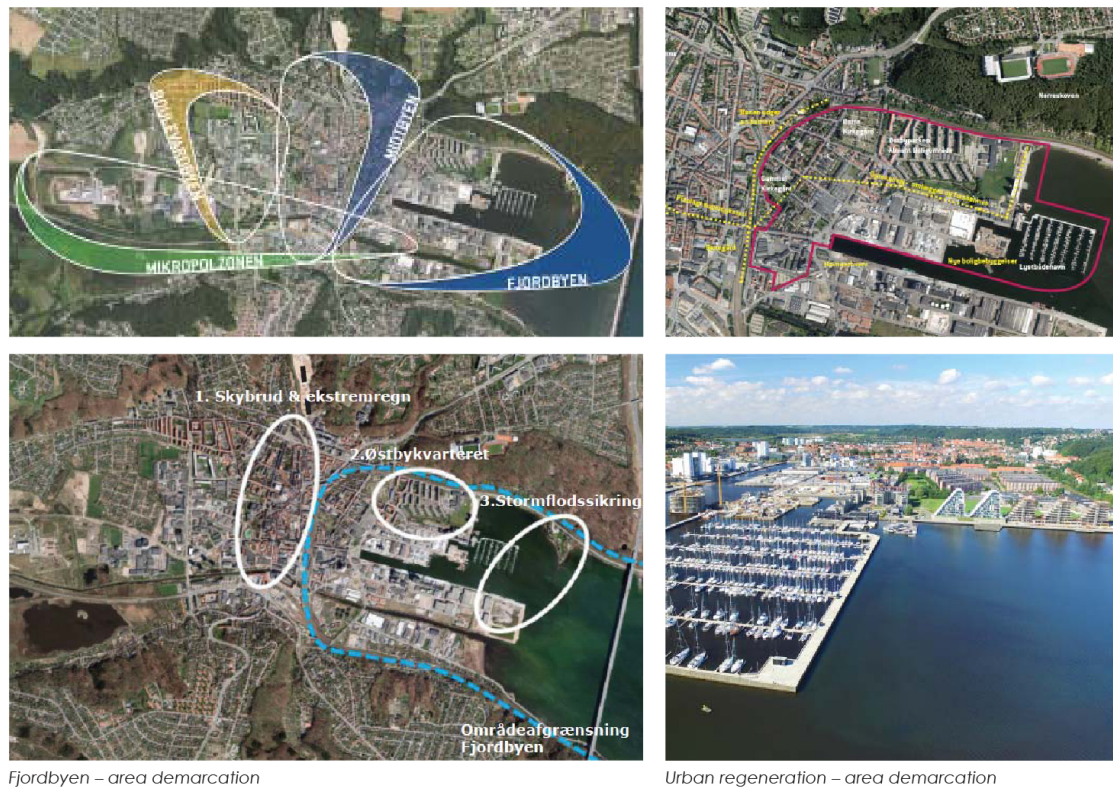


Figure 7.4. FjordByen General area.. Source: [Vejle Municipality, 2017b, p.9]

Similarly to the process described in previous sections about Ny Rosborg project, 'Fjordbyen' has considered the engagement with stakeholders, experts and citizens in order to a collaborative and inclusive design that at the same time foster the community engagement. In this sense, this development has the value of protect and decrease and minimise risk to susceptible assets within the city; adapt the city to changing climate; and build infrastructure with different and multiple functions and benefits for community.

Fjordbyen working as actor that creates network

As presented in the resilience strategy, 'Fjordbyen' project is supported by two other actions, which reflect the interconnection that has been build through the strategy, which reflects the collaboration and cross sector work that resilience thinking promotes. These two actions are: *Smart Water Vejle*, which aim for the design and installation of sluice and water distribution system, in order to decrees the risk of flooding along the Grejs River at the same time that controlling the water levels. This action has the resilience of protect and minimise the risk of city assets; empowering communities by collaboratively installing the sluice; and potentially generating jobs [100 Resilient Cities, 2016b, p.31]. The second action that supports 'Fjordbyen' regards: Hosting a *Vild med Vand* 'Into the Water' 2.0 event. This action refers to an annual summer events that bring communities together in the town of Vejle Fjord. This area is transformed with a different activities that cover different age interests, including water sports, fashion shows, music, art and architecture. The resilience values behind this actions include the creation of awareness and validation of natural and physical assets in the city; it promotes community cohesion; engage communities with the project and organisation; reinforce the identity spirit within

the city; and promote economic growth [100 Resilient Cities, 2016b, p.31].

As explained before, one of the principles of urban resilience regards building upon what has been already built. In this context, Fjordbyen as resilience lighthouse project represents the creation of a new network that integrates both: the previous work that Vejle has made in order to cope with flooding, and future action in order to renovate the harbour front. As it was presented before, due to 'EU Flooding Directives 2007' that commanded the assessment and management of flood risk, in 2011 Vejle and 9 other cities were pointed as risk areas, and were commanded to develop a 'Risk management Plan'. Vejle risk management plan was adopted by the City Council in September 2015, with the aim of *"provide an overview of the challenges the city have and to propose ways of securing it against floods"* [Vejle Municipality, 2017b]. This goal was largely connected and integrated within Vejle Resilience Strategy under different strategic pillars and actions. As an overview, it is possible to highlight that Fjordbyen lighthouse project is netting different plans, strategies and projects in the area: Vejle vision 2050; Municipal plan; Risk management plan; Strategy for Vejle Harbour, and Process plan for Fjordbyen. In terms of projects, it connects to Revitalisation of Skyttehushaven; Super Bicycle lane; Forecourt at the Rowing Club; Climate protection of the eastern quarter; and Housing at Ibæk Strandvej Youth housing at Østerbo [Vejle Municipality, 2017b]. This general overview of different initiatives that the project is agglomerating reflects the complexity of the required network around this very urban renewal project. At the same time, reflects how Resilience thinking and its holistic view can contribute to understand Fjordbyen as interconnected and creating dependant action, rather than a group of independent technical solutions. This action gains a new perspective when, at the same time, is proposing a methodology that conceives collaboration as key stone, involving citizens and stakeholders in the problem and solutions.

Fjordbyen as object that promote Vejle and the travel of the idea

Within the 'EU Resilience prospectus report 2017', which condense different example initiatives from European 100RC members. Here 100RC presents Vejle Fjordbyen/Fjord City as *Flood protection with added value* [100 Resilient Cities, 2017b]. As explained, Fjordbyen considers different sub-projects, which combined, focus on improving citizens' quality of life and living with the water. Some of the mentioned sub-projects are: storm flood protection, rainwater management in East City, and water retention in the uplands. This document highlights that during march 2017 the city council received three flood protection scenarios, which was the result of an extensive and inclusive process that incorporated a team of 100RC's platform of partner network. As Ulla confirmed, through this project, the 100RC platform of partners has been activated and showed the value of it by helping Vejle to go through the process: *"And then we had the dike in Fjordbyen, and then 100RC found a platform partner who consulted so we had [Arcaidis] which is a huge Dutch firm, so they came in to Vejle and then they did different workshops, and stuff on finding a resilience solution to a dike. And that ended up in three different alternatives. And that was free"* [Varneskov, 2018, 01:13:09]. The following pictures shows the three scenarios that Vejle is working on:



Figure 7.5. FjordByen three scenarios for flood protection. Source: Vejle Municipality.

As explained above, within the resilience strategy, Fjordbyen is supported by other actions, where the installation of a sluice was one of them. This action was concretized in November 2016, when a sluice was installed, which has already prevented at least five floods in the city. Finally the prospectus presents that City Council has approved funds for technical solutions for water management in Grejs Valley area [100 Resilient Cities, 2017b]. This short but precise presentation of the project reflects different interests and values that this project and 100RC are promoted. It highlights the integration of added value through multipurpose solutions that move beyond technical solutions and foster and search for improved citizens' quality of life and its connection to the water. It also recognizes and celebrates the good result of the relation between the City Council and the Platform of partners. And finally highlights the economical compromise that the municipality has accepted, which serves as an example of the further impacts searched by 100RC within the local context. Here this project is acting as an object that stabilizes different values that urban resilience and 100RC are promoting, and in that way this project helps to promote the travelling of the idea.

Within the 100RC Global prospectus 2018 report, the presentation of Vejle as a resilient city is also through the Fjordbyen project. Here the discourse is similar to the one explained before, but with the difference that in this new document, it is highlighted that *"The city seeks to next create a visible, creative, and integrated rainwater management solutions in East City, which can be a model project for similar initiatives and securing the funding for this"* [100 Resilient Cities, 2018b, p.16]. Here it is presented the idea of transforming this project into a visible solution that can work as a model for similar initiatives. In this sense the value of sharing the best practices is promoted, but also it is fostered the idea of good solutions that can help as inspiration to others. This last point it can be connected to the goal of promoted economical growth in the city, by promoting and gaining publicity

among larger global network. By doing this, the idea of urban resilience is reinforced, at the same time that Vejle is located in a new scenario within a global competition of cities. This argument can be reinforced when Konstantina mentions: *"the case of Vejle and the Fjord Byen development that they are doing it. So you know, we are elevating this kind of potential global examples, and why this is important and what is the difference"* [Karydi, 2018, 36:06]. In this sense, Konstantina reflects upon the importance of elevating 'this good practices' and showing to the rest of the global network what is that makes them different. Following with this argument, Konstantina mentioned as well: *"Often cities give a lot, give a lot of their knowledge, and they share, and they become better, and they become leaders. And this is what they gain as well"* [Karydi, 2018, 40:04]. This point argues about the fact that special actors/cities composing 100RC network gain a new status at the global sphere, and they start to be the ones leading the development by producing knowledge and examples.



Figure 7.6. FjordByen Waterfront. Source: Vejle Municipality.

In this context, Vejle is arguable moving towards this position by developing flagship projects like Fjordbyen that become international lighthouses. By doing this, Vejle and the other member cities are also becoming agenda setters by being members of this strong 100RC network. Konstantina argues about this by saying that 100RC is definitely an agenda setter [Karydi, 2018, 11:22], and cities by partnering become agents within this new agenda setter network: *"it has been a great opportunity for cities to be agenda setters together with us, especially with cities like Vejle"*. [Karydi, 2018, 17:23]. Here we have opened up the discussion, but was necessary to make a point in terms of how these concrete projects, Fjordbyen and Ny Rosborg, are acting as objects that support the installation of urban resilience worldwide, and therefore, are acting as objects that help make the idea to travel from Vejle to 100RC network, and then to the rest of the world. By being part of this network, Vejle through this objectification and concrete urban resilience actions, it also supports the mission of 100RC, creating a global movement of urban resilience, and with this is gaining a new global status that positions the city into a new different level within the local and global competition of cities.

Conclusion 8

The aim of this chapter is to conclude on the projects findings and answer the main research question:

How is Urban Resilience, as travelling idea conceptualised by 100 Resilient Cities, translated and implemented into the local context of Vejle, and what are the impacts on planning practices and local projects?

To support the main research questions, three additional sub-research questions were formulated. The first one relates to how urban resilience is conceptualised by 100 Resilient Cities (100RC) and how the network is organised. Here we found, that urban resilience builds upon existing understandings and conceptualisation of 'resilience', which in recent years, have gained prominence in the field of urban planning. By contrasting the 100RC's definition of urban resilience with existing literature and definitions of resilience, we found, that urban resilience incorporates ideas of resilience, in particular the ecological framing, used to describe eco-systems "ability to absorb change and disturbance". However, Urban Resilience adds upon this by embracing adaptation as key of a resilient system; acknowledging that disruptive events will occur, creating more desirable configurations for cities to transform into. Urban Resilience is in that sense, a combined measure for city's overall capacity to *survive*, in this way sustain its main functions, *adapt* and *grow* in light of disruption. However, to fully understand the concept, and what it promotes, we looked further into the Resilience Framework, which serves as the tool to build resilience in cities. This framework indicates, that 100RC promotes a more holistic and proactive approach to planning. 100RC promotes, that to build resilience, cities must understand its complexities and weak-points which should be assessed in unison, both internal in authorities but also within the 100RC network through knowledge sharing. We learned, that the framework uses seven characteristics of what 100RC considers a 'resilient' system to identify where cities should enhance their resilience, in that sense, where cities should become more; "flexible, redundant, robust, resourceful, reflective, inclusive and integrated". These seven characteristics make up the *capacity to survive, adapt and grow* when cities face disruption, which is an essential part of the definition of urban resilience brought by 100RC. We learned, that Urban Resilience is not an end-goal, but rather serves as an approach, *resilience thinking*, promoting cities to identify and assess their weaknesses to build sufficient capacity, comprised of the *seven characteristics*, in order to maintain functional and be able to adapt in light of change.

We have identified urban resilience as a travelling idea, containing tools and practices, which 100RC promotes cities to mainstream into their own planning practices. To support the travel of the idea from the global context of 100RC to the local context of member

cities, 100RC have developed an extensive network of actants and intermediaries that energise the travel of the idea. We found, that the network consists of different human and non-human actors which all serves the purpose to support the idea of urban resilience to be implemented in local setting, *member cities*. One of the key actors is the 100RC, that have stabilised the idea of urban resilience into different tools such as: *the framework*, which under ANT perspective represents a 'black box' that needs unpacking to enhance urban resilience in cities. In this process of moving the idea from one location to another, and help to 'unpack' the 'black box', different *platform partners* have been enrolled to guide cities to apply the tools in their local setting. Furthermore, a requirement from 100RC is, that each member city hires a *Chief Resilience Officer* (CRO), positioned within the Municipality to act as point person for resilience building, and creating the link between the global network and the local network. This new actor serve as 'ambassador' and acts as intermediary when connecting and enrolling different local stakeholders, citizens, politicians, and so on, and helping to build the required local network to institutionalise the idea of urban resilience.

In terms of the second sub-research question, which address the local level by looked into how Vejle (Denmark), as a partner in 100RC, has translated the idea of urban resilience, conceptualised by 100RC, into their own organisation and practices. Drawing on Actor-Network-Theory, and the four steps of translation, we have found that the process of translating urban resilience into Vejle reflects the complexity behind the creation of a new network, and some of the four steps of translation, named as: problematisation; interessement; enrollment; and mobilisation, were overlapped and happen to some extent, simultaneously. After Vejle Municipality was enrolled in 100RC, and had followed the formal steps regarding the CRO position, the actual translation process of resilience began. It has been possible to recognise that the elaboration of Vejle's resilience strategy and the application of the resilience framework has worked as main catalyst of the translation process, and under its different phases, the four steps of translation have been followed. In this sense, the value of collaboration that urban resilience, as a method, promotes has strongly influenced the process of translation. In this way, the holistic perspective that urban resilience aims to reach, is based on the integration of different actors within the phase of defining problems and challenges, and the followed definition of solutions. As expressed by the interviewees, this is a new approach brought by urban resilience, which have created the opportunity of talk about problems in a more open way. In this context, it is possible to conclude that the collaborative tools that 100RC have designed in order to install urban resilience in cities, it is also the trigger for the formation of the local network when open up the process to different actors. Here is when the creation of the local network occurred. Even though this process is still new, it is possible to see that the CRO and Executive CRO are mobilising the idea of urban resilience at local and global level, and Vejle resilience strategy works as non-human actor that have define the path-way of resilience in Vejle. In terms of institutionalisation of urban resilience, it is possible to recognise that the enrolment of Vejle into the 100RC network, defined as unexpected and surprising from the local authorities, regards a mile stone that creates the first window of opportunity and prepared the ground for the landing of urban resilience in Vejle, and at the same time created the conditions to challenge current institutions. It has been possible to confirm that, since the program is sort of new in the Municipality,

institutionalisation of practice is an ongoing process, and it is still 'fragile'. Old existing institutions remain strong enough to challenge new practices of collaboration and the mainstream of urban resilience into other plans and regulations. Even though, for the interviewees collaboration and working across sectors seem to be the correct way of working and developing plans, it has been mentioned that the role of them as authority restrict the possibility of innovation. In this context e.g. the law that is necessary to fulfil when developing local plans acts as strong positive feed-backs that reinforce the path dependency of established institutions, and limits the innovative capacity that planners have, and with this, it limits the institutionalisation of urban resilience at this level. It has been also possible to notice that new practices and roles are connected to people rather than being part of the organisation. In this sense, new process of translation and mobilisation are required when, for example, new politicians arrive at the municipality after 2017 elections and the concept of urban resilience was totally unknown for them. Here it is possible to notice that deeper institutionalisation at cultural-cognitive level are more difficult to reach and require the social definition of meanings. Therefore the repetition of the initial steps within the resilience framework appeared as good idea in order to enrol these new politicians (actors) into the network. It has been possible to see that Vejle is institutionalising urban resilience under the regulative pillar by mainstreaming urban resilience in plans; normative pillar by defining new roles of CRO and Executive CRO and including new values and norms of holistic perspective and collaboration within everyday practices; and in the cultural-cognitive pillar by adopting new routines that open the significance of problems in a more collaborative way, and by repeating some new procedures. This is still an ongoing process.

In the third and final sub-research question, we analyse how the inclusion of Vejle in 100RC, and the institutionalisation of the concept in the Municipality, have influenced local planning projects. Here we found, that while urban resilience does not have a particular image or physical expression, the concept and the ideas that it brings along, is recognisable in the case of Ny Rosborg and Fjordbyen in Vejle. Ny Rosborg is a planned development project in the outskirts of Vejle close to Vejle river valley. The area is not suitable for living, due to its high risk of flooding, which according to a planner in Vejle, makes it resilient in that sense, that new innovations and practices can be gained when developing the field. This means, that Vejle considers Ny Rosborg a resilient project since it provides knowledge and expertise, which can be shared in the global network of 100RC. This underpins the argument we have built, that while 100RC promotes resilience as a more strategic approach in municipal planning, it also encourages cities to cooperate and share their best practices.

Fjordbyen has been defined as lighthouse project within the resilience strategy, and it is conformed by several sub-projects that define it as total. Fjordbyen has been presented both at local level of Vejle and at the global network of 100RC as a laboratory to improve water management by the exploration of innovative and integrated solutions, which at the same time can be used as means to improve inhabitants quality of life, and act as buster for the city by encouraging economic growth. Both of these projects can be seen as objects under ANT, which are helping to promote the city of Vejle within the international network of 100RC, and at the same time, reinforce the travel of urban resilience. We have also learned, that through these two projects, new networks are built at both; local level by

integrating other projects, different plans and strategies, and by including different actors such as different departments within the municipality, stakeholders, citizens, and so on, in a more collaborative way; and at the global level through the collaboration with other cities, the assistance from 100RC platform of partners, and by the exposition that 100RC promotes. By integrating the 100RC network, Vejle has arguably gained a new position within the international competition of cities, and by developing these projects, its position as a leader city within the network is reinforced by transforming Vejle's experience into best examples that are opened to the worlds through the platforms of 100RC network.

Here, the main research question has been answered by presenting the main findings regarding the three sub research question that this research has defined.

Bibliography

- 100 Resilient Cities, 2018a.** 100 Resilient Cities. *Resources*. URL: <http://100resilientcities.org/resources/#section-1>, 2018. Last seen 15-05-2018.
- 100 Resilient Cities, 2015.** 100 Resilient Cities. *Lessons from 700 Resilient Cities Applications*. URL: <http://www.100resilientcities.org/lessons-from-700-resilient-cities-applications/>, 2015. Downloaded: 01-06-2018.
- 100 Resilient Cities, n.d.** 100 Resilient Cities. *The 10% Resilience Pledge*. URL: <https://www.100resilientcities.org/10percent-resilience-pledge/>, n.d. Accessed: 16-05-2018.
- 100 Resilient Cities, 2017a.** 100 Resilient Cities. *100RC:Catalyzing the Urban Resilience Market*. URL: <http://action.100resilientcities.org/page/content/catalyzing-the-urban-resilience-market>, 2017. Accessed: 16-05-2018.
- 100 Resilient Cities, 2017b.** 100 Resilient Cities. *The EU Resilience Prospectus*. URL: <https://medium.com/the-eu-resilience-prospectus>, 2017. Accessed: 16-05-2018.
- 100 Resilient Cities, 2018b.** 100 Resilient Cities. *Global Prospectus*. URL: <https://medium.com/the-global-resilience-prospectus>, 2018. Accessed: 16-05-2018.
- 100 Resilient Cities, 2016a.** 100 Resilient Cities. *Resilience In Action - Early insights into how Cities are institutionalising resilience*. URL: http://action.100resilientcities.org/page/content/resilience-in-action#/_-_Yz460TgyNSdpPTEocz5j/, 2016. Accessed: 06-03-2018.
- 100 Resilient Cities, 2016b.** 100 Resilient Cities. *Vejle's Resilience Challenge*. URL: <https://www.100resilientcities.org/cities/vejle/>, 2016. Downloaded: 07-06-2018.
- Ahern, 2011.** Jack Ahern. *From fail-safe to safe-to-fail: Sustainability and resilience in the new urban world*. *Landscape and urban Planning*, 100(4), 341–343, 2011.
- Allmendinger, 2002.** Philip Allmendinger. *Towards a post-positivist typology of planning theory*. *Planning theory*, 1(1), 77–99, 2002.
- Armstrong and 100RC, 2017.** Amy Armstrong and 100RC. *A Focus on Impact: Evidence from the First Four Years*. URL: <http://www.100resilientcities.org/focus-impact-evidence-first-four-years/>, 2017. Accessed: 20-05-2018.

- Arthur, 1994.** W Brian Arthur. *Increasing returns and path dependence in the economy*. University of michigan Press, 1994.
- ARUP, 2018.** ARUP. *Our firm*. URL: <https://www.arup.com/our-firm>, 2018. Accessed: 01-06-2018.
- ARUP, 2015.** ARUP. *City Resilience Framework*. URL: <https://www.rockefellerfoundation.org/report/city-resilience-framework/>, 2015. Accessed: 20-05-2018.
- Batty, 2008.** Michael Batty. *Size, Scale, and Shape of Cities*. Science, 319, 769–771, 2008.
- Baumgartner and Jones, 2010.** Frank R Baumgartner and Bryan D Jones. *Agendas and Instability in American Politics*. University of Chicago Press, 2010.
- Beck, 2015.** Ulrich Beck. *What is globalization?* John Wiley & Sons, 2015.
- Berger and Luckmann, 1966.** Peter L. Berger and Thomas Luckmann. *The Social Construction of Reality. A Treatise in the Sociology of Knowledge*. Penguin Books, 1966.
- Berkowitz and 100RC, 2014.** Michae Berkowitz and 100RC. *Announcing Our Next Round of Resilient Cities!* URL: <http://www.100resilientcities.org/announcing-our-next-round-of-resilient-cities/>, 2014. Accessed: 16-05-2018.
- Berkowitz and 100RC, 2016.** Michae Berkowitz and 100RC. *The First 100 Cities*. URL: http://www.100resilientcities.org/the-first-100-cities/#/-_/, 2016. Accessed: 16-05-2018.
- Berkowitz and 100RC, 2018.** Michae Berkowitz and 100RC. *5 Years: A Growing and Evolving Resilience Movement*. URL: <https://www.100resilientcities.org/5-years/>, 2018. Accessed: 19-05-2018.
- Berkowitz and 100RC, 2015.** Michael Berkowitz and 100RC. *What a Chief Resilience Officer Does*. URL: <https://www.100resilientcities.org/what-a-chief-resilience-officer-does/>, 2015. Accessed: 18-05-2018.
- Berlingske, 2015.** Berlingske. *Dobbelt skybrud ramte Vejle i våd start på weekenden*. URL: <https://www.b.dk/nationalt/dobbelt-skybrud-ramte-vejle-i-vaad-start-paa-weekenden>, 2015. Downloaded: 07-06-2018.
- Borja et al., 1997.** Jordi Borja, Manuel Castells, Mireia Belil and Chris Benner. *Local and global: the management of cities in the information age*. Earthscan, 1997.
- Buitelaar et al., 2007.** Edwin Buitelaar, Arnoud Lagendijk and Wouter Jacobs. *A theory of institutional change: illustrated by Dutch city-provinces and Dutch land policy*. Environment and Planning A, 39(4), 891–908, 2007.

- Burch et al., 2003.** Martin Burch, Patricia Hogwood, SJ Bulmer, C Caitriona, Ricardo Gomez and Andrew Scott. *Charting routine and radical change: a discussion paper*. Manchester Papers in Politics: Devolution and European Policy Series, Paper, 6, 2003.
- Cabinet Office, 2011.** Cabinet Office. *Strategic National Framework on Community Resilience*. URL: <https://www2.oxfordshire.gov.uk/cms/sites/default/files/folders/documents/fireandpublicsafety/emergency/StrategicNationalFramework.pdf>, 2011. Downloaded: 04-06-2018.
- Callon, 1986.** Michel Callon. Some elements of a sociology of translation: domestication of the scallops and fishermen of St. Brieuc Bay. In John Law, editor, *Power, Action, and Belief: A New Sociology of Knowledge*, pages 196–223. London: Routledge, 1986.
- Callon, 1991.** Michell Callon. Techno-economic networks and irreversibility. In John Law, editor, *A sociology of monsters: Essays on power, technology, and domination*, pages 132–164. London: Routledge, 1991.
- Campbell, 2004.** John L Campbell. *Institutional Change and Globalisation*. Princeton University Press, 2004.
- Chadwick, 1978.** George Chadwick. *A Systems View of Planning: Towards a Theory of the Urban and Regional Planning Process*. 2nd edition. Pergamon Press, 1978.
- Coaffee and Lee, 2016.** Jon Coaffee and Peter Lee. *Urban Resilience - Planning for risk, crisis and uncertainty*. ISBN: 978-1-137-28883-7, e-book. Palgrave, 2016.
- Cote and Nightingale, 2012.** Muriel Cote and Andrea Nightingale. *Resilience thinking meets social theory: Situating social change in socio-ecological systems (SES) research*. Progress in Human Geography, 36(4), 475–489, 2012. ISSN 0309-1325. URL <http://search.proquest.com/docview/1032890510/>.
- Czarniawska, 2002.** Barbara Czarniawska. *A tale of three cities: Or the globalisation of city management*. Oxford University Press on Demand, 2002.
- Czarniawska, 2006.** Barbara Czarniawska. *Book review: Bruno Latour: reassembling the social: an introduction to actor-network theory*. Organization Studies, 27(10), 1553–1557, 2006.
- Czarniawska and Joerges, 1996.** Barbara Czarniawska and Bernward Joerges. Travels of ideas. In Barbara Czarniawska and Guje Sevón, editor, *Translating Organisational Change*, pages 13–48. Walter de Gruyter, 1996.
- Czarniawska and Sevón, 1996.** Barbara Czarniawska and Guje Sevón. *Translating organizational change*, volume 56. Walter de Gruyter, 1996.
- Davoudi et al., 2012.** Simin Davoudi, Keith Shaw, L. Jamila Haider, Allyson E. Quinlan, Garry D. Peterson, Cathy Wilkinson, Hartmut Fünfgeld, Darryn Mcevoy and Libby Porter. *Resilience: A Bridging Concept or a Dead End? “Reframing” Resilience: Challenges for Planning Theory and Practice Interacting Traps: Resilience Assessment of a Pasture Management System in Northern Afghanistan Urban Resilience: What*

- Does it Mean in Planning Practice? Resilience as a Useful Concept for Climate Change Adaptation? The Politics of Resilience for Planning: A Cautionary Note: Edited by Simin Davoudi and Libby Porter. Planning Theory & Practice, 13(2), 299–333, 2012.*
- de Morais et al., 2015.** Gabriela Weber de Morais, Achim Schlüter and Marco Verweij. *Can institutional change theories contribute to the understanding of marine protected areas?* Global Environmental Change, 31, 154–162, 2015.
- Demir and Fjellström, 2012.** Robert Demir and Daniella Fjellström. *Translation of relational practices in an MNC subsidiary: Symmetrical, asymmetrical and substitutive strategies.* Asian Business & Management, 11(4), 369–393, 2012.
- Desouza and Flanery, 2013.** Kevin C Desouza and Trevor H Flanery. *Designing, planning, and managing resilient cities: A conceptual framework.* Cities, 35, 89–99, 2013.
- Edwards, 2009.** Charlie Edwards. *Resilient Nation.* Demos, 2009.
- Evans, J. P., 2011.** Evans, J. P. *Towards a post-positivist typology of planning theory.* Transactions of the Institute of British Geographers, 36(2), 223–237, 2011.
- Farthing, 2016.** Stuart Farthing. *Research design in urban planning: a student's guide.* Sage, 2016.
- Flyvbjerg, Bent Flyvbjerg. Five Misunderstandings About Case-Study Research.** Qualitative Inquiry, 2(2), 219–245. doi: 10.1177/1077800405284363.
- Folke, 2006.** Carl Folke. *Resilience: The emergence of a perspective for social–ecological systems analyses.* Global Environmental Change, 16, 253–267, 2006.
- Friedman et al., 2017.** Yael Friedman, Tessa Lee and 100RC. *Cities Taking Action. How the 100RC Network is Building Urban Resilience.* URL: <http://100resilientcities.org/cities-taking-action>, 2017. Accessed: 16-05-2018.
- Galloway and Mahayni, 1977.** Thomas D. Galloway and Riad G. Mahayni. *Planning Theory in Retrospect: The Process of Paradigm Change.* Journal of the American Institute of Planners, 1977. 43:1, 62-71, DOI:10.1080/01944367708977761.
- Ingeniøren, 2015.** Ingeniøren, 2015. *Vejle.* URL: <https://ing.dk/sites/ing/files/images/38081.jpg>, year =2015, note =Downloaded: 04-06-2018.
- Jabareen, 2015.** Yosef Jabareen. *City planning deficiencies & climate change–The situation in developed and developing cities.* Geoforum, 63, 40–43, 2015.
- Karydi, 2018.** Konstantina Karydi. *Interview with Ulla Varneskov, CRO in Vejle municipality,* 2018. Interview conducted 24th of May, 2018. See Appendix E.
- Kjaersdam, 1988.** Finn Kjaersdam. *Public participation in physical planning in Denmark.* Journal of Architectural and Planning Research, pages 163–172, 1988.

- Koop and van Leeuwen, 2017.** Steven HA Koop and Cornelis Johannes van Leeuwen. *The challenges of water, waste and climate change in cities*. Environment, development and sustainability, 19(2), 385–418, 2017.
- Latour, 1986a.** Bruno Latour. The powers of association,. In John Law, editor, *Power, Action, and Belief: A New Sociology of Knowledge*, pages 264–280. London: Routledge, 1986a.
- Latour, 1986b.** Bruno Latour. On the methods of long-distance control: vessels, navigation and the Portuguese route to India. In John Law, editor, *Power, Action, and Belief: A New Sociology of Knowledge*, pages 234–264. London: Routledge, 1986b.
- Latour, 1987.** Bruno Latour. *Science in action: How to follow scientists and engineers through society*. Harvard university press, 1987.
- Latour, 1993.** Bruno Latour. *Messenger talks*. Lund: Institute of Economic Research Working Paper, 9, 1993.
- Latour, 1996.** Bruno Latour. *On actor-network theory: A few clarifications*. Soziale Welt, pages 369–381, 1996.
- Latour, 2005.** Bruno Latour. *Reassembling the Social: An Introduction to Actor-Network-Theory*. Oxford university press, 2005.
- Law, 1994.** John Law. *Organising modernity: Social ordering and social theory*, 1994.
- Lipper and 100RC, 2016.** Bryna Lipper and 100RC. *How to Develop a Resilience Strategy*. URL: <https://www.100resilientcities.org/how-to-develop-a-resilience-strategy/>, 2016. Accessed: 19-05-2018.
- Lyhne et al., 2016.** Ivar Lyhne, Helle Nielsen and Sara Bjørn Aaen. *What Determines the Substantive Influence of Public Participation? An Investigation of Planners' Views on Conditions for Participatory Practices in Denmark*. Planning Practice & Research, 31(3), 311–326, 2016.
- MacKinnon, 2015.** Danny MacKinnon. *Resilient City*. International Encyclopedia of the Social Behavioral Sciences, pages 561–567, 2015.
- Mahoney and Thelen, 2010.** James Mahoney and Kathleen Thelen. A theory of gradual institutional change. In James Mahoney and Kathleen Thelen, editor, *Explaining institutional change: Ambiguity, agency, and power*, chapter 1, pages 1–37. Cambridge University Press, New York, 2010.
- Majoer, 2015.** Stan Majoer. *Resilient practices: a paradox-oriented approach for large-scale development projects*. Liverpool University Press Online, pages 257–277, 2015.
- Meerow et al., 2015.** Sara Meerow, Joshua P. Newell and Melissa Stults. *Defining urban resilience: A review*. Landscape and Urban Planning 147, ??(??), 38–49, 2015.

- Meerow and Newell, 2016.** Sera Meerow and Joshua P. Newell. *Urban resilience for whom, what, when, where, and why?* Urban Geography, 2016.
- Nelson and 100RC, 2015.** Paul Nelson and 100RC. *What is the 100RC Network?* URL: <http://www.100resilientcities.org/what-is-the-100rc-network/>, 2015. Accessed: 16-05-2018.
- Nicolaisen et al., 2017.** Morten Skou Nicolaisen, Mette Olesen and Kristian Olesen. *Vision vs. Evaluation—Case Studies of Light Rail Planning in Denmark.* European Journal of Spatial Development, 65, 1–26, 2017.
- North, 1990.** Douglass C North. *Institutional Change and Economic Performance.* Cambridge University Press, New York, 1990.
- Pedersen, 2012.** Kirsten Bransholm Pedersen. Socialkonstruktivisme. In *Samfundsvidenskabernes videnskabsteori en indføring*, pages 187–231. Hans Reitzels Forlag, 2012.
- Pierson, 2004.** Paul Pierson. *Politics in time: History, institutions, and social analysis.* Princeton University Press, 2004.
- Robertson, 1995.** Roland Robertson. Glocalization: Time-space and homogeneity-heterogeneity. In Mike Featherstone, Scott Lash and Roland Robertson, editors, *Global modernities*, pages 25–45. Sage Publications, 1995.
- Rockefeller Foundation, 2013.** Rockefeller Foundation. *About 100 Resilient Cities.* URL: <https://www.rockefellerfoundation.org/report/100-resilient-cities/>, 2013. Accessed: 01-06-2018.
- Rodin and 100RC, 2013.** Judith Rodin and 100RC. *33 Resilient Cities Announced by The Rockefeller Foundation.* URL: <https://www.rockefellerfoundation.org/blog/33-resilient-cities-announced-by-the-rockefeller-foundation/>, 2013. Accessed: 16-05-2018.
- Rosenzweig et al., 2010.** Cynthia Rosenzweig, William Solecki, Stephen A Hammer and Shagun Mehrotra. *Cities lead the way in climate-change action.* Nature, 467 (7318), 909, 2010.
- Sassen, 1992.** Saskia Sassen. *The Global City.* Princeton University Press, 1992.
- Sassen, 1998.** Saskia Sassen. *Globalisation and its discontents.* N.Y. : The New Press, 1998.
- Sassen, 2000.** Saskia Sassen. *Cities in a world economy.* Thousand Oaks, CA: Pine Forge Press, 2000.
- Scott, 2001.** W.RIchard. Scott. *Institutions and Organizations.* Foundations for Organizational Science. SAGE Publications, 2001. ISBN 9780761920014.
- Smith, 2002.** Neil Smith. *New globalism, new urbanism: gentrification as global urban strategy.* Antipode, 34(3), 427–450, 2002.

- Spaans and Waterhout, 2017.** Marjolein Spaans and Bas Waterhout. *Building up resilience in cities worldwide–Rotterdam as participant in the 100 Resilient Cities Programme*. Cities, 61, 109–116, 2017.
- Stumpp, 2013.** Eva-Maria Stumpp. *New in town? On resilience and “Resilient Cities”*. Cities 32, ??(??), 164–166, 2013.
- Tait and Jensen, 2007.** Malcolm Tait and Ole B Jensen. *Travelling ideas, power and place: the cases of urban villages and business improvement districts*. International Planning Studies, 12(2), 107–128, 2007.
- Teeple, 2000.** Gary Teeple. What is globalization? In *Globalization and its discontents*, pages 9–23. Springer, 2000.
- The Danish Nature Agency, 2011.** The Danish Nature Agency. *Endelig udpegning af risikoområder for oversvømmelse fra vandløb, søer, havet og fjorde*. URL: http://naturstyrelsen.dk/media/nst/Attachments/Udpegningafrisikoomrder_NSTKDI.pdf, 2011. Downloaded: 01-06-2018.
- The Rockefeller Foundation and ARUP, n.d.** The Rockefeller Foundation and ARUP. *City Resilience Index*. URL: <https://www.rockefellerfoundation.org/report/city-resilience-index-2/>, n.d. Accessed: 23-05-2018.
- TV2. Vejret TV2.**
- Vale, December 2013.** Lawrence J. Vale. *The politics of resilient cities: whose resilience and whose city?* Building Research Information, pages 1–11, 2013. ISSN 0961-3218.
- Varneskov, 2018.** Ulla Varneskov. *Interview with Ulla Varneskov, CRO in Vejle municipality*, 2018. Interview conducted 10th of April, 2018. See Appendix A.
- Vejle Municipality, 2018.** Vejle Municipality. *Ny Rosborg*. URL: <https://www.vejle.dk/om-kommunen/udvikling-med-vilje/vi-udvikler-byerne/ny-rosborg/>, 2018. Accessed: 01-06-2018.
- Vejle Municipality, 2017a.** Vejle Municipality. *Ny Rosborg - Byudvikling med merværdi*. URL: <https://www.vejle.dk/om-kommunen/udvikling-med-vilje/vi-udvikler-byerne/ny-rosborg/>, 2017. Accessed: 01-06-2018.
- Vejle Municipality, 2017b.** Vejle Municipality. *Pixi booklet -review phase 1: Fjordyen, Future-proof urban development*, 2017.
- Vejle Municipality, 2016.** Vejle Municipality. *Vejle’s Resilience Strategy*. URL: https://www.vejle.dk/media/4823/vejles_resilience_strategy_webquality_160316.pdf, 2016. Downloaded: 01-4-2018.
- Vejle Stadsarkiv, 1941.** Vejle Stadsarkiv. *Vejles beboere har lært at leve på godt og ondt med byens åer. Her ses Niels Thomas Sørensen (d. 1963), indehaver af et gørtlerværksted i Grejsdalen, på vej ned af den oversvømmede Staldsgaardsgade i kajak*.

Fotograf: Einar Pallesen. Foto: Vejle Stadsarkiv. URL:
<https://secureapi.historiskatlas.dk/api/hadb5.image/113295>, 1941.
Downloaded: 04-06-2018.

Yee and 100RC, 2015. Liz Yee and 100RC. *What Is The 100 Resilient Cities Platform of Partners?* URL: <https://www.100resilientcities.org/what-is-the-100-resilient-cities-platform-of-partners/>, 2015. Accessed: 17-05-2018.

Young Foundation, 2010. Young Foundation. *Building resilient communities.* URL: https://youngfoundation.org/wp-content/uploads/2012/10/Building_resilient_communities_FINAL.pdf, 2010. Downloaded: 04-06-2018.

Zogheib, 2018. Dima Zogheib. *Interview with Dima Zogheib, ARUP*, 2018. Interview conducted 24th of May, 2018. See Appendix D.

Østergaard, 2018. Jakob Østergaard. *Interview with Jakob Østergaard, Vejle Municipality*, 2018. Interview conducted 24th of May, 2018. See Appendix C.

Appendix A

A.1 Interview with Ulla Varneskov, Vejle Municipality

Interview held on 10th of April through Skype.

Jesper Hansen = (JH) Gonzalo Fuentes = (GF) Ulla Varneskov = (UV)

Theme	Interview Question	Sub Question	Data outcome
Introduction	Explaining our research at first		
Introduction	Can you introduce yourself and your role: – as CRO? – within Vejle Municipality as Resilient City? – within 100 RC network?	How to become CRO?	Ulla's role and participation in the municipality and the 100RC network
Vejle becoming resilient?	In short, how was the process of joining the 100 Resilient Cities program?	What is the role of "the program" in Vejle's process? "the program" understood as different actors that are part of the network, fx ARUP the process understood as planning the strategy and implementation	Timeline + possible key moments/milestones
100RC	What is the value of the programme? and	as global organization as "Think tank" as organisation setting global goals and agenda setting	Value of the program, use in analysis
The context of Vejle as Resilient City	Why did Vejle apply for participation in the 100RC-network?		
100RC interaction	How is the interaction/dialogue between the 100RC Network, Vejle Municipality and possibly other member cities?	Fx, sharing best practices in anual meetings or documents.	100RC interaction
Local processes within the municipality.	How is the position of CRO installed into the Municipal organization/structure?		Organisation
The interaction between actors	How is the interaction/dialogue between CRO and the Urban planning department? (how does your role as CRO impact the planning department?)		Interaction between actors
Resilience Strategy and planning instruments	How is the dialogue between the resilience strategy and other planning instruments and regulations?		Dialogue between strategy and planning instruments
Resilience Framework	In relation to the development of the strategy. How would you define the role of the Resilience Framework?		Resilience Framework, definition
Resilience Framework	From your perspective, how the fact of being part of 100 resilience cities program, and resilience thinking, has influenced planning practice at Vejle Municipality?	like for example the project of Ny Rosborg	Influence in planning practices, spatial

Figure A.1. Interviewguide for interview with Ulla Varneskov, Vejle Municipality

00:00 (JH) When you look on the web page of 100 resilient cities it is way more than just been sustainable, it is either a more holistic view on urban planning. Do you really think it is really interesting? has it interesting concepts? (...) what we want to discover is that: how the idea of resilience is like put into urban planning context, and into local planning practices. And how for example Vejle as harbor invest a 100RC, How they use it? How they have implemented resilience as maybe a tool or thinking platform or something like that. So that is basically what our research is about, we understanding how is use, how is implemented, and how it goes from 100RC as a global network, how their ideas and strategies and frameworks are influencing on the local scale, for example in Vejle.

01:01 (JH) We also have arrange an interview with Jim Walda from Rotterdam, which is also a partner in this. And we are going to visit them at the end of April. (...) And right now we are trying to see, because you provide us with Guilherme (...) He was really interested in helping us so, we are also trying to get an interview with him. And we have got the research found and we got small money, and now we can get cheap tickets both ways to London (...).

01:58 (JH) As the first thing, maybe you can introduce yourself, and like your role as Chief

Resilience Officer

02:05 (UV) Right, well my name is Ulla, and I am the Chief Resilient Officer. (...) Well I have a degree in political science, and I am like most CRO, I guess, I come from what you could call the social sector. So [I am up until] recently I am working with affordable housing and integration of ethnic minorities, social cohesion, and disadvantage housing areas, and (...) that sort of work. And we could have a CRO named Jonas, who left us this summer, and when he left I sort of took over. And I said sort of because we actually change the way we organize the work a little bit, and so [still don't having] just a CRO, we also added what we called an "Executive CRO", which is the city manager - [Kommunal Direktor]

03:31 (GF) Is the city manager, (...) is not (...)

03:34 (UV) Is not political [pointed ...], he is the head of the top ranking official within the city. So, him and me sort of partner on this, and you know that's in order to both ensure the strategic political leadership within the resilience work. And then me, I guess, at a more well sort of practical level, or more (...) you know, making the "come to life", I guess you can say. [de udestue]

04:23 (UV) So, in terms of implementation, and the next steps, and the collaboration with the global network, and the international perspective. So we have been doing that since this summer. And (...) well [all overall...] my role be to (...) have the international focus, and to coordinate within the organization, so the internal coordination in 100RC. And developing new steps, and mobilizing the organization, and the strategy work. So, well some times we say (...) I guess you could say that added to the coordination agenda that would be a (...) like a consultant sort of role, so when, you know, when people work in a project [and making it], you know call me and I'll either give some perspectives or maybe connect them to somebody within the international network, and/or some of the platform partners, or sort of the tools in (...)

06:08 (GF) So, we can say that your role is (...) is in between the municipality or the organization, the international organization?

06:19 (UV) yes, yeah.

06:21 (GF) perfect, just to put it in the scheme. Perfect.

06:27 (JH) How was the process, just in short, of joining the 100RC? When did you hear about it for the first time, and then chose to apply for it?

06:38 (UV) Well we have a unit or department within the city called, it is actually call (...) well it existed for a couple of years more of the 10 years maybe, and they are called ["Vifin"], and it is like originally was a [resource center for integration], but now it is a lot wider. And what they do, it is basically a "fund-raising unit", so they get like a small amount from the municipality to, you know, pay rent and stuff like that, and the rest of the money they will fundraise [untypically] in international funds. So, they are experts EU and international funds, and doing all sort of projects within that, you know, international framework, I guess you could say. And, they found the 100RC, which is something, as you know maybe, that you apply for. So, I have heard that more than a thousand cities

applied. So they did the application, and then we got called to New York, and nobody really thought that we would be selected, and The Mayor could not go, and The City Manager could not go, and then [ended] with The Mayor went because somebody had to go, sort of, so the former Deputy Mayor went together with the consultant from from [Vifin], and we got selected. And everybody was sort of surprise that it happen, cause looking at the other cities (...) you know, well famous, huge cities, and we are just like a small city in Denmark (laughs). Well, somebody told us that night, you know I have not totally checked, but that both Copenhagen and Aarhus applied as well, so that is (...) (laughs) (...) and also Greenland did not get selected). So, but we did, and so they then came back and they were: ok, so now we are a 'resilient city', and the we sort of had to find out, ok this are the (...) what we are going to do now. Cause we really did not think that we would be selected. So, then our [core] directors, and the city manager, and the mayor, and the deputy mayor sat down, and had some conversations about how should we (...) go about being a part of this. And, obviously 100RC had some demands, for instance, they gave us money for hiring a CRO, and they (...) said that the function had to be at the director level. So they decided to (...) what is it call when you [...]

10:09 (JH) published (...) the job, or I do not know.

10:16 (UV) Well ja, you had to apply for the job, right. So they put an add saying [...], and (...)

10:26 (JH) So they had to pick the CRO or ...

10:29 (UV) Ah, no no, here we did, we did. So did that, and which, you know, sort of entails that we needed, that we wanted somebody external. Because either you could choose an internal person or you could get in somebody entirely new. And, so Jonas got the job, and he was totally external, he did not even lived in Vejle, never worked here, etc. And, actually I think that was a good choice for the strategy and for the organization. Sometimes when I talk to other cities, they are, you know, they say: why would you hire somebody not from the city, to you know, work with the city's future, what would they (...). But I actually think that was a good think for the [start new work]. So, and then all the different departments or [foragniner], and the organization chose an anchor person who would help to CRO and facilitate (...) you know, being a part of facilitating the whole strategy work, and I was one of them. And I was actually chosen, or pointed before Jonas [almost] got the job, so I have been part of the resilience strategy work since the very beginning. At this point I guess, as the only person (...) people got new jobs, except me, I guess. Well I love working here, so (laughs).

12:17 (UV) So, he came and then we had, I think four or five different coordinators from the different departments who did the work on the 'framework', and (...) do you need to me going in details with the framework, or?

12:38 (JH) (GF) I think we will come back to that. It is just to have the general picture, and maybe if you can mention when, what year was this. Some of the mile stones, or it was more that applied for it, and then you release the resilience strategy, and then (...) maybe they are the two main (...)

12:59 (UV) Ja, I am not sure if I totally remember. So the resilience strategy is from (...)

in February it was two years old, and then, I am not sure if I remember exactly when we started, provably two years prior to that. But I had the information somewhere. But we are a so called first wave city. So you can look it up because, what Rockefeller did, or 100RC did is that they selected the cities in three waves. So in the first wave there were 33 cities, and then you now there was the ceremony in NY, and then a year later or something the second wave, and the third wave [departures] just in six months ago or so. So we are the so called first wave city, and we were the first city in Europe to launch the strategy.

14:09 (JH) Since we are [talking/just moving] about the framework, or you just mentioned it (...) I think we have a question about the framework. Just in short like that you mentioned that it was actually some kind of fund-raising that found this 100RC, we have a question about: Why you wanted to participate (...) I can reformulate it in saying like: What do you think that is the value of this program? What is that you get as a benefit?

14:46 (UV) Well there is many benefits from the work. Well, one obviously is the global network, because we live in times where the world is getting more and more globalized, and many cities and countries around the world are working in sort of the same issues, and maybe we have a tendency to maybe not look out to the world enough, which of course it can be difficult, because how can you possibly know what they are doing in [...], Vietnam for instance. So here you get a [tip of your fingers], you get 99 cities around the world working, you know, on the same issues and working within the same framework, so no matter what part of the world we are from, we have sort of the same language, and the same words, and definitions, and we understand each other easily. Obviously that makes distances way shorter. And 100RC are really good at sharing know how and knowledge, and projects, and you can always ask them and they will find somebody who (...). So that has been really helpful. And then there is the whole (...) the method of going about some of these things. For instance, when we started the resilience work, you know I worked with the city of Vejle for 10, 11 years. And this was, for instance one of the first times that we could say it was ok for us to say: we do not know the answers, you have to help us and be a part of finding the answers, saying that both to the community, and to the NGOs, and within the organization. Cause normally (...) maybe that is a particular Danish thing, because of the whole nordic well-fare model, and normally actors look to us for answers, so they would come to us and say: here is an issue, fix it. And then we (...). But with this, we could sort of more open up and invite people in, and saying, you know, we do not have the answers, you have to help us, and we have to do this together. And that gave new perspectives on some of the issues we have been working with. And another thing that was new, which maybe sounds, you know, why is that new, but it was new. Cause normally we operate in like four years cycles, obviously because of our election systems, and the City Council last for four years, but more projects we do or in fund-raising we get normally for between two or four years. So everything is sort of in four years cycles. But now, with the resilience strategy and the resilience methods we are talking about the future and the [long goal] and the distant future, talking about, so what would our city be like in 2050 or in 100 years. And what we would like it to be? and what decisions do we have to make now in order to ensure you know, the future that we want for our city. And, that also gave different perspectives on maybe not the challenges, but the solutions.

19:11 (GF) Just a small question, but in relation to those cycles that you mentioned, four years, are those cycles related to the electoral cycles.

19:20 (UV) Yes, mostly.

19:32 (GF) Ok, so this kind of way of thinking is giving you a more longer vision than the Major's period (...)

19:35 (UV) Jap. And, then of course, the holistic perspective. Cause, we always talk about being holistic, and we always talk about being, you know, [...] at collaborating across silos, and [...] etc, but it is not necessary very easy. But the resilience method gave us a tangible platform for facilitating the collaboration across sectors, and also with civil society and NGOs, and again working here for 10 years, and working with resilience for 4 years (...) I can, you know, without a doubt say that it have a grate impact on our both ambition and ability to collaborate across sectors. And i really do think that that, without a doubt, makes us a stronger and better city, and better at delivering the services that we [do].

21:08 (JH) So you could say also in a way that, this network coming from the outside has also made like a common base for the whole municipality to work together in that, a base or what you can call.

21:28 (GF) Moving in a (...) well we talked about processes of application, and why did you apply and so on. But you mentioned that is a (...) about this connection between different cities, and learning from each other. How you could explain that dialogue between the different cities and the different municipalities maybe? How is that in the everyday life? How it happens? Like there are some meetings, or it is more fluent, formal - informal?

22:13 (UV) Well, we have the gift of 100RC still taking this, so every once a months, or every six of five weeks we have skype calls with all the CRO, from well Europe and Middle East. So they have us in different regions, and then we will meet up. So we have a joint, a meeting year facilitated by the office in London. And then, Rockefeller Foundation or 100RC makes grate point of sharing practices and stories and what happens. So if anything really relevant happens, like recently Atlanta did something on cyber-security, so if we get hacked or [...] staff like that, and then is something that is shared with the network, and there is a [webinar] that you can join and they will talk about what experiences and solutions, and staffs, that happens between either joining the [webinar] or you can watch it at a later point. And, then of course, when being part of the network you always have closer friends. So, somebody that either have, you know, close relation to, either in terms of the challenges you have or of course personal relations and staff like that. So, for instance, Vejle has really close relationship with Rotterdam, and now how is the CRO.

24:14 (JH) Jap, we spoke to him and then we got the contact to the other guy

24:20 (UV) Ah, he is brilliant. And Paris and Bristol, so I mean (...). They also do training programs, so because I am a new CRO, even though I have been part of the work since the beginning, I am still newly appointed to. So I had a training program together with the newly appointed CRO in Barcelona, and [Suplicy], so they are trying to do different staff that will connect the cities. And then in Europe, of course the EU presents opportunities

to work together, so we do EU projects together. Now we have something on roof gardens, together with Rotterdam. And we just got something on building resilience communities with I think we are six different resilience cities in the same project. So it is easy for us to reach out to each other, and we do that quite a bit. And so, and then of course like, for instance, we have field trips where the politicians will go on trips and learn (...) finding knowledge, you know, to the extent that it makes sense we connect to the other RC so we chose cities within the network so we have the connection with them. Yeah, so we have quite a bit both multilevel but also [by] level. And people, I mean (...) we have an on-line community. Just for the CROs. It is not that people use it extensively, but it is there, and if you put up something in the community, everybody will get a notification, so you can chose either no ones, or all can see this, and then all we get an email saying: Vancouver has posted (...)

26:51 (JH) about that CRO position you said that it is maybe the connecting link between the 100RC and the Municipality or the resilient city, What is it that (...) as far as I know, you get some money for hiring a CRO but is like from a 100RC is that it in term of the economical support?

27:19 (UV) No, I am sorry, I forgot to say something about, I will return to that. They also have CRO summits, so [up] until now once a year they gather all the CRO from the entire world, in a summit. The last they was it in July in NY and I am not sure they will do it again, because there was so extremely many people because all the platform partners come, and the CRO, and some of the deputy, and then (...) so i think we were some of the several hundred people. So maybe they will do it a bit differently, well anyway so they do that as well. Ok well, when we join 100RC they for two years they financed the CRO position, and also a bit of money to be able to pay for travels. Cause obviously that is a part of the functions as well. So our two years run out a year ago, I think, so now is something that we finance by our own, so we do not get money from them any more. We do not get directly financial support.

28:52 (GF) You mentioned something really interesting that at the very beginning there was a requirement from 100RC program, that these CRO should be installed in a directive position within the municipality. So just looking at the municipality structure, the organizations, How is this (...) it change a little bit because of this new (...) actor?

29:20 (UV) Well I think, I really do think that it would be different from city to city. I do not think that you can make a general rule on what works on Vietnam and what works in Denmark. And I think here the challenge was that being (...) it is quite difficult to be a director with no portfolio, so it is this just one person. And your job is to do a strategy, so it is quite small. And, so, I really think that is not necessarily the strongest position in Denmark, or in Vejle. Cause you need to have some sort of portfolio in order to be (...). And so, now when the City Manager says: ok so, you know, I will take it on, I will be the anchor in the board directors. I will make sure that our strategic work connects (...) that there is a connection between this. And it is a [my ...], and when I (...) cause they wanted to be an a director level because they want it to be so: when the CRO calls out on the organization, that person has strengths, and has the ability to say: it needs to be this. And me coming out saying: The City Manager wants to be like this, it is a lot stronger than saying: (...) well they say I am not an anchor, I have no portfolio, I have nothing,

but I wanted to (...) it does make sense?

31:11 (GF)(JH) Yes, totally.

31:12 (UV) So, I definitely think that this is stronger than the previously one. And I do not necessarily think that I was not that easy for him all the time, I think.

31:26 (JH) I guess so, since (...) it is also like quite new, and then you have to get a new position, then maybe a stable municipality with a strict order and organization could be a tough time to influence that, coming as a whole new thing. More in to that, How does this resilience strategy and your position as CRO influence the normal working of the municipality? Do you know what I mean?

32:00 (UV) Yes, but it is difficult to give one straight answer to that. Well this is not the strategy, [is like to ...], so the strategy consists of, I think 50 lighthouse projects and then 93 or something supporting initiatives. So, obviously, (...) well, let me start a bit different to speak into that. When we did the strategy, we did a bit different than, I think provably many other resilience strategies, cause we did not do a strategy in a traditional sense. So a very traditional strategy would be, it would have more, you know, steering. It would have specific goals, specific task for specific people, and you know. We instead did what we called a mobilizing strategy, like an invitation for cooperation. Saying this is what we think of the challenges, this is what we think could be some of the solutions, please join us in realizing the visions. Which, luckily now I can see two years down the line, that people took on the invitation, I mean in the broad sense. But obviously when you do it that way, then some (...) when we launched it some of the lighthouse projects on it were our best guesses, like this. Cause we didn't know everything. So some of the lighthouse projects, are no longer relevant or we did not [sharp] [...] we did not hit [pull sign] on those, and I think that is maybe two or three. But the rest of them is really far along, and people whether took on the challenge and the invitation. So within the lighthouse projects, you know specific resilience work, goes on. So that is one perspective, and then the other is how we implement or normalize this within the broader organization, and that is the ongoing work, and the work that we are focusing right now, because it is a bit different to what extent the resilience work, as a method, is implemented within the different departments. I mean is not the same, you know, speed that they adopt it. And obviously it makes more, or maybe not sense, but I guess it is a matter of (...), you know, when you start this work and you take on a new method, it would, you know, fall in to something. Something would be going on already, and then it was sort of (...), if can imagine a river in every department, where it would get dumped, and then, you know, either it would fit very well with what it is going on or (...) it would need to be shaped a bit differently or more connected to something else. Like our welfare department just launched a huge [sætnings], on innovation as a method. And then, you know, they started with that, and it was quite a bit a long, and then the resilience came, and it is like: but we are doing innovation and, so we need to be connected on, so what is resilience and innovation, and how they are connected. I mean, for instance, you can not really do resilience without innovation, but you can definitely do innovation without resilience. So, that is sort of ongoing work, (...) but I really think (...) and I am repeating my self, but one really really important thing is definitely that working across sectors is a lot different now than it was. And even though people might not say the word resilience, it is a result of the resilience, and I have no doubt

in my mind. And I guess I can say that because of I have been part of it, but it has not being mine, you know, it is not what i am doing, I have just been a small part of the whole process.

37:59 (JH) So, as you said, I am also repeating a bit my self, as I said before that, this resilience concept has made like a platform both like from Vejle to 100RC, but also like in Vejle itself. Like where you have a common platform and resilience as the concept has, (...) you have to think about it in the different departments [...]

38:25 (UV) yeah but you know, I am (...) just to some it is more a common platform than to others. I mean, it is the way that it is, I mean it is a huge organization, and I think is 12.000 people working here so, and to some it is more (...) like our technical department really took it on and they are really strong actors (...). And our health department as well, you know, talking about [...] the holistic approach to being healthy and to prevent different sicknesses and how can you (...), so they use it a lot. And the Child Youth department, do it as well in terms of, like (...) is there an english word for that? (...) well [melbebuddeborn], (laughs), what is the english word for that? (...) Do you know the flower that grows up from asphalt, it is really strong, a yellow flower. (...) well In Danish we have a term where we call it: [...] children, and which is, which signifying that some kids do really well despite what they have been through. And within psychology you look at what factors make some kids do really well despite what happened, despite that they have been, you know, disadvantages in some areas, and they called that resilience factors, so what are the resilience factors that make the kids do well. So they work with it, in terms of that, in terms of braking the circle of social heritage, and they use resilience. So again, (...) but then our cultural department is maybe a little less, well you have to be more, you know, less implemented with them, but (...)

41:03 (JH) You said that the technical department really took it in to their own work, are they doing like the local planning and urban planning?

41:12 (UV) Yes

41:13 (JH) How do you see this, I know that it is quite new and you are still implementing into your won work within the municipality, but how could you imagine, or has it even like made some changes to the urban planning or local planning, like the resilience word or the resilience concept is use in the more newer local planning, or (...)

41:35 (UV) Yes, it is a (...) well for instance we have a new district that provably will be build

41:46 (JH) Is it the NyRosborg, yes we heard about that

41:52 (UV) Yes, it is in the strategy as well, and it is a, or they call it the resilience district (...). But again, the cross sectors collaboration, cause now it is totally normal for the technical department , when they have to build something, like a [dam] or whatever, you know, it comes natural to them to call the social sector and say: [what is your understand of] workshop, and that was not a normal practice before but now it is something we do, so we, you know, across when they are working in something urban planning they will invite people from (...) you know, to ensure the holistic approach to (...) is not just bricks,

it is people, and life, and future and how can we, you know, speaking in to that context, and, we always look at the add value, how can we maybe do more, how can we get more value from this. How can this on thing be an opportunity to create more holistic value. So, I am sorry, I forgot your question.

43:19 (JH) About the local planning, and the like how it has been adopted in to planning?

43:25 (UV) Ya, we (...) Fjordbyen is one of our great examples as well, cause that really focus on living with the water. The water being a challenge, if not now then it will be a lot in the future. Well it is now, but it will be more [...] in the future, and, but we put a lot of emphasis on the perspective of living with the water: How can we make, you know, water being a challenge, how we turn that into something positive or an opportunity to create a better city. To give an example, just last month, the city architect and me went to [Yorns], were we got invited to participate in like a round table debate on the water, or on flooding. And what we really noticed was that in New Orleans, no matter where you are in New Orleans, you can not see the water, which is really weird, because it is, you know, really something important for the city and both in terms of the way they live and they make money, but also very much in terms of flooding and [swarms] and all sort of different challenges, but they just build a wall so you could not see the water anymore. And, I talked to somebody who live there and he was like 13 generation and he was like elderly, and he said that: when he was a kid then you could see the water everywhere, and everybody was very aware of the water, like for instances, everybody would learn how to swim. But now nobody sees the water, and they are just sort of pretending is not there, well I am exaggerating a little bit, I do not think that they pretending that is not there. But no body can swim for instance. And I am just thinking, that looking at Katrina and Rita, and I am guessing it would be a good thing if you can swim. So we talk a lot about that. We talk about how we were totally different with the water here, and opening up to the water. We have both the Fjord and the stream going through the city and they would all flood when there is a hard rain, but we opened up the stream everywhere. It used to be covered. There is like a huge [straight point] through the city where the water used to go underneath but we opened up the street to see the water, so we did it everywhere and in Fjordbyen whenever, I mean, when you build something in Fjordbyen you have to provide access to the water, it is a demand. So now, for instance, right now [Kirk kapital] the people behind Lego, are building their headquarters at the Fjord with [Olafur Eliassons] he designed it. And it is an awesome building. It is just about everything is [known] but anyway, it was also a demand to them that they have to provide access to the water, so public can still go out to the water and go through the building to the (...). And Olafur Eliassons did some art at the cellar, also with the water, where the public can access. So it is, I mean, we used it to create awareness, and you know, planning to live and cope with water

47:33 (JH) But is it like, is there is any difference from like what you did before, becoming a resilience city to in terms of how you work with urban planning today? cause it provide that, we talked a bit about, the vision that you do not look four years or 12 years, you look way further that that. Has it provided some different glasses how do you observe the city?

47:56 (UV) Yes, there would always be the challenge with this type of work. It is very

difficult to prove, I mean for instance, I can not tell if we have become more resilient. Are we 40 pct. more resilient now than we were 2 years ago? or you know so forth. And, because it is a mind set, it means, it can be difficult to prove that the mind set changed something. I mean, if you are very critical you will say, how would you know we would not have done that anyway, I don't know, I just know that resilience as a method is something that we are working with, and it gave us different tools and different language, and it improved the way that we were go about finding new solutions, wether or not we would find a different way to [...]. I can not possible know, but

49:02 (JH) But now since you are in this network, you have to be aware of resilience thinking, and about the concept of thinking in the future, and you also have that platform where like you share good ideas with others. (...) you just can not deny being resilience.

49:24 (UV) That is true. And I think provably it is develop process. That would provably be (...) maybe easier and faster, to where we are better at.

49:38 (JH) It could have done it either way like , without being resilience. Maybe this has speeded up the process as you just said. Cause you have like, you are getting funding, and you have to employee a CRO (...)

49:50 (UV) Ja, and you have to continue talking about this, even though it is difficult. Cause that is one of the things I talked to the city architect as well that we have sort of different examples that we have to, I mean we cannot just give up, we have to stay in a conversation, even though it is very difficult. So we could have said: Ok let's just live it for now and we would look it again next year, or something. But now we have to continue coming to the meetings and continue finding a solution, even though it was difficult. So i think you provably right in terms of (...)

50:33 (JH) And also from my background in Aalborg municipality as a student job, I have like had some experience where like on the political said, where there is a new city council, them might focus on something else. But now they cannot just drop it because it is part of the organization, like you have it already implemented so far. So even though there might be a new mayor, and he would does not think that much about resilience, now it is there within the organization, maybe it is more resilience towards different political goals, you could say. More stable. Since it is implemented. I have one last thing, and then maybe you have something.

51:24 (GF) It is important, (...) well I think it is important if we can take this point,

51:29 (JH) Yes, that was actually what i wanted because it is about the resilience framework, that we do not know that much about it. So if you could tell about it, and how you used it, or if it is something that mostly 100RC uses? what was used for?

51:48 (UV) Well, ok they (...) developed a wheel of fortune (laugh) I cannot remember the name, but anyway. They created a wheel (...) ok let me explained differently. They are saying that in order for a city to be resilient it needs to have a certain 7 indicators, I think they called. So it has to be redundant, it has to be flexible, it has to be (...) I should be able to remember them, but I cannot. But in order to promote that in a city then you first need to know your challenges. So the first part of the framework is across

different sectors, and civil society, and NGOs, and etc, you have to agree on what are our greatest challenges, and for that they crated a wheel that you can work through with different perspective on so, how it is in terms of (...) I cannot remember the english word, [forsyning], 'utility', in terms of like property, and housing, and public services, and all sort of different (...) and we would go through different excersises in different workshops, with different actors, and at the end it would all be compiles, and then it , you know, would be show some of them, some of the challenges that were, like commonly agreed on upon being a challenge. And then when you know your challenges, then you have to look at, what are the opportunities. This is the challenges, what opportunities are there to address some of these challenges. And, let me just add something to that, because often we talk about resilience and the resilience strategy, and people say: but what is the new innovative outcome of these. People sort of expect resilience to be something entirely new, and resolve and something entirely new to be build, or in some other way being very tangible. But the framework, which again, I actually really agree with, you know, that method. Even though it presents other challenges, for instance explaining what it is and what the outcome is, but anyway. So the Framework is, [Lige up til], ah well that you implemented within the work that you are already doing. So first you decide the challenges and then you look at what are the opportunities, for instances what strategies are, you know, would be implemented or what build areas are we looking at, what would be develop, what would be, you know, and then you connect the opportunities to the challenges, and that results in specific ways to go about it, and for us it was the lighthouse projects, the 16 projects. Does it make sense what I just said?

56:10 (JH)(GF) Ja, In relation to this, because you mentioned at the beginning this common language that is set from the program, so now almost, or indeed all cities are talking the same language, but how this framework is setting that language? Maybe is this framework setting the language, that you need to use in order to talk with others, and is this framework setting the points that you need to look, and maybe excluding some other points? how could you say that, about setting the language and setting what you need to look.

56:57 (UV) Well it is not really a recipe, but it is (...) in terms of the common language, is like for instance when you talk about the challenge then to us it comes natural to say, to come with another different perspective, and we all know why the different perspectives are being added to, so how we would prevent flooding? Should we build a dam? Should we build a wall? That is one way of going about, you know keeping the water out. And then, so when we talk about that problem, and that possible solution then, we can easily, or actually when we talk about the problem we can easily skip to a possible solution without having to go through all the different, for instance scenarios, or perspectives on. So we do not have to talk about should we build a wall? case we all know it is not resilient. I mean, so we will all know what type of solutions we define interesting, or making sense, or addressing the problems that we (...). Because normally, maybe you can always write any other city in the world: Do you have any (...) what are you doing against flooding, maybe they say, we build a wall. But asking these people, and then saying: Do you have good examples of flooding, they would know what I mean when I ask for a good example.

58:32 (JH) Ja, that is the common language, that you mentioned. Also when looking at

this framework, I think that I have seen it on the webpage, is that the yellow one with all those small pieces of cake, with each different numbers, and I think they are also working with the Index.

58:49 (UV) Yes, the city resilience index.

58:25 (JH) But these small things, like when you see this framework you have to work with each one of them, and then you are able to talk with the others. How do you do with this annual thing.

59:09 (UV) Well, when we look at our challenges, so when it has different levels or square, they have different colors. So green, yellow and red. And you know, you work with the red ones.

59:25 (JH) Are you making that with 100RC or that is your own work?

59:30 (UV) Well we did it on (...) At the beginning we had, when we did launch the strategy we had a strategic partner, which at the beginning it was [Eclay], and then at the end was ARUP.

59:49 (GF) Yes, that was my question like how did you talk with ARUP, since they developed this framework?

59:59 (UV) Well they were our strategic partner, so all the cities would have a strategic partner, helping the cities go through the specific processes. And, again, Jonas had all the (...) so I do not necessarily know all details. But, so ARUP would be our partner in going through it, and making sense of quite elaborate tools. And I think the tools this sort of there is a little bit of challenge with the tools, is that they have to be applicable for both you know Scandinavia, and India, which it make it a little bit difficult at times, or [...] some elements being less meaningful. So Arup was the partner in going through of the process, and at the beginning it was [Eclay]. So they were consultants on going through. And I think they did our strategies as well, but they did not wrote it, but they did the layout. As you provably notes that all theses strategies they look sort of the same.

01:01:28 (JH) So you were getting some guidance in working in this resilience thinking while you were making your own resilience strategy. But, as I understood now it is up to your self to use this resilience, you are more free [...], you decided, freedom of choice on working with resilience.

01:01:58 (GF) Well it is not here, but now how (...) or what is the status now? In what position are you today? In general perspective of this strategy, In what stage are you today, i this?

01:02:19 (UV) Well, I think there are two answers to that question. Well we basically launched the strategy 2 years ago, and nobody has a plan for now what? And being the first city, I mean, no body is going to delivered the answer. So internally here, city manager and the Mayor and so forth we sort of discuss things , what would be the best next steps now. And we, cause we just had an election and we had a new city council, and on third of the members of the city council are totally new, and they have never heard about resilience before. The word doesn't even exist in Danish, so when people talked

about, they were like: what? And, some of the new city council members, one of them wrote me an email saying: I was just in a meeting in a different city and they ask me about resilience, and I was what the hell is it? So, you know, at looking at the strategy then all of the lighthouse projects that would be really good examples are really far along and then some of them would never be. Doing a policy for social resilience it just doesn't make sense today. And, so, all the light house project that they would be are really good far along and all the different 93 initiatives in the strategy, almost 80 pct. of them are either done or running. So we talked little bit about that maybe we should go through the same processes again, with the new politician. Maybe we should, I mean we have not decided yet, but maybe we should have them across different political parties and so on, agree on, you know, actually what our greatest challenges is. Because they weren't actually really involved in that process the first time around. So some of them are saying, some of them that have been along for the entire ride say: well maybe, I mean, we understand the good part, but we are not sure if resilience is the answers, then what is the question. So, we just talked about i think we should involve the new city council in the question, instead of just skipping to the answer. So I think we will at least to some extent, do it again some how, and then revitalize the strategy with new stepping stones in terms of projects and (...)

01:06:02 (JH) So we are running a bit out of time, but I think we are also far in our interview guide. One last thing maybe, we are also trying to like to map the actors, and say like how you (...) but maybe we could briefly talk about how like your position is and how like (...) because you have that platform, how is that like in control, maybe we can use the white board for like map like what is Vejle's position, what is the 100RC position, and how they have been influencing, If you know what I mean? We have try to do a bit like this saying here we have Vejle and they have being influence from the top of 100RC, they have to find the CRO, and have to do a resilience strategy. Then we have maybe on this stage, we have the 100R cities, like having the common platform with the annual meeting and

01:07:03 (UV) So, you mean mapping in terms of

01:07:08 (JH) Like the organization in total like the actors involved

01:07:17 (UV) So...

01:07:23 (JH) We talked about that your position was like in between the 100RC and the municipality like the connecting link

01:07:33 (UV) Yeah but I am not sure (...) So If this is vejle, then we have the 100RC, and of course then we have 99 cities, and probles (...) and then I have linked to different people, CRO's in specific cities, and do you want the cities ?

01:08:31 (GF)No no, just the general scheme

01:08:37 (UV) And then other than the cities, they have platform partners, well like that.

01:08:51 (GF) And ARUP would be one of them, for example or not?

01:08:55 (UV) Jap, I don't know if that make sense.

01:09:17 (JH) Just to understand ARUP was like was kind of consultancy for 100RC as

well when developing this framework, or was just only ARUP, Do you know that?

01:09:30 (UV) No, well at the beginning they had, so there was the 100RC, and then they hired the strategic partners, who were I think provably different in some in Europe, some Asia, so then you would get appointed as a city and then you would get appointed with an strategic partner, so that was. For instance, ARUP, and many other organization, (...) the platform partners, do you know what is that “platform partners”? (...) Well for 100RC and Rockefeller they found important, wisely, to connect with businesses [...], so they have a lot of different business as B Platform Partners, so when you are a Plataform partner then you have to do pro-bono work, for the cities. So, me being the CRO, or other people in the city can do it as well, I can either say: Somebody ask me to be in a meeting or in a presentation on a topic I don’t know nothing about. For me could be urban planning. Then I can ask 100RC, and they will find a platform partner that knowns as expert in the topic, And then I will get three hours one or one knowledge that they will share, they will teach me something about a specific topic. So that is one way. Then I can also say, as we did in Fjordbyen. In Fjordbyen, we are actually working in a dam or a dike. And we talk to (...) well when we realized the strategy we also signed something called the [pledge], which is very american. And [pledging] for a certain amount of our city budget committed to resilience, which is sort of empty, because it will always be resilience to some extent, right? So we had to sign the [pledge] and then, do very officially in the mayor and staff, and then we would get access to platform partners and they set certain amount, a huge amount, i think is like 25 million dollars or something, totally crazy. And then we had the dike in Fjordbyen, and then 100RC found a platform partner who consulted so we had [Arcadis] which is a huge Dutch firm, so they came in to Vejle and then they did different workshops, and stuff on finding a resilience solution to a dike. And that ended up in three different alternatives. And that was free.

01:13:05 (JH) So that was funded by 100RC

01:13:10 (UV) Ja, well I am a little bit unsure, I think, which is (...)

01:13:14 (JH) But you didn’t pay for it

01:13:16 (UV) No, because they are doing pro-bono work. And you know, the problem with that is , I think,the vision was that the cities and the compromise together will find a new innovative solution, which will provide something new for the companies to sell other cities, right? But what really happens was that cities would have specific problems and then they wanted something that would fix it for free, and the consultant come in and do what they normally do, sort of, or what they are already expert in, and then they would try to offer more services to the cities. So it hasn’t worked perfectly, but on the other hand, it is a huge platform of know how that we can access.

01:14:09 (JH) And you could say that without being a part of this platform you would never have had [Arcadis] in to work and made the workshops

01:14:27 (UV)No, and they also [flew some] people from New Orleans. (...)

A.2 Interview with Jim Walda (JW), Rotterdam Municipality

Interview held on 25th of April through Skype.

Jesper Hansen = (JH) Gonzalo Fuentes = (GF) Jim Walda = (JW)

Theme	Interview Question	Sub Question	Data outcome
Introduction	Explaining our research at first		
Introduction	Can you introduce yourself and your role: – within Rotterdam Municipality as Resilient City? – within 100 RC network?		Jim's role and participation in the municipality and the 100RC network
Rotterdam becoming resilient?	In short, how was the process of joining the 100 Resilient Cities program? (and have you worked with 'resilience' before entering the 100RC?)	Why did Rotterdam apply for participation in the 100RC-network?	Timeline + possible key moments/milestones+ their experience with resilience before?
100RC	What is the value of the programme?	as global organization as "Think tank" as organisation setting global goals and agenda setting	Value of the program, use in analysis
Rotterdam in the 100RC - the process and key moments	Can you summarise the timeline of the process of becoming a Resilient City? Can you recognize the key moments or milestones regarding this process?		Data for timeline
	How is the interaction/dialogue between the 100RC Network, Rotterdam Municipality and possibly other member cities?	Fx, sharing best practices in anual meetings or documents.	Definition of Actors and interaction among them.
	Can you recognise other actors than the mention before? and how are they interacting in this network?		Definition of Actors and interaction among them.
Local processes within the municipality.	How is the position of CRO installed into the Municipal organization/structure?	What is the 'resilience team' and how did it emerge?	embedding of 'resilience' / institutional change
The interaction between actors	How is the interaction/dialogue between CRO and the Urban planning department? (how does "the resilient team" impacting the planning department?)		translation process enrolment and mobilisation
Resilience Strategy and planning instruments	How is the dialogue between the resilience strategy and other planning instruments and regulations?		Institutional changes
Resilience Framework	In relation to the development of the strategy, How wold you define the role of the Resilience Framework?		Translation process, definition of problem
Resilience Framework	From your perspective, how the fact of being part of 100 resilience cities program, and resilience thinking, has influenced planning practice at Rotterdam Municipality?	Can you mention some concrete actions that have emerge do to this process.	Concrete actions, has 'resilience' influenced urban planning practices?

Figure A.2. Interviewguide for interview with Jim Walda, Rotterdam Municipality

0:42 (JW) I looked in the questions, and i hope i can answer them as completely as you like. Something i cant really answer 100 percent, but i think i can help you a long way, at least tell you where to look further, i hope this will be sufficient for you for now.

1:10 (GF) Yes definately, thats perfect. As a very brief introduction, as we have told you we are writing our master thesis on resilient cities and urban resilience, we are taking a starting point in the global perspective, looking into the programme of 100RC and moving towards the local context and how this programme is influencing local practices and local projects and so on. And that is the way we have organised the interviews aswell, from the global ending in the local and something that focuses more on projects.

2:10 (JW) Yes, that sound logical.

2:12 (GF) Just to start with, can you introduce and present yourself and explain what is your role in the municaplity and what is your role in the 100RC, sorry in the resilient team.

2:35 (JW) I started in november at Rotterdam municipality and i started intern basis, my first intern job was as a project manager in the resilience team in Rotterdam. We are a

relatively small team with 5 people me included we have 2 communications advisors, we have CRO, chief resilience officer, actually we are 6, well mainly advisors and one more friend and then there is me, six in total.

3:30 (JH) So you actually have a resilience team?

3:33 (JW) Yes

3:38 (JH) We also had an interview with Ulla Varneskov from Vejle, which is the CRO, and they don't have a resilient Team. She was just the CRO and she was influencing her colleagues and trying to get this resilience into the municipality. But you have a whole team working with resilience?

3:57 (JW) Yes, in practice we basically do the same, but I reckon we are a larger city so I guess we have larger funds to implement ideas like resilience. So we build don't actually implement ideas ourselves, but we try to influence we try to nudge we try to educate, and in that way we try to implement the ideas of resilience. We aren't the people that actually build resilience, we influence the sectors within the municipality and private companies to become more resilient, and citizens of course.

4:48 (GF) Okay, yes, how is the relation between your team - I know that there is this CRO, but your relation within the 100RC network, like you as a city and you as a person, just to get an overview?

5:20 (JW) Yes, I'll start with the broader picture, our major (WHAT) contacts with 100RC from Rockefeller foundation, I'm gonna send you (WHAT) which gives a broader picture on when the project started from Rotterdam. Basically our Mayor started the concept of resilience and it started in a water context because Rotterdam is the outer city in the Netherlands which on average, I don't know the exact numbers, but around 60-70 percent are below the sealevel, and we have a very complicated system of dikes, pumps, mills to actually keep the city dry. So that was the first concept of Resilience for the Netherlands. So we started the network, we were one of the first cities that became part of the network. You can find this on the internet and in the newsmesssage I will send to you, I think that will help you. But Rotterdam and the resilience city network takes resilience more broader than just water. Water is in the Dutch perspective more about climate, and also the municipal system regarding water is a little bit complicated compared to other countries because we have a independent system which has independent taxes, independent elections, separate system of government, I think Germany has it as well, but globally it's pretty unique. The water management is independent of state government and municipal government, it is a government in itself. But Rotterdam, focuses on social resilience, energy transition, social cohesion, there are a lot of things going on in the city, lots of shocks and stresses, and some things are a long term, some have been there for a long time, social cohesion, poverty, these are stresses, they are long term, they are already there, there are here for tens of years, and they probably won't go away that fast easier. Shocks can be terrorist attacks. The context in the network, our CRO Arnoud has a lot of contact with the 100RC network, many skype calls with people from the Rockefeller Foundation, they are like the main hub that are connecting people, but also within the network itself, people find each other. For an example there were problems with the water in Paris, few months ago, and then our CRO asked the Paris CRO if it could be helpful if he went there and see

if he could share expertise, share company, share ideas to help the city of Paris with their water problems. And that is the biggest help for Rotterdam in the network. We can send expertise on water issues, we also had a trade mission to Sharoud, that was from the central government level but with the city of Rotterdam as well. Arnoud and other members of the Rotterdam Resilience team went to Sharoud, its a city in India with a lot of problems on keeping the water clean, so they went there and shared expertise and the 100RC often make funds possible, there is a (WHAT - exchange something) you could imagine that cities have a lot of priorities and cities in India does not have the same priorities as Rotterdam, but in this project they can be helped by external funding. Because otherwise, its often difficult to sell, because what will Sharoud bring back to Rotterdam, i guess its much more indirect. Erhm, lets see what more. Oh yeah, for an example after the terrorist attacks in Manchester in the stadium there were people from the greater Manchester Municipality, will also send police people to Rotterdam to tell about their experience and how they managed, what happended, thats all confidential, i dont know what they said because its safety issues, but i can tell that it happended, and that these exchanges happen. This is exchange of knowledge, exchange of expertise, exchange of experiences, there are also sometimes conferences, for an example in the 7th of June we are hosting a conference here in Rotterdam about energy transition, and we have around 30 cities that are invited which will come to us to talk about energy transition, and afterwards there will be four different technical universities in the netherlands where professors and students will discuss the problems the cities have laid out and see if they can find new innovative solutions for them. There are many examples of this, if you want i can give more details on one of them?

12:12 (GF) Actually its interesting, because it is connected with the folowwing questions which you have touched upon in a broader way, what is the value of the programme, and through this sharing experience its a big value, but maybe you can see or mention maybe through the same examples, like in general words for the whole programme and for Rotterdam in specific as a global organisation, as a think-tank or as - yes setting the global agenda?

12:59 (JW) Actually i would like to take it one step higher, i want to take is a the whole idea itself. Resilience, i think, its not like a holy scripture, its a concept that helps you make a city better, more efficient and more future proof. And resilience is one of the ways to acheive that, as far as i know its one of the most worked through concepts with the biggest network, that actually make it more deep. There a thigh books, and they are all about ideas and concept. You also have to do something about it, ideas are nice but as a city you want things to be done. The 100RC network started as a a part idea, part funding, part network. The network and the funding can make those ideas reality. And also to test these ideas in a global concept, or the global scale, if we in Rotterdam try something and its a big failure for whatever reasons, then we can be the test garden for it, so there dont have to be 100 cities to test it and fail one by one, i think we can share best practices, we can make a catalogue of ideas that worked and didnt work and i think in my personal experience its important to have those people who did it before you, we are a part of a municipality so we are responsible for building buildings, we have to sell the ideas to them, they have their own budgets, we want to do this with your budget, we maybe want to help you in men hours and help you with ideas and help you implement

it, but you still have to do it, its extra work and extra time, so you really have to sell the ideas, because at first it just seems as extra work and extra cost, you really have to sell the concept to be able to tell people what is the added value of resilience. So, it helps to set ideas, helps to actually influence and to nudge the behaviour of the municipality itself. And the think-tank concept, well for example we have a resilience scan, its a concept that started from 100RC, so they are they made the broad outlines, the questions, well basically we have the 7 resilient lenses, and they all have a definition, and the resilience scan adds questions to all those qualities, and those questions help to start a discussion, helpt to make some kind of measurement of how resilient something really is, and it can also show the blind spots and uncertainties, something can be talked about being really good, but if you can let something out, the resilience scan can really help to bring these concepts out. The 100RC started with the scan and we in Rotterdam developed it further. We already did it on several projects, we did it for a social housing unit, and now other cities in the resilience network wants us to tell them what we did, and what was the good things and bad things about, if its ready, if we can translate it into english, if we can send it back to them. Thats a good example of the think-tank, and also it can carry the networks value of the 100RC further.

17:37 (JH) Just briefly, you mentioned some lenses, resilience lenses or resilience scan, is that a tool that 100RC has provided or is it something you have developed?

17:56 (JW) You have the 7 qualities of resilience, and I think that Rotterdam have translated them, so we did not spin them that much they are raw translations. You always have your own focus as a city, the questions are always within a context of a city, so in Rotterdam we use it in another context than New York. To explain the lenses to people, to explain the qualities, we explain them as lenses, we basically have 7 lenses that helps us to see things in another perspective and that is the way we often try to explain people why there are 7 qualities, because if you come to a room and you say we are from the resilience team and we are going to talk about 7 qualaities, then you suddenly loose half of the attention in the room. Resilience, and why do i need resilience, and after poeple are annoyed, because if you dont explain it correctly they see it as an insult to their work, because they think they are already doing their job well, and now there are some punks that tells us to do it differently. To us it is important to explain, that we are not here to take their job, to tell them how to do things we say that we try to make their work better and to add value on the long term to everything the city does. I believe that its very important.

19:53 (JH) Did you know about - or have you worked with resilience before Rotterdam entered the 100RC network?

20:00 (JW) Well, actually i havent heard about it before i joined the team. I think within the municipality on the strategic level or a little bit higher level, most of them have heard of it and they know the rough concept, but if you ask the average employee, they will not know what it is, and if you ask the average citizens, they will not have an idea. They often think if you say resilience that you say brasilian, brasiliance team? That is quite confusing. We use an english term resilience because the duthc word does not cover the whole scope of the english word, that often happens to translation, and therefore we have chosen to stick to the english word. Netherlands speak english pretty well and the level is

pretty high, but resilience is a pretty difficult word and not everyone speaks the language.

21:16 - (JH) In Vejle they also call it Resilient Vejle, which is a combination of Danish and English and the danish word for it can be translated to 'robust', robustness

21:37 (JW) Well thats funny, in Netherlands its like flexible

21:45 (JH) Ahh, Ulla said the same thing thst being robust is like, it does not have the adaptiability part within the term, as resilience has which have been evolved over many years, so the same goes for Vejle in Denmark.

22:07 (JW) This is my personal opinion because my team does not agree with me, so you should not say that this is what the Resilience team thinks, because this is my opinion. I think that you should have a work in your native language for it. It is so much more difficult to sell if you use the english word for it. You know the elevator pitch concept, everytime i need to tell i need to tell 30 second what it actually does, and lots of people do not understand, i think its unnecessary complex to use a foreign language. This is my personal opinion.

22:51 (GF) Yes, that is perfectly fine, maybe briefly if you know how was the process of joining the resilience scan from Rotterdam, maybe you can mention some milestones or key episood when joining the network?

23:22 (JW)I will email you right away the press release, its in english as well so it easy for you, you are Jesper and you are Gonzalo?.

23:37 (GF) I am Gonzalo

23:39 (JH) And i am Jesper

23:40 (JW) I didnt know for sure

23:46 (JH) Sorry about that

23:49 (JW) I will send it to you, again i joined the resilience team in november so im relatively new, so i missed all the milestones basically, this is from the newspaper, in December 2013 100RC selected Rotterdam among the first 33 resilient cities, and then it goes on about (WHAT), Unofortunately i have some holes in my knowledge about milestones, so im afraid i cant help you that much with that, unfortunatel

24:36 (GF) Its okay, dont worry about it.

24:44 (JW) I just did a brief search on it on the internet, but im pretty sure that the newsmessage is helpful.

24:56 (GF) This one? Yes, well yeah perfect, you mentioned that there are alot of interactions between the different cities and members, especially for sharing experiences, but how is the dialogue or the actual process of connecting with these cities, and the municiaplity, do you have a specific process, meetings with the team and the planning department, or something more structured

25:49 (JW) Ah yes in that way, well we are working towards a more structural concept

because it started more like ad-hoc, but we have, strategic resilience team, and the Rotterdam municipality are roughly divided into 7 clusters or 7 sectors, and the municipality, I think every municipality are pretty unique, if you look at Amsterdam or The Hague, they do it things differently, and as I see it in Rotterdam municipality, you can call them like a hundred different companies, with all their own, they have a lot of things in common, but some clusters do things very differently than the others, and we have 7 strategic people on the relatively influential scale in those clusters, and we share ideas and concepts with them, and about that we standardise it. The mayor of Rotterdam is a big, well he basically said that it's a good idea to do something with the resilience network, but on the political context, the mayor does not have any influence on those things, of course he can influence it by saying it will be great, or whatever, but if you don't listen to him there is nobody, there is no formal channel, so that's informal as well, and yeah we have a lot of ad hoc, do you understand ad hoc?

27:46 (JH) Yes

27:48 (JW) You have a lot of ad hoc solutions at the moment, but we are trying to make it more standardised, and the resilience scan is one of those ideas to standardise it. For the more, we also try to make some kind of different measurements with some indicators for resilience, the 100RC send us a resilience city index, the CRI, it's a big document with 157 different qualitative, and then again same number of quantitative indicators, and we are looking into that if we want to use it as some kind of measurement of our own city. So, concepts like that we try to implement, we try to mainstream resilience, to make it more of a standardised thing that is normally accepted in the municipality, but for now we actually try to nudge the change of behaviour to change the ways that it's always been done, and, well we are in a transition period.

29:11 (JH) I think that is really interesting what you just said and that is also what we want to research on because you definitely see some values of this resilience and that is why you want to implement it and standardise it into your own municipality, do you have some like, how can this resilience, these lenses and this framework, how do you think this will be implemented into urban planning?

29:47 (JW) Well, we already implemented it to an extent, well I think resilience is just a tool for a city to become better, and it must never be the goal in itself, it's a tool, not a holy scripture, and well, what I believe is, that resilience is a way to help cities to become more future proof, to help to be more of a network than just building standalone, but also on the social scale to help people more blend in, to help that people are equally, consulted in decision making, and that no minority groups are left out, and I think this is a great way to give those broad ideas, to actually help them implement them on a small scale, because those are, but they change things on a very small scale, on how to build a house or a road, those small things are actually the things that make a city segregate and that make a city (..) and so on. You start at small scale, and there are actually so big challenges ahead of us, so we try to change, refugee crisis in Europe. You have a lot of uncertainties, but the only things that are certain is, that a lot of things are going to change rapidly, so you want, I want a city that is resilient, that is flexible, is robust at the same time, basically a city that is adaptable to whatever is going to happen. A small example is, well I think resilience is also about efficiency, think about multi use of objects, use your money

as smart as possible, and don't build something and destroy it 30 years later because you need something new. One of my favourite example is that we have a project that promotes green roofs in Rotterdam, and well, if I'm the owner of a building and I lay a green roof, it will cost me money so it's not that interesting, but maybe my roof needs to be changed 10 years later than it normally would, but still if you see the cost-benefit it is not so interesting. But if you bring together partners, then a lot of things suddenly makes sense because, for Rotterdam (WHAT), mean that in the big shower moments, when there are a lot of rain suddenly, it happens more and more often, the sewers can't take the water, so they flood, basements flood, a lot of damage and a lot of problems. Green roofs work like a sponge, a lot of water is soaked into the roofs and all the surfaces, or green roofs we have, is no longer extra rain catching but rain collecting. Then again, if you look at health, if you have a lot of green roofs in your city it helps with fine dust, people get less sick with them, if you look at a green roof it's nicer than just a concrete floor, and you could maybe use a green roof for recreation, use it for a restaurant on it, you can think of many spin off effects that it have. If you start looking at a city in that way, as a network, as a whole, it's not just buildings and roofs, it's organisms that influence each other, then you can start seeing many possibilities, see things that are possible, because just moneywise, it's often about money, you can bring people together that alone never would be able or would fund something like that, but if you take other people together, you can get wonderful ideas and you can actually do things. That shows you, that resilience, is a different way at looking at a city and it opens door, it opens another perspective on things.

34:42 (GF) It's interesting because Ulla from Vejle here in Denmark also mentioned the green roof example you are working on, and she said that they are working together, Vejle and Rotterdam on the same projects, sharing ideas and..

35:04 (JW) Very nice, again we try to nudge ideas and try to help them so there are a lot of things where I don't have a clue on the current status, because we just bring in our knowledge and help and we hope that we can make it standardised in other parts of the municipality. I think there are over 8 or 9 projects in Rotterdam where we have some kind of, well most of them, we just follow and advise, some we give some funding, but most of them we just (WHAT) basically, that is what we do.

35:43 (GF) In relation to just that, we are in the interviewguide just below the grey line in the middle, we just ask about interactions and dialogue, and now in relation to these interactions, can you recognise some actors, some specific actors that help these interactions, that for example you said CRO, that he is connecting with global, within the municipality, how is, what are the key actors that you maybe can recognise?

36:31 (JW) Yeah, well, first of all we have the strategic resilience team, those are the strategic managers of several clusters of the Rotterdam Municipality, they are our eyes, ears and mouth in those clusters basically, they can help us measure things, they can help us bring up messages. Second of all, Arnoud our CRO has a very broad network because of his title, the title really helps to open up doors, it's crazy, but if you are CRO, people suddenly just want to invite you and you are an interesting person to have around. The title really helps open doors, it's very fancy. The Mayor of Rotterdam also helps a lot, he also asks sometimes people to join on trade missions and so on. So, and for the rest it's used as an ad hoc network so we all have our own people we know of, internal and external and in

the municipality, so that is ad hoc. We just know people, and its relatively easy to find people that matters, if i want somebodys number i can just find it in 10 seconds and call them and we can make an appointment. I think you can say that the basic connectivity to often Rotterdam Municipality is pretty well arranged and relatively easy to make an appointment.

38:38 (GF) Just to clarify, you mentioned this Strategic Resilience Team, and is this the same time the 7 clusters, the 7 heads, are they the same? Are they sharing the same or are they different, or a they combined, i mean in the municipality there are the 7 sectors that i can imagine are having different specialities?

39:07 (JW) They are different specialities, im just looking them up, i dont know them by hand. So, you basically at the top of the municipality you have politics, the college of, ehrr how to translate this in English, you basically you have the city council, then you have the mayor, he is actually chosen by the city council, maybe thats not so interesting for you, but that is just politics. Then, they basically give out the budgets, they decide what gets money and what not. You have the 7 clusters and they do not have the same money of influence because somethings are more important or monetary, you have, im just looking them up on the computer, you have the cluster, social development, cluster of the city development, cluster of, well (WHAT), City Maintenance, then you have work income so they also do a lot of social funds for people who do not have a job, and they try to get people back on the roads. Then you have the cluster, erhm, the cluster service basically, you can get information from them, they have the (WHAT), and then you have the cluster of, well basically they are the data internal cluster, so they are basically the, erhm, they are the, they do the strategic things for within the municipality they do the public relations, they do the finance, they are the, what is the word again if you have people that takes care of their own employees within their own company? Thats...

41:46 (GF) Arh, not financial, no, not economy no, but i dont know...

41:54 (JH) We know what you mean, but we dont know the word either..

41:58 (JW) The annoying word, we cant come up with the word, im just gonna bring a glass of water for a second.

42:08 (GF) Yes, no problem.

42:11 (Gonzalo and Jesper dialogue while Jim is collecting water) This is interesting, because then we can see how the CRO is inserted in this structure, that is the.

42:18 (JH) Yes, that is interesting. (Points at interview guide), but we need to know more about that.

42:35 (JW) Yes, im back again.

42:38 (GF) Its interesting because, now you are touching the, what is the theme that are connecting to the next question, and maybe you can share where are you looking at this map of the municipality structure, can you share that with us?

42:58 (JW) I will send that to you, but it is completely in dutch, so..

43:01 (GF) No No its ok, actually we have a friend here, that is also from, he is also dutch so maybe he can help us to translate

43:09 (JW) Okay, yes, its, i will send it to you immediately, its, how to say, its a complex map, its like a web of, its unnecessary complex, it actually one of the things that Rotterdam Municipality, i think its a thing we need to improve, do things as a city.

43:48 (JW) kay, further on.

43:54 (GF) The next, questions is, in relation to this complex web you mentioned, how is the CRO installed in the municipality in this structure, from what you know?

44:17 (JW) We are part of City Development, if you look at the spider web, we are City Development, under that there is sustainability, under it the resilience team, that is the way its officially implemented.

44:41 (GF) In terms of decision making, the CRO is at the level of, we can say for example the heads of city development, or social development, or is it below them?

45:01 (JW) He is below them, because these heads have hundreds of employees under them so we have a head of sustainability, (Dutch name), he is the boss of our Chief Resilience Officer, (Dutch name), is a director of City Development above him.

45:49 (GF) Well maybe this, actually, erhm yes. Yes, and again, talking about the dialogue between the different departments, or the clusters, how is your team, the Resilience Team, or the CRO, influencing the for example planning department. You mentioned before, that there was some conflicts sometimes when you tried to push resilience thinking into another, over people that they are already making a good job as you said.

46:37 (JW) Yes, its also important to say that we are not laying out rules for most of them, we are just laying out ideas, a lot of things are not currently mandatory, and i do beleive that most things should not be mandatory.

47:02 (GF) Yes, sorry, what things, like some specific tools or specific way of doing things?

47:16 (JW) Well, the resilience scan is one of those things, we give people a set of questions, we give them resilience goals that helps with the questions, and then we talk and work on what are the strong points of resilience, and what are the weak points, are there other projects that might have something to do with this, can we share concepts, can we help eachother become stronger, erhm. But it is still up to them to go on with the process, we cant, its not like they will get a fine or get fired if they don't do it. They often have their own good idea, its not like people say we refuse to do it, because we think that you are stupid, its often because they dont have time or the finances, or, its not prioritised, that is also difficult, because we try to get a higher agenda, because we believe we should always do it on everything we do, because on the long term you add value, and you make a better city, and you get more banks for you bucks, you work more efficient. That is something we try to convince to people, but its, we are getting better and better, and i think we are already doing some quite impressive things that are happening.

48:58 (GF) A specific questions, have you heard the other departments, or the other clusters, the other technicians using the word 'resilience' when they are speaking about

projects or something.

49:19 (JW) Yes, it does actually come back in some high level reports as well, we actually just discussed about how to measure the mainstreaming of resilience, we discussed it and its very difficult to measure something like that, how broad is this resilience being carried around in the municipality, and the next step is ofcourse that we also want companies and citizens to join the effort, that is the step afterwards, so how to measure something like that. Yes, ofcourse we see it back in some reports, you see it back in some political parties, actually in Rotterdam Municipality, but if you ask the average citizen, they would have no idea what you talk about, they would say that you are wasting your money, catch criminals, take away the trash and just do your job. That would probably be the average action of the average citizen because, yeah. But within the municipality yes i think its the decision makers, i think alot of them know what we are talking about.

50:55 (JH) Erhm, we talked about something just right before and now we are touching a bit about on what we have on the concrete actions, and as you mentioned before, its nice to develop some resilience ideas, or what we should call them, but the value of resilience, is like, like its nice to have a lot of ideas, but if you dont implement them, or they are not getting into real life, there is maybe then not much sense in it and value in it, so asking in a different way; For an example if Rotterdam Municipality the planning department is working on a district plan or a local plan or a project in general, how would you as a part of the resilience team, influence and impact and making plans more resilient?

51:52 (JW) Well, we are working on going from ad hoc basis to a more structured basis, and so its still an ongoing discussion, but the way i do it right now is that i suggest that you do the resilience scan, so you first make an analysis on your strong and weak points, and how those points can potentially help the resilience 7 goals of Rotterdam, and afterwards we can look at what we are going to do about it, thats also a very important question, we saw that we have some strong points and some weak points, what now. I think that already just to talk about is always very very influential to start with, because so far we also had discussion and they came up with ideas and concept and suddenly "oh we havent thought of this, or oh we should do this" and I think just to point people out, that, we have these concepts and ideas, and that will already add value to a project, and it takes relatively little time, just to do a basic simple scan, because you can do it as broad and complex as you want, its a pretty basic scan, it takes maybe half of day, and maybe in total for everybody we are 6-7 people involved, and then you have something to think about in your planning and in your process, because, yeah, those are the people who are going to implement their process or their project, and if you just make them aware of ideas they already think differently and they already did something, not everything you want of course, but its a good start i mean.

53:48 (JH) So you could say in a way, just correct me if im wrong, this resilience team, you are actually working in different clusters of the municipality trying to improve the city of Rotterdam becoming more resilient? Like trying to influence different decision makers?

54:15 (JW) Yes, we also have some projects ourself, but most of we try to influence others. So, we have a lot of projects, in which we do a little, if you see it as a total projects. We try to get it on the table where a lot of people do the planning and developmen of the city,

and we try to be part of the process as early on as possible, we believe that if its still in the planning phase, then we can do the most, and the later you go in the process, more things are already decided, its never to late. We also discuss projects that are already being build, and even then, there are still things that can add value, its never to late but the earlier the better.

55:13 (JH) So this resilience scan you mentioned, is that your best tool right now to try to influence decision makers, possibly urban planning?

55:24 (JW) Its one of the tools. I believe we have several things, we have presentations, we have people, there are a lot of things that has been done before, that made it possible for us to invite people to do the resilience scan with us, because there was a lot of work on the awareness and education and everything before you are able to do something, like a scan. Its one of the tools in a larger process.

56:05 (JW) But we try to develop it as a tool that hopefully will be broadly used within the municipality and maybe after that in other cities and outside the municipality with companies and citizens. But that is still an ongoing discussion, so its a possibility and there are a lot of factors that influence that decision. Its also politics, partly.

56:38 (JH) I think definately this Resilience Scan, which you are working on at a local scale, its really interesting and also that, maybe you could explain what is exactly this resilience scan and maybe use an example where the scan has been really useful?

57:02 (JW) Im not sure if i can share all the details with you, but i can tell you the broad scope of it. And if you, how long is your resarch, what is you end date?

57:19 (JH) 8th of June

57:21 (JW) 8th of June

57:22 (JH) So a month and a couple of weeks

57:26 (JW) Thats actually pretty coincidental because we try to have the resilience scan ready at the 7th of June, so i will suggest that you contact me in half of may on the scan, if its interesting for your research. For now i can only give the broad scope of it, but im not sure what i can and can not say, so i have to be a little bit vague on it.

58:00 (JH) Thats alright

58:04 (JW) Okay, so the 7 goals of the city of Rotterdam is to make a resilient common ground, to mainstream it, and one of the ways to do is the resilience scan. And the 100RC network started up with a scan tool, and we developed further on it from there. We are three (WHAT), we are first the schocks and stresses, secondly the resilience qualities and thirdly the resilience goals. First of all, we ask some questions about the shocks and stresses, if the project is prepared on these shocks or stress or if its non applicable. Of course if you live in a dessert the risk of sea level rises is probably, yeah okay.. So that is the first step. Second is about the resilience qualities, we have the 7 qualities or lenses as we call them, and we ask some questions if people, erhm im looking for the english word for it, does the saying "to give a hand a feet" mean anything to you?

59:44 (JH) Say it again, give a hand a feet?

59:47 (JW) To give something a hand and feet, so you have a concept, and if you give that concept hand and feet, you can actually make the concept, you make it something that can actually happen.

1:00:02 (GF) Ah, yes, like making it more concrete or?

1:00:05 (JW) Yes, making something more concrete, that is good enough. Erhm, so we have the 7 qualities and we have some questions about it, and then we ask people to scale in how high they actually score on these qualities, we ask for example, why did you answer this, and in the end, we have a broad scope of what they are prepared on and what they are less prepared on. And then we look about how can the project (WHAT), to do the resilience goals of the city. That is roughly the scan. We mostly use it on physical projects right now, such as social housing, and, stuff like that, but actually this and in the several next weeks we are also planning to test it on social projects and processes, so its, we hope that it will be a project that actually, that the scan can be broadly used on different things, to measure resilience.

1:01:30 (GF) Perfect, and is this scan, we can say, a new version or evolved version of the resilience framework? Which helps, or leads to develop resilience strategy?

1:01:48 (JW) Erhm, not, erhm, of course in an extend yes, because the resilience framework made the strategy and from the strategy on, we do things like this, and yes, so, okay.

1:02:09 (JH) Maybe you are not the right one to ask about this, but when you made the resilience strategy, how was the interaction between you slash the resilience team and the 100 resilient cities?

1:02:30 (JW) There are a lot of things in this question that i do not know, but i can help you to a certain way. I know that Rotterdam actually was one of the first cities to actually make the strategy, so we were a forerunner in a sense, and now The Hague here in Netherlands also tries to make a Resilience strategy, so we can help them in developing that on their own. But i was not there when it was created, so I really do not know for sure.

1:03:24 (GF) Yes, i think, the last one, in relation to the practices, we already talked a bit about it, but maybe if you have another idea, how is, being partner of the network influencing the practice in, specifacly in terms of urban planning, how is it influencing.

1:03:58 (JW) The answer to this i think is really subjective. Well, i have, its also very difficult to measure, but i think we make strategy and the resilience lenses may help, its obvious for many people in the influential that something needs to be done for the city to secure its long term contunituty, and also to make sure that the city will stay safe and actually live in the near furture in the long term. But, to what extend, i cant really answer that.

1:04:56 (GF) Yes, for example you mentioned that this scan, the process of scan is applied in some different project, so in that sense you can say its influencing the way the project is created, i dont know, but well its an option.

1:05:22 (JW) Can you repeat the question please?

1:05:30 (GF) Yes yes, the main question is, can you recognise or how the fact of being part of the 100RC programme and the resilience thinking has influenced planning practices as Rotterdam Municipality

1:05:55 (JW) Oh, okay, well i believe that the whole resilience strategy, the resilience goal, the mayor of Rotterdam being somebody that wants resilience to happen in the city, the CRO and the title and the opening of doors that the whole network brings with this. I think that it helps to actually change the things for otherwise they probably could not been able to change because well if you are a one person and one of those clusters in the municipality, and you want to change something, or maybe you can change it within a theme or a cluster, then you are very lucky, and persistent, but o actually make something change within a municipality you need to have something like a team above those clusters that work like that. Resilience is also supposed to be worked on together, and not like seeing (WHAT), like this is my part and this is your part, you have to work together and actually make things happen and i think its very important but completely immeasurable to do things like that, to have a team and a network behind you where you have influential people behind you, because otherwise well. I can have to. Well if i say the exactly the same thing as our CRO of our team, people are not, and they are like "oh yes we can make an appointment in six months", and if he does the same, they say "yes i will come to you tomorrow". So its only about ideas, its about how influential you are within an organisation.

1:08:04 (GF) Well, i think we have covered the whole interviewguide

1:08:10 (JW) Greate

1:08:12 (GF) Yes, we really appreciate your time.

1:08:17 (JH) Its been really helpful, so thank you very very much.

1:08:20 (JW) Well, good to hear.

1:08:22 (JH) And we would like to ask you if its ok that we contact you again on mail if we have some following questions, and you mentioned we could maybe ask you in mid May if you have news on the resilience scan?

1:08:39 (JW) Yes, i have to say again that unfortunately time is limited, we have a lot of things, we always have to say no to a lot of things, so yes you can always contact me but i cant promise that i have sufficient time to answer, so be prepared for that.

1:09:06 (JH) We have full understanding for that, so for now thank you alot for your time.

1:09:10 (JW) Well you are welcome, and im very curious about what will come out of your research, so i would like to be updated on that.

1:09:21 (GF) Definatly

1:09:22 (JH) We will then, and we can send you the research when we are done and give a small hint of how the exam and stuff like that went.

1:09:33 (JW) Okay great, have a nice day.

1:09:37 (JH) (GF)

You too, thank you very much, bye bye.

A.3 Interview with Jacob Oestergaard, Vejle Municipality

Interview held on 24th of May through Skype.

Jesper Hansen = (JH) Gonzalo Fuentes = (GF) Jonas Oestergaard = (JO)

Nº	Theme	Interview Question	Sub Question	Data outcome
1	Introduction	Explaining our research at first		
2	Introduction	Can you introduce yourself and your role in Vejle Municipality?		Jacobs role in Vejle Municipality
3	Resilience, how new is it?	When did you hear about resilience for the first time?		How widespread is the concept
4	Resilience, concept	What is your understanding of the concept?		Resilience within urban planning
5	Resilience across sectors in the municipality	Has the planning department been included in the process of developing the Resilient Strategy?		Process of developing the Resilience Strategy
6	Changes after inclusion in 100RC	Can you recognize any change within planning practices?, after joining 100RC?	Did you reckon any challenges in this process?	Impact of 100RC
7	Resilience influence on other planning tools	Has the Resilience Strategy, or "resilience thinking" influenced other planning instruments? For instance the municipal plan or local plans?	And how is this integrating other strategies, f.ex. climate adaptation plan, or strategies?	Regulation, city production.
8	Value of resilience in planning	What do you recognise as the value of 'resilience' when doing local planning?		Value of resilience in planning
9	What does resilience look like?	From your perspective, has Urban Resilience a particular image, or recognisable physical expression?		What does resilience look like?
10	Sharing best practices and solutions	How Vejle has influence other cities or projects, for example with the project of FjordByen? and, How has Vejle been influenced by other cities when developing specific projects?	Have you take inspirations from other cities when Planning for the Resilient City?	Sharing of practice and Knowledge
11	Ny Rosborg	Can you present the 'Ny Rosborg' project, and how is it reflecting the ideas of Resilience?	How the Resilient district of NyRosborg (as a Resilience Lab) is different from other districts?	How is Ny Rosborg resilient, and different from other projects?
12	Image of ejle	What is the image of Resilient Vejle? How this concept is helping to promote the city? In what way?		Does 'resilience' help to promote Vejle?

Figure A.3. Interviewguide for interview with Jacob Oestergaard, Vejle Municipality

00:00 (JH) Perfect, first of all, thank you for your time and that you want to help us carry out this research. My name is Jesper, im from Denmark, from Aalborg.

00:13 (GF) Yes, and my name is (GF), and i am from Chile

00:17 (JO) Yes

00:18 (JH) So we are studying Urban planning and management on Aalborg University and during our final project, we have done a lot of project now, but this is our final. And first of all sorry for the inconvenience that we asked to change the interviewform a bit.

00:42 (JO) Its okay, actually it suited me quite well, yesterday was just terrible

00:52 JH Perfect, we also realised that we had to go up really early in the morning to be at Vejle at 9, so, and the trains were horrible, so we thought it made more sense doing it like this, and hopefully it will work out quite well.

01:05 (JO) Its okay, its very good you send the questions before, so i could prepare.

1:14 (JH) First of all, I would just quickly go through our research and what we are trying to understand, and three months, four months ago, we were starting on our research and had to find a topic that we found interesting, and we saw this 100 Resilient Cities Network where they are trying to make cities more prepared for tomorrow, for the challenges that are happening, climate change and such, and it really caught our interest. We wanted

to look more into how this actually works, and how they are going to do this, and if it actually matters in the field of urban planning. We picked the case of Vejle because its the only scandinavian city that is a part of the network. And what we basically want to do, we have divided the research into three different contexts, we have the global context of 100RC where we are trying to define the network, then we have the local context of Vejle, seeing how Vejle takes this concept into their own planning practices and such, how they are integrating and implementing the concept, and then we at last have the spatial context where we are trying to understand how resilience can be observed, like what resilience looks like, seeing how you, or other cities that are a part of the network is using resilience as a concept in their urban planning. So that is basically how are research is done, and we thought we could have some nice discussion, or not discussion, but some information from you on how you are trying to use resilience in the urban planning. And we have talked to Ulla Varneskov.

03:25 (JO) Yes, i could see that.

03:28 (JH) Yes, that is probably like a month ago where we visited her and we actually went to Ny Rosborg where you presumably are the local planner of?

03:39 (JO) Actually its not local planning we are doing at the moment, its a master plan, or we call it the development plan, because masterplan thinking is not suitable for this area.

03:53 (JH) Alright, but maybe you could just briefly introduce yourself and your role in Vejle municipality.

04:02 (JO) Yes, well my name is (JO) Østergaard, im in the municipality of Vejle, the planning department, i have been here for 3,5 years now, my role is primary strategic planning, you know in larger scale, plans that are about the municipality plan, in which way the municipality at the whole goes, and what different cities, what are their densities, how do we develop them but i also work with the more strategic plans, where we are trying different things, for an example in Ny Rosborg, bigger urban development project, and also urban spaces where we try new things, and also in local plans where we try to rethink the way we frame the handled water, or integrate. (video is interrupted), are you still there?

05:12 (JH) Yes, but the image is a bit laggy, but that is..

05:20 (JO) Your image is freezed now, so basically that is what i do, and my role in the Ny Rosborg project is that i am part of the project group where we are three persons that are kinda sharing project leadership.

05:39 (GF) Can you hear us ok, yeah its okay for you?

05:43 (JO) Yes, i can hear you but i cannot see you.

05:46 (GF) That is weird, but well we can continue then.

05:52 (JH) When did you hear about resilience for the first time?

05:58 (JO) Well, actually that was when Vejle was selected to be part of the 100RC, the network. As you know, it was back in 2013 they applied for it and i started in 2014, so

basically i have been, i was hired in the same time where we were picked for the network, and started the work with resilience.

06:28 (JH) So, can you see the image now?

06:35 (JO) Yes, now you are there.

06:37 (JH) Perfect, so what is your understanding of this concept of resilience?

06:45 (JO) Basically i think the resilience thinking and the resilience concept is about networking, its about learning from eachother, about understanding of the challenges, and make them into opportunities. So the former Mayor, Benjaming Barter, he said it quite good, if mayors ruled the world, Benjaming is dead now, but he was a part of the resilience strategy thinking, and he said if mayors rules the world, then it would be better, because he said, that states, the countries they are too large, they cannot handle the problems, its in the cities the real innovation and action takes place, so that is basically that thing. Our country can kinda make a strategic strategy about resilience, but its in the cities the real actions takes place. And about the concept, well we build a foundation, they supply us with platforms, where all cities supply with platforms which we can use, and by that, when we use the same platform, we can also compare the different threats but also opportunities and how we handle them, and then they ofcourse supply with the help of platform partners where we can call in experts within different areas, for an example flooding, or social resilience.

08:47 (JH) Sorry, but i'll think we have to get used to the image freezing, we cannot fix it unfortunatly.

08:59 (JO) Its alright, no problem

09:01 (JH) (Speaking to (GF)) Do you have anything for the platform, or should we wait with that?

09:04 (GF) No, we can wait.

09:06 (JH) Well, do you know if the planning department, you started a year after they joined

9:18 (JO) No i started a year after the application. I have been here for the whole process.

9:25 (JH) Alright, do you know then if the planning department has been included in the process of developing the Resilience Strategy?

9:35 (JO) Yes we have, both that we have put in these kind of, well we were asked to come with the ideas, the project, resilience projects, which could be included in the strategy. But we also actually took part in the workshop, where we defined our challenges, to look out where our strenghts, weaknesses, opportunities and threats, kinda SWOT, it was called the resilience wheel i think, so I was a part of that workshop, along with politicians, companies, social workers, a lot of different people. With a lot of different backgrounds. And yes, i have also been a part of the further development of the documentation, how to document and how to make this knowledge shareable, and not at least been a part of the thinking of how to measure resilience in planning, but we havent really come up with any usable

ideas for that, yet.

10:58 (JH) Interesting, speaking of that, can you recognise any changes within planning practices after you joined the 100RC?

11:13 (JO) As i said, i started basically as the same time as the resilience, as we came part of the network, so what it was like before, i dont really know, but i think that something is changing. Its especially about the, it has been more eligible to go across the sectors, and go out talking to the people. And that is basically what i think its the biggest value. Of course we have a a lot more focus on our strategic points, you know the climate, the social, the smart city. But also with the collaboration. So, there is a lot more focus on that and that has made it into a more eligble tool, to go out and talk about these things, talk about how to things differently. So, that is the process, i think that is what is noticeable.

12:24 (GF) When you talk about collaboration, can you maybe elaborate on this, explain with an example, what type of collaboration, collaboration between different departments?

12:43 (JO) For instance, now we just make kind of small examples, if we were talking about a new housing area, we collaborate with the Vejle Spildevand, that is waste water company, about how to think this into a more attractive way instead of handing everything in pipes we could perhaps use the surface to handle the water, to make a housing area more attractive. So that could be one part, another part could be the involving process, how we talk to neighbours, how we involve people in the planning process. Another thing is about how we can use new technology, how we can prepare new areas to the future of technology, collaboration with the weather forecast, collaboration with the bus companies, with other smart device suppliers. Testing new things.

14:07 (GF) And in that sense, how is the collaboration, sorry, with the private sector in the developers? Are they also part of the

14:21 (JO) Yes, especially in the Ny Rosborg project, we have both public and private people involved.

14:36 (JH) But, has the, well Ulla mentioned in her interview, that one of the benefits of resilience, and that Vejle has implemented this resilience, is that it in a way, exactly what you said, bringing people together, like it creates a platform in itself, which makes it more attractive or, easier to get different people from the departments, as you said the waste-water are included more in the planning, so i think that is similar to what Ulla said. About the resilience strategy, or what 100RC calls the resilience thinking, like the idea of resilience, do you know or can you recognise if it has influenced planning instruments that you have in you planning practive, for example in local plans or changes in municipal plan?

15:48 (JO) We have incorporated some texts and principles about resilience and how we work with it, but whether it has influenced the whole local planning practices and the municipal plan, no, not yet. It has been too new because the municipal plan takes 4 years to make, but it has inspired us to look at the whole municipal plan and planning strategies in a new way, so i think that it is going to happen in the next run, we go with even more resilience plan. People wants to change the way it looks and appears, so. And local plans,

i think it is on the constant development, so i don't think it will be revolutionalized but more like refined to this new thinking instead of it.. We are still a authority, and we have the laws, which we have to fulfill.

16:54 (JH) Yes, we know that, implementing these things takes time, and that you have practices, that you have been doing for many years, and it takes time to change those practices.

17:06 (JO) Yes, its an ongoing process, as well as the resilience thinking is.

17:13 (GF) And in relation to the, its, i cant remember the exact name, but its the plan for water management, it cant remember when its that, but is that plan integrated in this resilience strategy as well, is it talking with them, i mean are they two instruments that are talking together, or are they totally seperated, what is you perspective?

17:48 (JO) Well, the ermh, I dont know that much about the water plans, but i know that the way that they have been doing it is actually in collaboration because we have to seperate the sewers, so we have to seperate waste water with rain water, and stuff like that, and over these plans for doing that, and well prevent flooding, prevent what do you call that, pollution of the bay and stuff like that, that has been handled in a very new way where we actually in the planning department are project managers, for that, but that is not me though, so I see resilience as kind of a platform which, well its a platform for the other plans, strategies and such that we make, and that also includes the waste-water plants, and climate plans, and municipality plans and what its covering.

19:05 (JH) You said something earlier, or just before, that this resilience thinking is an ongoing process but you are trying to, or in the future plan to use that concept to refine the for an example the municipal plan, speaking of that, what do you see as being the value of the resilience thinking?

19:32 (JO) Well, that is actually something i started with, well i think its the value is definately the way you talk about problems in open spaces, its okay to talk about the problems, but when we talk about them, we are also, we have to do something about it in a smarter or a new way, and to do that, we have to work together with a lot of people, so as i said, it has been more eligible to go across the sectors and work together with the private and public companies, so that is the biggest value i think. You can also talk about value in the economy, but, that is, i would not be the right person to talk about that.

20:28 (GF) And yes, from your perspective, im trying to develop a bit more in this, can you see any difference in your work experience, for an example before this concept and after this concept, maybe not only in Vejle, but in general, like this new way of collaboration?

20:53 (JO) I think that is a change that has been going on for a couple of years, and i must say, that in my opinion, i think that is what i always thought is the right way to do it and to make planning, because you cannot do anything on your own, well you can, but you get a better solution and a better plan if you involve more people who knows more about special subjects, so i think that it is actually an ongoing, in these societies, i just think that Vejle has speeded up this process because we have talked so openly about our problems, and of course im kind of a new urban planner, so my philosophy is perhaps a

bit different for people that has been doing this planning for 20-30 years.

21:56 (GF) Sorry that i, that is a really interesting point, that you mention. Maybe you, have you noticed any conflicts because of that in the municipality, like people, old urban planners, maybe in a more, how can we call it, a more modernistic planning, sitting and drawing, have you seen any conflict?

22:24 (JO) Yes, but also as you said, it takes a long time to become a good planner, and when you have collected, or have some experience, it gets difficult to suddenly change the way you think of thinking, so yes, but you also have to be aware that, and that is not only the planning department, but that is basically all around the municipality, that we do have the authoritative role, that we have the law which we have to fulfill. So yes, actually we have to enforce the law and that is kinda two-sided, on one hand we need to make services, we have to make great plans, but we also have to, on the other side, we have the law and the authority role, and we have to enforce this, and that is basically the case for almost any department, but i think the planning department is more a development department than for instance the social health-care, so perhaps its easier for us to make experiments that it is for people that have a very strict schedule, very strict economy, and very precise role that they have to fulfill, and i think we are a little bit more free if you can say that.

24:09 (JH) The resilience strategy, do you use that in any way? Like for an example when doing local planning?

24:20 (JO) Yes, we always, we always refer in local planning to other plans that can influence. So yes.

24:34 (JH) So, ill suggests we try to move on, trying to get into the spatial context, which could be the Ny Rosborg case, but first of all, do you think that urban resilience has a particular image, or something recognizeable in the physical areas?

24:59 (JO) No. Absolutely not. It has nothing to do with physical appearance. Its more on the physocological.

25:12 (JH) About the planning procesesses?

25:14 (JO) Its about the way of thinking, and the process. Yes. Of course you can say that something is new and alternative, but the way we do this, is that we experience in very different manners, and you cannot say that this is how resilience looks. Its a way of thinking.

25:33 (JH) And this way of thinking, we have also talked with a guy from Rotterdam, which is also a part of the network, and he said that this resilience thinking reflects that you look more beyond, you are trying to make a more hollistic view and see like, for an example when you make a new plan, make a new area, that you try to put on some can you side wider lenses, where you are trying to recognise what can the future challenges be in this area, not only the next 10 years, but maybe 50 years, so this resilience thinking, what do you think of it?

26:24 (JO) Well, i agree, when we talk about Ny Rosborg project, we are not saying that this is for the next one, two, three or five years, we say that this will be a new urban, yes a

new part of the city, in about 25-50 years, and how will it look in that time, so definately.

26:53 (JH) This Ny Rosborg project, can you just briefly present what it is a kinda project, and maybe you can include how it reflects some of the ideas from resilience, because we have read about it and it says that Ny Rosborg 'a new resilient neighbourhood' in Vejle, how can we recognise this?

27:18 (JO) Well, first of all, we recycle a recycled area, it does not really become more resilient than that. And as we know it, its the only place in Denmark where you actually try to do this. We have a recycle area, deposit area, which is active, we are trying to make it into an urban development area, so basically, what we are trying to do, is to try and take a problem, which is not only local for Vejle, for the municipality of Vejle, but also for every larger city in the whole world actually. The problem, or the threat is, that every major city has experience with, well the global, what do you call that, global trends is that people are moving to the cities, so every city, larger city, are growing, that creates a demand for space, and those waste deposits and recycling areas are often located on the outside of the cities, but when cities expand we will have these huge areas of waste and recycled areas which are not suitable for living, so if we can change this view, change the way you handle these brown-areas, to actually be a new attractive urban development area, then we do not only create a new solution for the city of Vejle but actually also as an example for the whole world to follow that. So basically that is the idea, to recycle a recycled area, and the way we do it, is of course is with all the others, it its about collaboration, about handling the rainwater, polluted water, about social, how the social, kind of strategy for the city, its about smart city where new technologies can be implemented here, and then as i said before, its all about the process. Instead of sitting at our desk, drawing a new plan, we have flipped the process totally around, we are going around the area, we talk to the neighbours, to the citizens, to the developers, to the experts within nature, pollution, water handling, talking with the politicians, having workshops, having city-walks, bascially gathering information, involving people, and then we just, when we have this as a platform, we have this workshop with politicians, where they are presented for all the ideas from the citizens, from the professionals, from us, and they actually made a vision with that as background, instead of they doing it from a blank piece of paper, but then from the inputs, from the process. And we have not drawed a line yet, but it has been going on for 2,5 years now, its all about the process, getting wiser. Knewing the challenges, having meetings with envorinoment department, ministry of environment, and with of course the genbrug, the recycle center, to know exactly what the threats are, and know exactly what the oportunites are, to rethink this concept of how you close down this waste deposit area. So, basically as i've told, its mostly about the process.

31:44 (JH) We have read in a lot of literature, that one of the benefits of resilience is that you use a lot of time in the pocess, trying to recognise, what are the threats, possible oportunities, and i think, I can, from what you say, that you can recognise some of the same things, definately.

32:13 (JO) Its exactly the same thing!

32:17 (JH) Actually Rotterdam has something that they call the 'resilience scan', where they have made a model for, an example when they are going to develop a local plan, they

processes it through a resilience scan with different lenses where different people look at the plan in different ways and see, well are we prepared for when in 30 years when climate change mean, that we will have some flooding, so they were also having a resilience team, maybe they are a bit further ahead in the process, trying to implement it, but i think i can recognise some of the same ideas in both cities.

33:00 (JO) I think that Rotterdam is also a bit larger than Vejle, so they perhaps have more people to work with this. But that is also why that Vejle was selected in the first part, we are such a small city and municipality that we are very agile you can say, we can move and we can test, make experiences, we can implement things in a smaller scale to make examples for the rest of the world. Its actually pretty interesting about the scan, the resilience scan, i have not, we have talked about that we will keep on going this process, and we will make the development we will actually invite the people who are involved earlier, because we will have a like a parallel, we will have different suggestions for the master plan, how to develop the area, and then we will have the feedback from them and then choose one of the plans, so instead of just making a plan, we will continue this process of involvement and engagement of different interests.

34:26 (GF) In relation to all the actors that you have included in this two years of process, its, it has been mostly local actors, mean from the city, or have you interacted with other, we can call them global actors like consultancy firms from abroad, people from 100RC?

35:02 (JO) Yes, we have, i would say that our main focus has been the local, both authorities, but also experts and companies, but we have also made workshops with professionals where they came from, pension danmark hedder de (Translation: Pensions Denmark, they are named), and other professionals from both Copenhagen, Aarhus and Aalborg and we have used platform partners called Arcadis, to kind of facilitate this workshop. And i know that we have also had other platform partners coming to introduce their projects, their services, but we have not used them because, to be honest they, i dont think that, we could not use the service they could provide, but Arcadis where really good. Because they sent people with economic interests, they sent contractors, architects, people who were experts within the nature, and the water, put them together in different groups and then talked about this Rosborg project, all they way around, what did you see with the economic lenses, what about the nature, the water, stuff like that, so it was very good i think. We came up within half a day with three very different proposes for the plan, a lot of things to be aware of.

36:58 (JH) Interesting. So one of the, as we spoke about before, one of the core values is the expertise and knowledge that you have within a platform, that you have easy contact to experts and easy contact to some cities that have the same challenges as you have, but also that you could maybe provide with some information to them, for example from your experiences on Ny Rosborg.

37:27 (JO) Yes, we have a lot of people coming, a lot of walks with different municipalities, also from other countries, with politicians, city walks, so yes, we have actually already talked a lot about. It is also because Ny Rosborg is not about the building, its about the life you want to live there, its about what we see as the qualities, about testing and experimenting. A lot of people that have already been involved, we have now gone out in

the area, making these test areas, so we have a group going on during green collaboration where they have urban gardening, they have a place to walk the dog, they have a place for butterflies, and perhaps bees, and insects, we have an area where we test a better a better use for building materials, where we build a pavillion, together with school of architecture and with the genbrug (translation: recycling) where we have this waste problem and an old community house, building materials, we use that in a new way to build a new pavillion, we use it to test a new source of energy from energy partners, we are a part of the EUPG project where we test and actually make a physical installation at the place at the site where we can monitor how to extract heat from energy, we went to the ground and which to place buildings on, they have been kind of mixed with heat solutions, earth heat solutions, so that is like yes, they are like a pile, instead of just being a necessary need to build a building on, it becomes a energy source instead of. Both constructive but also future energy building. So, we, and we have a lot of different activities as well, we are doing a recreative climate landscape, we have to protect from flooding, and then we have a lot of earth soil from other building projects, and then we talk to the Gymnasiums on how we can make a landscape that both makes climate protection but also creates a good and active space for students.

40:36 (GF) And also all these experiments you have mentioned, are they located in the, are they physical experiments, or?

40:48 (JO) Yes, they are very physical (Short interruption). Sorry for that.

41:07 (GF) Dont worry.

41:08 (JH) No no, no problem.

41:09 (JO) They thought that they had booked the room, but i have. So, yes once again, the physical. I can send you some picture from the ground, they are from last week. They are physical places where we collaborate with either the locals, or with local neighbours or companies, or other departments, and schools, universites, stuff like that, so they have physical places, so yes this is a start up what we have done this spring, so there are not that much to see yet, but at that moment, the school of architecture build this information pavilion, and we have rejsegilde (Translation: topping-out ceremony), kind of a celebration when they put on the roof, and we have this green society where we have prepared the area and have just moduled the soil for their needs and planted the first bushes and trees and they will now take over from here, so that we did last week. And the climate protection project started actually this winter, but the soil, is putting, it has to settle before we can work with that, so we think that will take half a year to a year before we can module that.

42:52 (JH) Have you taken any inspirations from other cities that you have been connected to through the 100RC?

43:07 (JO) Yes, especially abot the contemporary activities we have seen that, but also climate protection and some of the elements, but also, to be honest, we have also learnt how not to do it, so if you build a wall for instance, yeah well you know who i am talking about, you are not doing anything for the connection between people and between, also the connections to the nature. So doing things in a different way, both we get good inspiration but also inspiration on how not to do it.

43:57 (JH) We are almost done, but i was thinking if you have some words on this, how the concept of resilience has helped promoting Vejle, because we hear a lot about resilience Vejle, has it been able to promote you in a good way?

44:21 (JO) Yes, i think it is. I read the question, and the only thing i can say is that Ulla and other people from the municipality are travelling a lot and talking about how we are doing things, and because, yes i think we have this welfare system and our problems is a bit small compared to some of the other cities, so we have another platform to develop from, so a lot of people are very interested, because we dont have to deal with these major issues so we can actually talk about these things that we make, because we can do them very agile, we have a lot of visitors, but also a lot of representation in New Orleans, Rotterdam, Glasgow places where they exchange experiences. We have had a lot of media-coverage also, both with The Guardian and other global medias, but also in the danish press. So, i think its positive, i have never heard a negative story about resilience. So just in that sense, it is a good promotion for the city.

46:17 (JH) Those experiences and best practices that Ulla learns about, for an example when she travels, how are you getting briefed on those, are she contacting you, or do you have meetings?

46:33 (JO) To be honest, before Ulla there was another Chief Resilience Officer and they were about to put it into systems, for how to exchange knowledge, but i think that, we have these meetings once in a while, but it could be, there is room for improvement.

47:02 (JH) So its not shared in a formal way, more?

47:07 (JO) Not, not in a formal way. Its more in a informal way where we meet things, and they say 'ooh, i have actually heard this, i have seen this', but its okay i think, as long as we work together, we collaborate across different departments, and i think its okay, but it could be, i think in other countries it might be a major issue on how to share information, for us it can only be the chiefs or leaders that get the information and it would never reach the employees.

47:51 (GF) Maybe its a small questions, in relation to that, then when you have a special need about some specific knowledge that you need or expertise that you need, have you talked with Ulla or what is the canal of communication, the channel of communication?

48:11 (JO) No, I just talk straight to the relevant employees, and that is also something that has been more opened up in the last couple of years, you do not have to contact your boss to contact anothers boss, so its flat structure, that is also a part of the experience and learning that is also part of how to collaborate.

48:38 (JH) But still, most internal, like when you talk about employees, you talk about other employees in the municipality?

48:46 (JO) Yes, in the municipality. Because we have to be very precise of what we can do as a municipality because there are all these rules about competition, you cant just elect a company, you have these, you have to, if we need a service you have to put it out in, different companies have to have the chance to come with a offer for a project, so we have some restrictions on how much we can involve different private companies.

49:23 (JH) (Asking (GF)) Do you have anything else?

49:26 (GF) No no, i think we covered most of all.

49:28 (JH) Yes i think we covered mostly, or we did cover all the qeustions, unless that you have anything to say? We would therefore like to say thank you for the interview. Unless you have something?

49:43 (JO) No, let me know whether you want to see some recent pictures of what is going on, i can send you.

49:55 (GF) Yes, very much, and also if you have some material we can have access about, for an example on Ny Rosborg, and its ofcourse not private, we will really appreciate that.

50:08 (JO) Yes

50:10 (JH) Yes, that would be really nice, so, perfect. Thank you and have a good day.

50:14 (JO) You too, see you, bye.

A.4 Interview with Dima Zogheib, ARUP

Interview held on 24th of May through Skype.

Jesper Hansen = (JH) Gonzalo Fuentes = (GF) Jonas Oestergaard = (JO)

Nº	Theme	Interview Question	Sub Question	Data outcome
1	Introduction	Explaining our research at first		
2	Introduction	Can you introduce yourself and your role in ARUP?		Dima role
3	ARUP as partner	Can you explain what is the role of Arup as partner within 100RC network?	How was the process of partnering up with 100RC?	Role of Arup within 100RC
4	Definition of Urban Resilience	From your perspective, what has been the contribution of ARUP when defining the concept of Urban Resilience within the scope of 100RC?	What are the values of Resilience?	Portraying Urban Resilience, Values
5	Resilience Framework	Can you briefly explain the resilience framework, and its application when assisting member cities of 100RC?	What are the 7 qualities?	Understanding of the framework
6	Value of Resilience Framework	How the Resilience Framework, as tool, helps cities to translate or apply resilience thinking into their local context?		Value of the framework, in translation / intermediary
7	Transferring Resilience Thinking	How is Arup assisting the process of implementing resilience thinking into the local context of cities within the network?		Process of translation, Arup as intermediary
8	Enrollment with others cities	How is the process of partnering with cities? What are the main actors involved in this process?		How ARUP is linked with member cities, through 100RC or? (interactions)
9	The organisation	Understanding that Arup is a world-wide consultancy firm, that covers different fields and specialities, how is the process of integrating or enrolling different professionals when assisting a city?	How Arup is organised when assisting a member city of 100RC?	How arup works as consultancy firm
10	Outcomes	What are the most recognisable outcomes when partnering with a specific city?	Can you identify some similarities among different processes and outcomes?	
11	Transferring of knowledge	After that the "consultancy" process has ended in a specific city, Can you recognise some practices that the local actors have learned or repeat?	Is resilience thinking transferred to the local actors?	
12	ARUP	What has Arup gained by being part of this Network?		

Figure A.4. Interviewguide for interview with Dima Zogheib, ARUP

00:00 (JH) Explanation of our research

02:59 (DZ) Im just trying to remember also how we managed to have this, how did you, did you contact ARUP, oh yes it was through Guilherme Johnson. So, im a landscape architect, my background, and i also study city design at london school of economics, and i have been working in ARUP for the last 10,5 years, and as part of my role in ARUP is, that I lead our work with 100 Resilient Cities and I have also learned about the development of 5 or 6 strategies. Mainly in the south and east mediteranian region. And i am also quite involved in other kind of urban resilient pieces of work that are being undertaken here in Arup.

04:24 (JH) Maybe you can explain what the role of Arup is as a partner in 100 Resilient Cities network?

04:34 (DZ) So ARUP, i dont know if you know, but ARUP developed the city resilience framework, which is, we call it the resilience city index, and we developed this for the rockefeller foundation, so we did it, i think in 2013, and it was based on three years of research and field work, so this city resilience framework has been adopted by 100RC organisation to use as a baseline for cities to develop their strategy. Basically our enrollment started because of our leadership and research around city resilience, so we already worked with rockefeller, and in 2013 when 100RC was formed they approached ARUP to be a strategy partner and to help them to assist 100RC in working with cities and

to develop their strategies, so our role was to support the cities to develop their strategies, both technical and strategic, and also about capacities, knowledge sharing, knowledge management, and also other things. So ARUP is one of, I don't know how many companies, but there are others that also work with 100RC, and you know that they have pledged that they would make cities around the world more resilient, and out of the 100, ARUP is working with 22 cities. 23 cities, globally, and one of them is Vejle, it was one of the first cities. And yes, we have already released 10 resilience strategies, and yes we have another 12 to go.

07:48 (GF) You mentioned, sorry this is not in the interview guide, but you touched upon this baseline that the strategy, or sorry the framework and index should bring to the city, since this is the first, like line or baseline, are there any other evaluations afterwards, to make a contrast of the initial baseline?

08:31 (DZ) So yes, so maybe I can tell you a little about how we use the framework to tell you how we develop strategies, and then I can tell you how cities potentially can measure impact. To develop the strategy we follow a standard process, that 100RC have set up, which is not that different from other processes you would use to make a normal city strategy, so you start with assessing the current resilience performance of the city, and for that, there are a number of tools and we use the framework, the blue circle, to understand where the strengths and weaknesses are in the city. After that, we help the city to focus more on 5 to 6 areas where they need to improve to become more resilient. So we do more research on what the challenges are, infrastructure, is that a challenge for the city, what is causing that, if for example water quality is a problem we also look into technical input why is water a challenge, so we do a lot of research to understand what the challenges are and afterwards we start understanding where the gaps in the research are. And from the gaps we come up with opportunities that can become actions that the city can take and put in their strategy to become more resilient. It takes a one year almost, and we, I mean in terms of cities measuring the impact of the action, we haven't done that yet, and I don't think it is something we will do, it is not mainstreamed yet, a lot of the cities have not implemented the actions, and we will measure the impact differently. Some can be observed, but we don't have a tool to measure the impact, we have the index tool which is an ARUP tool that helps cities assess the performance and they can do it before, and they can also do it a couple of years after the strategy is implemented.

12:12 (GF) Yes, we know these processes are quite new, so there is maybe not the many actions that are implemented.

12:33 (JH) Actually I have one question, because we looked into the resilience framework with the 12 goals, and maybe 52 actions and then there is the 7 qualities, that ARUP has defined as being characteristic of a resilient system, those 7 qualities or characteristics, are they like something you try to measure when doing this resilience, when applying the framework on different cities. Do you measure from these characteristics?

13:28 (DZ) So the qualities are very important, and our research have shown, that for systems to be resilient, a urban system, it has to have more than one quality, and ideally all of them, now as part of the process, yes, we are using the qualities to understand how the cities are the actions that they identify, but we also use the qualities to assess from the

beginning the resilience performance, if a city undertakes and decides to do this tool, it will ask the city a number of questions around the quality, so they are very important, they are probably more important than the goals and indicators.

14:55 (JH) About urban resilience, have you worked on the concept before you were partnered with 100RC

15:10 (DZ) No as i said, we were wokring with rockefeller foudnation before 100RC was formed, so 100RC is five years old, we have been working with rockefeller from 2010 or 2011, and rockefeller foundation they created 100RC and they fund 100RC, does that make sense. Does it make sense? Our link was before 100RC

15:56 (JH) We are just trying to understand in a way how new this concept is.

16:03 (DZ) Oh, its in that sense not a very new concept, because its a concept that was derived from ecology, but now we are applying the concept in urban environments, that is the thing. But the concept is not very new. Yes. But i would say that it has gained more momentum, through rockefeller foundation and through 100RC, if you lake at the SSD, they are also now integrating resilience as a part of, i think its called eleven.

17:00 (GF) We have also realised in research aswell. Something we have asked other interviewers is, what, from your perspective, are the values behind the concept of resilience? Like, its quite broad the definition that has been made from 100RC, we want to try to see, more than what cities can gain, but what is the concept bringing to the table, compared to sustainability?

18:02 (DZ) Yes, so sustainability and resilience are quite different, i think that in terms of what the concept of resilience is, looks at resilience more holistic, so it looks at systems from the concept of resilience. Because we work with city governments, it actually starts to break down silos. Before it was the water department, only concerning about the water, and housing only thinking about housing, and open spaces only concerning about you know open spaces, infrastructure and so on. Resilience is a cross-cutting concept to help cities break down the silos. Thinking about the impact, how can housing work with water, open spaces, with communities, its trying to be a cross-cutting theme, which is very different from the ways that cities operate today. obviously city finds it a challenge because they work in a siloes, so actually this concept of resilience, and the CRO, that overseas with all the departments, and if we were going to make systems more resilient, they should really work across departments,

20:11 (DZ) So you know, when we were developing some of the strategies, the mayor could say i really want to develop, i dont know, maybe a new transport plan for the city, but he also thinks in transport perspectives, but how can we link transport with social cohesion, how can we relate it to ageing population, high unemployment rates, like bringing all those into the perspective.

21:07 (GF) Well, yes we touched upon the resilience framework, maybe the next question?

21:16 (DZ) Sorry, but may be want to look at the city resilience index, there is a website, cityresilienceindex.org, and its basically almost an advances version of the framework and all our volumes are on the website, so if you are interested on how we developed the

framework, the outcomes of the research, its there.

21:54 (GF) Thank you, we havent looked into this other, sorry in the webpage, thank you.

22:14 (DZ) This is bascially all the research that created the framework and the index. This process of partnering with cities. You mentioned you have 23 cities, which you are counsultance for, how was this process of beeing partnered with these cities?

22:44 (DZ) So basically we, our client is 100RC, so we are employed by 100RC, and depending on ARUP's expertise, we basically, like a normal project, we bid on the project, for example a city in Japan, and we can bring in the expertise that the city needs, then 100RC would select us for example over somebody else. We, its like a normal bidding process. And whoever have the right experience, the relevant experience, the person that understands the city, will have an advantage over another consultancy. We have cities everywhere, London, Bristol, Belfast, Vejle, Rome, Milan, Athen, Aman, Luxury, Cape Town, Nairobi, Japan, and we have in Latin america, Buenos Aries, Santa Fe and Salvador, i think thats it, we are, our distribution is everywhere. We dont have any cities in north america.

24:59 (JH) This resilience framework, does it have any other usage or benefit, than only, i dont mean only, but what it does is that it identifies the possible threats and challenges, and comapres the overall resilience with a baseline?

25:26 (DZ) Yes, so we have used the framework in different ways, around the strategy development, you can use the framework to identify strenghts and weaknesses, where the city is taking actions the most, use the framework to understake stakeholder engagement meetings, to map stakeholders in the city, you can use the framework to actually map the budgets, to understand where the city is using most of their budgets, we have done that in some cities, you can use the framework to ases the waste system, you can also use the framework to help you come up with opportunities, but also, we used it in London 2 years ago to bring the 7 seven qualites around the table and make them in gray on common defintion on resilience, so we bring in people from different backgrounds. The framework is a good way to get alignment, and info from stakeholders on certain aspects of resilience. And obviusly you can use it the ases and understand how the city is performing. We have also used it for projects, to ases the resilience of projects and their masterplan.

27:32 (JH) What about the actions, because in the strategy we have read in Vejle, they have come up with different actions, do you have any role in these actions, to develop them?

27:55 (DZ) It depends. At the moment we dont, but the idea is when the city wants to implement some actions, they can and if they need a counsultance, then we can help them ofcourse, but at this point we dont, and this is because that many cities have challenges around budgets, so some of the cities are doing strategies, and some have not implemented the steps from 100RC yet. But the idea is yes, cities have to basically export these actions further and use consultant's to support and implement these actions.

29:05 (GF) I have question, you mentioned that when asissting the city, you helped to recognise the challenges, and the big research on defining the gaps, turning them into

opportunities and actions, and it sounds really, really top-down, is it like that, or how is the work with the locals?

29:45 (DZ) No no, well its not, i mean its very simplified as i explained before, but basically the work is lead by the city, and the first thing the city has to do is appoint a CRO, and to create a team around him/her, and the second thing is that the city have to engage with many stakeholders throughout the entire process of developing the strategy to identify all the challenges are, so you really start with the people, the second thing is, what are the current actions that cities are taking, so checking what the cities are doing and assess how these actions are contributing the resilience of their city, so you really want to understand the baseline. And in parallel to that, you have all the stakeholder engagement, and there is a lot engagement with other city officials, the mayors, a lot of the cities have for example public engagement with people, they put things on their website to get the view of the public on what they percieve as the issues, and when cities come up with opporunities, they are not generated, some are generated through tehcnical studies and support, but all the opportunities are taken to consoultation, so people and the stakeholders are actually wokring with them before they become actions, and in the end, the mayor has to sign them. So in terms of the process there is one year of engagement with actors.

32:20 (JH) Yes, okay, just one moment, and this assistance process, for example you mentioned that you have been working with Vejle before, the city of Vejle

32:44 (DZ) Yes yes, we supported the city of Vejle three years ago, erhm, and we helped them with the strategy, mainly to develop the second part of the strategy, so we were linked with the CRO and our team in Copenhagen. The CRO was at the time called Jonas Kroustrup, Krou?

33:20 (JH) I think its pronounced Kroustup?

33:23 (DZ) Yes, danish name.

33:35 (JH) But, speaking of that, is it then that 1 persons have 1 city, or how is that? Like for example that one of your responsible for helping Vejle, and then you are responsible for another city?

34:05 (DZ) Oh yes, our local offices will work with the cities and there will be other cities like myself, who whould basically oversee work and provide guidance if needed. For example in Milan, we have a local office, they are supporting Milan, the greek cities were supported by me from London.

34:53 (GF) Yes, well, its in relation to the outcomes, from this process, and i dont know if you have the questions, what is the recogniseable outcome when partnering with cities, and if you can recognise some similarities from this outcome, we understand that the outcome can be the strategy, but are their other outcomes?

35:30 (DZ) Do you mean outcome of the strategy?

35:34 (GF) No no, i mean when partnering with the cities?

35:41 (DZ) The outcome for the city?

35:47 (GF) For the process, and yes, for the city aswell, yes yes. What the process of partnering with cities produce?

35:59 (DZ) I think, that when partnering with cities creates the, yes like partnership, around the city, the city is leading the strategy development, and our role is to support the city and guide them as best as we can. It is also a good possibility for the city, to be exposed to international consultancy, get advise from experts, from like ARUP that have been working with urban resilience throughout the years. The cities can speak for themselves, and for example, outcomes of the strategy because everything is tangible, what is the word, i cant find the word, so yes, basically.

37:20 (GF) Its alright, we get the idea. Perfect. Yes.

37:30 (JH) About the framework, and there is ofcourse an outcome of using that, which i assume is the resilience strategy.

37:40 (DZ) Yes

37:42 (JH) So you help the city to make the strategy in that sense, that you apply the framework, so they can, like identify these potentail threats and identify where they can improve. Then we talked about the actions, where you are not that involved?

38:09 (DZ) So 100RC, have, i dont know if you have interviewed some people from 100RC?

38:19 (JH) No, not yet, we have a interview with Konstantina at 3.

38:22 (DZ) Ok, basically, they have maybe she can share the process, there is this process and that is one year, and one part is assessment, one part is gathering data, reaching out to the development of the strategy. We help the city throughout, when the city releases it, our involvement stops. So when there is a document on the webpage, our role stops for now.

39:03 (JH) Ok, and then ofcourse they have the connection to you, so it would be easy for them to contact you and make the actions realised and make the city more resilient?

39:16 (DZ) Yes, exactly, if the city wants, they can use us again, if they have the resources.

39:30 (JH) Have you gained anything, does ARUP gain new knowledge in this sense?

39:38 (DZ) Yes, that is a really good questions. For us it is really interesting to work with the cities and the challenges they are facing, so for us it is also about learning what challenges cities are facing. For example floods is a big one for cities, ageing population, and certain geographies, so for us we are learning about the challenges that cities are facing. We also learn about new innovations that people come up with the solve these issues we identify, and you will find, that there is a lot of actions, that are grass-root projects, so they are lead by the community, they are projects that does not cost a lot of money, but they are resilient and will have a great impact on the city.

41:05 (JH) Something, i forgot to ask about before, but about the term resilience, you talked about that the term can help silos, can you identify some other benefits, are there any other values of this term, we know about sustainability, but like what is the extra value that resilience has, is it more applicable, more relevant in these times?

41:50 (DZ) Other benefits, hmm, i mean i think its making cities more aware, cities opening up about their challenges, and specifically challenges they have not considered, and issues previously. And its about looking forward, all about looking forward, thinking about the unexpected events, if its a shock for example, like a sudden event, ageing infrastrucure, high unemployment, its also makes you forward looking. Its also helping cities access funding, that they have not necessarily made access to in the past.

43:09 (GF) Funding you mean through the network? Through 100RC or?

43:15 (DZ) Funding through international organisations, for example, like the European investment bank, European, EBRD bank. Yes.

43:30 (JH) About the concept you talked about before, that was actually what i was hoping for that you would say, because that is what also we found out in literature, that resilience acknowledges that the world is changing, and that there are potential conflicts that the city is not aware of. Its not about looking 5-10 years ahead, but 50-100 yeards ahead.

44:05 (DZ) Perfect, yes. And i think that people have not ever thought about resilience before, but now its shaping the way they design their cities, for the future.

44:20 (JH) So in a way that they design their cities more resilient, like, that it has considered what might the challenge be in the future?

44:39 (DZ) Yes, events, yes yes. But also thinking if im designing a park for example, how can i adress unemployment, or social cohesion what are the challenges. You know parks, long time ago didnt really think about that.

45:08 (GF) In relation to that way of thinking, or resilience thinking, maybe its out of your knowledge, but have you noticed any practices that have been transferred from your assistance into the local actors, for example into the local planning department, some processes?

45:40 (DZ) Yes, i mean, in Athens for example, the portfolio about climate change and resilience have now merged under the department of resilience (proably meant climate adaptation), so the city have changed, or it will be changed, their policy to address resilience aswell, before they only talked about climate change, but now its called climate adaptation and resilience i think.

46:25 (GF) That is a concrete change, definately.

46:38 (JH) Actually i think we have covered all the questions we have send beforehand, so unless you can anything else, we would like to say thank you very much, it has been really helpful.

46:57 (DZ) Thank you very much, and if you want to share you research, at the end with us, we would be more than happy to read it.

47:07 (JH) Yes, nice, we will send you.

47:11 (GF) Thank you very much

47:13 (DZ) Thank you

47:17 (JH) Have a good day, bye

47:20 (DZ) You too, bye!

A.5 Interview with Konstantina Karydi, 100RC

Interview held on 24th of May through Skype.

Jesper Hansen = (JH) Gonzalo Fuentes = (GF) Konstantina Karydi = (KK)

Nº	Theme	Interview Question	Sub Question	Data outcome
1	Introduction	Explaining our research		
2	Introduction	Can you introduce yourself - and your role within the 100 Resilient Cities organisation?		Konstantina's role within 100RC
3	The origins of the program	What are the roots of the program? Why launching this program?	Why 100 cities? How did you pick the 100 cities? What was the criteria?	What is the vision?
4	The scope/vision	What is the vision of 100RC?	Is there an end-goal?	What is the vision + end-goal?
5	Values, for all actors?	What are the benefits of being a member of 100RC and what is the benefit for Rockefeller Foundation?		Value for all actors?
6	Why 'resilience'?	Why using the term 'resilience'? Why is it more applicable than other terms, such as sustainability?		Why Resilience, why is it applicable
7	Actors	Can you recognise the main actors behind this network?	100RC, ARUP, CRO, others? How are they connected/intertwined?	Mapping of actors
8	Interaction between actors	How are 'you' installing/transferring the resilience thinking from the global perspective of 100RC and into the local context?	How is the process of enrollment of new actors into the network?	Interaction/dialogue between actors?
9	Challenges of 100 different contexts?	What are the challenges of working with 100 different realities/context?	Can you recognize one common discourse behind the network? Expressed by whom? or, Do different localities have different discourse about the network?	Challenge of working globally - many different contexts? Process of Mobilisation
10	Mechanism/tools to install resilience	What are the mechanisms/tools that the program use to overcome those challenges and succeed in installing resilience into local contexts?	For an example implementing a common language, using an applicable framework?	Mechanism/tools to install resilience in different contexts
11	Concrete actions / projects	What does 'resilience thinking' look like in physical urban form?		
12	Knowledge-sharing	How are best-practices shared among member cities?		Sharing of knowledge, how the platform works as a value
13		Whats next? More member-cities?		What's next for 100RC?

Figure A.5. Interviewguide for interview with Konstantina Karydi, 100RC

02:48 (JH) You could introduce your self and your role within the 100RC network

02:56 (KK) All right, if you don't mind, since you are frozen I am going to put the camera off as well, and just live it with audio. OK, You can hear me, yes. So as I said, [...] Are you recording the call?

03:23 (GF) Yes, if its ok for you?

03:25 (KK) Yes, it is fine. As you know, I am Konstantina Karydi, I am Greek and I have been working with 100RC for three years, about three years now, as Associate Director for Europe Middle East. That means that my role is fundamentally [...] like a represent 100RC and I work directly with a number of our cities, to install, as you said, a kind of implement the program. And [...] maintain the relation and the collaborations between the global level and the city. So that is my role. And I helped build the office of 100RC in London. And work basically with the entire organization, or deploy our resources and kind of direct them in to the right way for each of those cities that I am directly or indirectly involved with.

04:46 (GF) We don't [...] we are just giving you the space to talk, to not interrupt the recording, but we are here.

04:55 (KK) Ok, so I am also working directly with Vejle, which it is a good opportunity as you know. To speak about the specific city. If you want you ask me before about resilience, so I don't I you have seen the definition for resilience that 100RC is using, but you can find it online, but we define it basically as the "the capacity", so we say that urban resilience is actual [...] is a quality fundamentally. Is the capacity of individuals, communities and institutions, and businesses and systems within a city, as we say to survive, adapt and grow despite what are the chronic stresses and acute shocks they experience. So if we put this in different words, you know. I actually give a presentation yesterday on the city of Thessaloniki and I put a slide with the definition, and then I said: ok, but what is urban resilience?

06:05 [Laught] (KK) And as I said before, this is the idea [...] is that we see the city as a system that has a specific threats that undermined it as a whole, because it vulnerabilities, and some of them are natural, and some of them are man made. These are the shock and these can be lets say an earth quake, or a volcano eruption, or enhance rain fall, or tornados, or lets say, I don't know, a riot, it is also part of the definition of shocks. But also stresses which it can be macro-economic stresses, long-term unemployment, health. So the combination of these, basically they weaken the fabric of the city. And what has changed, is basically we project in the future is that the phenomena are intensifying in, [...] lets say the natural phenomena intensify in density, in frequency and strength. And often the pace of development of cities is also intensify inequalities, globalization is a positive event but also a challenge and growth of cities, basically enhance those stresses. And there is a difference on how that manifest around the world. So through urban resilience is the idea that we [...] the cities require newly found capacity to address this challenges within resource strength environments within improved way, and they increase their opportunity to deal with phenomena that they were not equipped to deal before. And in the processes they make people life better. Because, at least for our theory of chains, we are trying to really directly support people lives, through the believe that this come through the sustain change of working with local governments. So if you make the local government better, that means that people lives would be improved directly. And [...] I start seen this [...] in extent. And also cities will become more efficient hopefully by learning kind of design under this lens. So in this way, urban resilience is fundamentally the capacity of cities to learn to deal with undressed changes, to understand what is long-term planing and adopt them and looking projections of process and understand the language of sort of stresses and really try to oriented around problem solving rather than problem managing. So cities are mainly problem managing now, but increasingly they are putting, they have been put in the [position] of policy making and they have been asked, you know, to problem-solved, to use their money better to problem solve. And then internally it is about to working together to brake silos and really orient around programs and projects in an organized way. So resilience is both an end goal and a methodology.

09:57 (JH) You already touch upon it, but , in the first place, why lunching this program?

10:10 (KK) Well, to be fair, because we are talking about The Rockefeller Foundation. The Rockefeller Foundation was investing in resilience over a few years now. And obviously urban resilience as a consequence is not entirely new. We didn't started, we mainstreamed it much more. So Rockefeller was really part of the conversation and the previous [...]

basically [...] the president of The Rockefeller Foundation, Judith Rodin, for her this idea of [stamps] chains is very important, so she set the (...) priority, and because in 2013 was 100 years of the foundation of The Rockefeller Foundation, then vision this program of 100 cities [deploying] urban resilience. With initially a 100 Millions dollars investments. Which is not a lot, if you think about 100 cities, and it was not 1 Million dollar per city.

11:15 (GF) But it sounds nice, like in a [...] 100 years, 100 cities, 100 millions.

11:22 (KK) Exactly, so you know, that was part of the motivation to really [...] and it became the biggest problem for the Rockefeller Foundation ever. Actually, and it make sense, because it is massive, and is deployed globally. It really serves this agenda I mention before, so it has like a [multi - positive] idea. It was a continuation though of another programs, the Rockefeller was deploying at the time, so. It didn't come out of the blue. A 100RC definitely became an agenda setter, I would say. From 2015 it was deploying until now. We help [...] one of the things we actually did, in my opinion, is that we helped changed the definition of urban resilience, from the focus [...] Europe has had a traditional focus when we say resilience to, crisis management basically, and risk management, risk reduction management. That is the traditional concept, even at the European union level, and 100RC has pushed for a more hollistic approach that cities especially resonated this. And now we have seen it being much more accepted, adopted also among other global institutions and [...]

12:51 (JH) Alright, actully about the term resilience, Why using that in the first place? like what do you see as being the value of resilience? 13:04 (KK) Well as I said before, this is not [...] we didn't create this concept. And also we have to distinguish between resilience and urban resilience. Because resilience is a broader [...] It is exist in psychology, as a concept in environmental studies. As I said before, risk reduction management. But urban resilience, I think that, it really became this need to help the cities look ahead, rather than behind, and rather that the now. So, if you think of the words in english, sustain, sustainability. My theory that here in Europe we took the term [...] that would it make it much bigger, than what the words imply in english. Because, sustainability is about sustain what we got, protecting what we got, protecting the environment. But this whole idea of resilience and especially urban resilience accepts the idea of constant change, and this is the focus. That is the [elevation], is about learning to adapt, to became better within the state of [flux]. And wether that state of [flux] is constant, that is the stress, or wether it can be acute, when there is a crisis, and crisis [have interrupt managing]. So I see this [...] they say, actually all they say that they are resilience already, and yes they are, but also if you look back in history, because cities, you know, they were burn down, and then they were built again. But the crisis needs, if we can avoid the city being burn down to the ground, then we should do something about it. And the thing is, urban resilience is about learning how to become better into avoid. So there is a miss conception that resilience is about accepting that things are going, and we have to just learn to survive, that is not at all. But is about accepting the thing that we are experience acute phenomena, that our cities are growing fast, wether do we want that? Maybe not, then we should do something about that to. And maybe that would be, you know [...] as theory, as the city works with urban resilience which decide [legitimatly] that they don't want to grow any more, or they want to grow in a different way, because they have [x or y] challenges.

And that is at the heart of urban resilience strategy building and implementing. It is say, we have limited resources, but we have a lot of knowledge across the borders, across the world and within our cities. We have global targets that we need to, you know, hit. We have, you know, we have to protect our cities from flooding, that because climate change is unfortunately happening it means that our cities are flooding faster than we accounted before, or in intensity, and that creates challenges. And you know, we also have to invest in our social net, so if we need to do that together is the best way of doing it. And what are the projections for 10 years down the line. You know, these are elements, and that is why, this is what resilience as a new thing, I think that the concept of urban resilience brings: this combination of people, of resources, that forward looking [at front]. And that is really important, in this state of flux that we are experiencing

16:39 (JH) So, one of the benefits is definitely that resilience just within its term acknowledges that cities are vulnerable, and they would, in a way, are in constant changing, and have to adapt to this changing.

16:56 (KK) Yes

16:59 (JH) So, about the membership in 100RC. If you have the questions, I am at number 5. [...] I am asking what is the benefits of being a member of 100RC? and what is the benefits for the Rockefeller Foundation?

17:23 (KK) So, if I start for the second. The Rockefeller Foundation has a mission. As I said, it has a theory of chains. Helping people [...] across the world. So the benefits [...] Rockefeller is a foundation, so that is the benefits, you know, it is part of the agenda, it is a global agenda setter. There is no other benefits. Which it is quite funny, but that it is. On the other hand, 100RC is apart of the Rockefeller Foundation, so we are not the Rockefeller Foundation. We are also an independent, fundamentally, entity founded by the Rockefeller foundation at the moment. But there is no, kind of other than serving the goals, as I said, you know, by the Rockefeller Foundation theory of chains. And 100RC is doing in it a very good way, because if you think about the amount of money that globally is actually not that much. So with a small, let's call it investment which comes from the foundation now, foundation money, there is quite a lot [fund], [yelping], a lot of benefits, if you want, for serving that agenda. Then, the member cities it self, I think the cities have told you more, and I am interested to hear how they see. My self, I think that, it has been a great opportunity for cities to be agenda setters together with us, especially with cities like Vejle, and like second [tiers cities] it has been necessarily have other international collaborations because we chose a range of cities, ranging from huge ones to small ones, because we want to create a common language on resilience, because we accept that there are different circumstances across the world. So at the moment, the members of 100RC, because the program started with the idea of working with 100 cities, in order to develop together a resilience agenda, and especially four years ago things were less mature, than they are now. So we see this as a partnership, and we select those cities among more than a 1000 cities that applied over three rounds. So at the moment we are exploring different options basically on how, [...] when cities they want to be part of program in the network, and that means we need to help them diversifying the founding resources, not finding resources so we are able actually to give them that support, the founding that they required. And we have made a choice, kind of going deeper for now, rather than expand,

which means we want to ensure that there is real success and impact in those cities. So that is a continues effort. But the members itself [fits] the works, how it works. There was a global competition, and they were selected.

20:35 (GF) In relation to the network, and specially in relation to the definition of different actors. Can you recognize what are the main actors behind this network? Maybe it is a bit obvious, but it is interesting to have your point.

20:53 (KK) What do you mean exactly when you think, when you say to recognize the actors?

20:59 (GF) it is, for example, in a general way, well the program or the organization 100RC it can be one actor, an then the CRO in each city it is another key actor in this chain. So at that level, what are the main actors without a name, it is just the position or the role.

21:26 (KK) So, already from the conception, so when we start working with the cities, so one city has apply what it makes sense. [...] entirely from them, because we [...] the phase 1, let say, of the engagement it is about helping the cities understand what the program is about and how they need to set these actors. And we have identify that the right people talked to, it is really important to have the Mayor and very Senior support of the city leaders. Because this is not just a program that one department is doing, but it is really about retting up a whole new position,a whole new concept and investing in this partnership. So we are actually from the very beginning asking the cities to invest themselves. Because at the key of our theory is to create capacity from within. So we don't do things for them, we give them a framework, we give them some funding, we give them access to the network, but it is really hard for them to understand that. Often cities were applying for one Million, just to can build resilience, in a way. So the Mayor and the Senior city leaders are very important. Often we ask for a Senior point of contact and then we help identify, and set up the right [strategic actors] for each city, on kind of employing a CRO, or appointing a CRO that it depends the city, but again this choice is working from within. So, Mayors, advisors, general managers are key actors to start with. Obviously the CRO is a significant very key player, there is no doubt about that, they hold the key, and we train them as individuals as well. We give them a lot of support, because they involved the chains in the city and their team, so they are really key important actors. But also this changes from [transit development], the strategy implementation is a cycle so the role of the CRO may differ for building that agenda, and implementing, and reviewing it. So the CRO is internal external person, even when they are within the administration they help open up the city. But often in the implementation you will have a key actor, you know, the city architect, or program manager for a specific program. That always, from our point of view is, from within the CRO because we are constantly helping the city to understand why is important to have a senior person being the CRO, or director of resilience, or what ever you name it [...] Some cities they , especially in Europe they also have a deputy mayor for resilience now, and it can be [...] sometimes is combined, my opinion is that the best is having development and resilience together so in a way this is what they got in Vejle because they have pointed the general manager as Executive CRO to solve cases they [...] importance of kind of implementing in such a way. And they also have the CRO who is the responsible of kind of executing it as well. We are quite important actors ourselves in a way, specially the people who work like me directly

with the city. Depending though how the city advance is like, we know, we work ourselves out, in a way, if we enhance the capacity of the city that it always [...] but we often kind of help in strategic moments, at the beginning we work very close obviously. I have deploy [...] you know, a 100RC is very important in terms of the existence for the cities to continue their work as an external point of reference. And the network and our cities can also be important, they can prove quite important. And then I am complicating it, because I said that there is a constellation of actors, basically.

25:44 (GF) And how can you explain that constellation, or that network, when you said network, what is that?

25:55 (KK) Well, when ai said network I refer to the other cities as well. That is a very important part of the partnership and the collaboration: this learning, and sharing, kind of co-developing. And then you know, there is a global community of partners, that they are also part of the offering. They offer their services ,where these are universities, or private sector companies, or social sector, NGOs, they come to the cities and they help solve the city challenges. But you ask me how to explain why, well it is because this framework is a method, so it yields results, it yields projects, and we help them build those projects. So each project have different counterpart, it is not a linear thing, especially in todays world. I think we are involved in a kind of network governance process, rather than linear hierarchical.

27:12 (JH) Perfect, this idea of urban resilience, that you said that you have mainstreamed in a way, How are you aiming, or trying, or attempting to install that idea into the local context of for example a city like Vejle, but in general all the member cities?

27:30 (KK) So as I said before, is like a partnership, so it is a collaborative process, and we are not doing it, the cities are doing it, which is interesting. We are helping them to do it. So, the level of success depends, Vejle they really kind of taken it to another level which is amazing. How we help, as I said before, we have a method, so we have a theory of collaboration, in Phase 1 we help them to understand wha resilience is about, what the problem entails. We help them to build the actual position within the city, so that is part of the big [...] one of the strongest elements that the city needs to have a CRO and a team to start with, and then also to continue to be a member of the global network and program. Otherwise they lose the range to be members. So that is really important in a way that it means that you have affected in some kind of institutional change. Wether is permanent or not. [To start with] but it is. And then we have a whole set of guidelines, and strategy guidelines manual ,so we help them with this class strategy development process, and with different elements, and different approaches, there is specific mile stones during this process that it really helps in it self to start mainstreaming resilience in the city. And there is a lot of back and forward between people like me and the city and kind of identifying the issues, cross checking. We create the global team for each city where they give them advise. We have communication, again we have the network, we give them specific guidelines [...] so they know what to do and how to do it on the ground. We help them to organize big events to present their strategy. We help them have an action plan, priorities the implementation mechanisms, and because there is a growing global conversation, that is also help. And then in different ways each city choses to go dipper, in like Vejle for the is about democratize the concept, that is why they have the resilience

event now, which is about the citizens fundamentally, and they really believe in some strong part of what resilience is about, this co-ownership. So in broad terms, these are some of the wings, basically. We are not operating in vacuum anyway.

30:22 (GF) It is interesting, talking about this network, about 100 different cities, it is a big challenge to work with 100 different contexts, and then, from yours perspective, What are those challenge? or what are the main challenges that you can recognize when working with?

30:44 (KK) So on e big [...] is the fact that we are trying to build a common language as I said before. So how do you build a common language when you deal with different contexts. For us the full bag is the actual strategy guidance manual and maintain a balance between a certain elements that we are asking the city to do in the similar language, the stresses language, and the methodology, and the local [...] and adapting to the local reality and context. So we, to be honest, we push the cities by the [...] we don't accept everything, we push them to like open up. We push them to do specific processes, and that is part of the partnership and they cannot bit part of the work, to be honest. And then, interestingly, you know, I find and trying [in different parts to] persuasive about the fact that cities think they have unique problems, and common good stuff. But actually I think that is the opposite, I find that each city it is amazingly unique in their positive characteristics, but they have a lot of similarities when it comes to the problems. So when you realize that, you can, at least externally work with them, or having in mind to work with them basically, and kind of helping them to solve them. I don't necessarily say that to the cities because they still think that they are unique. They always say how unique they are in relation to the other, and they are unique in terms to the language, to the people, their characteristics. they are and that is really important to maintain the balance. But they are very similar to the core the challenges, you know, flooding. If you see the 100RC web site you will see there is [...] that is part of the common language. So, then of course there is also the language question, the culture question, we are trying to deal with that by you know [...] we have different offices in different part of the world, with different individual working with different cities. Really like me, I am Greek and I work with the Greek cities, and I work also with the Mediterranean quite a lot. I also work with Vejle, Glasgow, and I work with another cities, But we try somehow to the extent that we can you know, American works with Americans, we have Latin-Americans working with Latin-Americans, kind of respecting this diversity. When you work global we try to coordinate between our offices in order to be able to share the better examples and put the cities together. So they can start accepting what they do, they can share best practices and initiatives for example. So you know, that is a little bit a part of the challenges. It requires a lot of dedication to be honest, and it is a challenges to work with the cities when you don't understand the language as well, and help them. But once again, because we have created this common methodology that also helps. The role of the CRO is crucial, because is also the person that really works closer with us, and then they go and they do a lot of the work themselves basically in the city.

34:05 (GF) So basically with this building the common language, and with a common methodology you are accepting, and integrating the diversity of each city. so it is, at some point

34:19 (KK) Yes, yes. It is a common adaptable methodology, though.

34:30.93 (GF) When you say the methodology, is this resilience framework.

34:34 (KK) The strategy is a methodology, but developing the strategy, and the the part of implementing it. And we have a number of tools: like the resilience theory. And yeah that it is. And we are also hopping to kind of create new solutionsfor cities as well, that is part of our theories of chains, or create the [...] enabled environment for them to identify their proper solutions.

35:22 (JH) Well, about the framework, and about the resilience strategy. A we understood you help the city developing the strategy with the framework, which in a way works as this holistic lenses. The objective is to understand the wider picture of the city, identify possible future challenges and where the city should try to become better in terms of the capacity to survive, adapt and grow.

35:59 (KK) Yes

36:00 (JH) What about then the actions to make this happen, have you had any role on that?

36:06 (KK) A lot, in the sense that, that is part of the strategy. So you know, one part of the strategy is the Preliminary Resilience Assessment (PRA), so we help them to describe the assessment scan of they are, and what they are doing already in relation to the challenges , what is the perception of the citizens. What are the risk they are facing. And then that helps to build what we call the discovery areas, which is fundamentally a set of cross card questions which are either geographically located, or social. You know. My favorite ones are things that they are they cover a number of elements, because that is at the heart of resilience thinking. For example, one discovery area could be what is the relation of the city with water. That was the case of Thessaloniki, you know. And then in the second phase of the strategy development process, they focus on these discovery areas, they ideally give a picture of the city, so if you read the PRA, you already understand what the cities [...] what are their challenges , what they are trying to discover. And then we push them to being innovative and identify solutions and kind of building those strategies that you have seen. And which at the end they end up being a combination of a recap of existing things that cities are doing, and improvement of things, and completely new actions, it really depends. and then we continue working with them to help them to implement. And it is more a supportive role, once again, our role. But it also they choose some other priorities and we become more involve in some of those projects, as the case of Vejle and the Fjord Byen development that they are doing it. So you know, we are elevating this kind of potential global examples, and why this is important and what is the difference. So that is kind of [...] there is a range in the level of our involvement, which also depends how much the city wants to absorb or what kind of change their work with us, basically.

38:14 (JH) So, one of the big benefits of being a partner of the 100RC network is the founding and the access to this platform where you can share best practices among the cities and partners,

38:34 (KK) Yeah, it may be the founding is not one of the big things, even though the cities think it maybe. It is a good thing, but we don't give them much more money directly. We give them much more in the end, if they are able to absorb rather than the direct amount of money. Because the direct amount of money, because the direct amount of money we give them is the equivalent of one senior salary for two years. This is what we give them directly, but everything else, is where the big value is, together with this. So, you know people, my time, people like that, like having global people working locally with the cities is already a very big benefit, and all the access to the methodology, and the tools that you mention, the platform, the networking, the collaboration with another cities. And then there is a [range] of kind of additional support that basically the cities have. And just give me one second.

40:04 (KK) Ok, sorry, I was saying that [...] the more they are active and better in the way they invest in them selves, the more they are able to absorb from us. It is a given taken relation. Often cities give a lot, give a lot of their knowledge, and they share, and they become better, and they become leaders. And this is what they gain as well. And that was [...] It is always a creative process in a way, of what the offer it means. Not all the cities they benefit in the same. Basically is not one approach at all. I would say rather being the opposite.

40:53 (GF) In these difference between what they gain and so on. Can you recognize one common discourse behind this network, of the cities ad so one? and if it is one big discourse expressed by whom, or there are some differences

41:23 (KK) On social challenges, is one common thing I see. On what is called [...] resilience, so cities they are asking us for support and kind of becoming better in their stresses. So finally [...] while they apply on the base of a crisis and often they change, they understand that they need to [...] they wish to work more in kind of dealing with their longer call [human-challenges] and this is what they find very interesting and this is what they need support to. And then there is a challenge on how do you build that within the infrastructure, lets say. So really drive from the CRO themselves to bring changes like improve their cities, It is also let say an element, they are very Inspiring people basically. Othen they do amazing things. And it is a big, it is very difficult.

42:25 (JH) What about the knowledge sharing and sharing of best practices, how is that process?

42:34 (KK) that is facilitated through us and through our network teams, and through a number of tools. That is another thing that cities have through us, that we have a whole [...] we have a dedicated team, we have a online tools, we help to create webinars, exchanges, we have the global resilient summit. Not many organizations in my opinion have the actual capacity to really have truly global conferences. And 100RC is one of those. And that is pretty unique, the live meetings. We facilitate the CRO to CRO training. City to City exchanges. We try though to do cities take the initiatives, and when they do it then we help them. We obviously can some time guide them a bit. But it is a range of ways, we doit through our teams, through emails, through [...] it is a whole range of things. Through the strategy development process it self. If you open the strategies you will see inside the strategies some examples in this grades from some different cities. So

we use these, and we push them forward as well as post examples so. It is a circle.

43:48 (JH) You mentioned the something called, CRO lessons, or ...

43:56 (KK) Trainings. We have training session for the CRO themselves as individuals. So the CRO orientations, we have sessions between the Phase 1, and Phase 2 of the strategy development process. We have trainings in terms of the implementations, environment trains like personal trainings, and one to one sessions, communications sessions. We asses their skills basically, and we help them [...] and their teams as well. And then we push this things when they are good to go and help other cities as well. So we are not enough to do the work. CRO also become a little bit part of that circle as well. It kind of training and exchanges.

44:41 (GF) And that it can be an example of this theory of chain, that you mention.

44:49 (KK) Exactly.

44:55.70 (KK) Those who become champions of the resilience practice.

45:02 (GF) Yes, ok, they inspire another resilience Officer and other cities, and so on.

45:15 (JH) Can you just in short way describe what is resilience thinking? Because we actually asked some of the others interviewees persons that we had, if they could just like what is their perception of resilience thinking.

45:34 (KK) I think I said that at the beginning, with all those characteristics but, I mean. I don't think it is a short answer in the sense that I can answer in the base of resilience theory. Ok which is the definition, which is also the 7 qualities of resilience. So approaching to the city practice, or what ever they do in integrating principles like being resourceful, redundant, reflective, integrated, inclusive, flexible, I think I am forgetting the 7th one.

46:17 (JH) Redundancy?

46:18 (KK) As part of this, yes redundant I said it. so that is part of it, the seven qualities of resilience. Also you have the city resilience framework, so that is a tool, however, it is not like the resilience thinking. So the principle are part of the resilience thinking, definitely this idea of being integrated and changing the way you operate: forward looking, so introducing forward looking principles than kinds of backwards looking to give , to learn from the past but it applying it into the future date, doing scenarios building and projections when comes to the methodology. And trying to deal with more [bars] than with one [stove]. So using always the shocks and stresses as starting point to evaluate every decision. So if our cities are doing that [...] New Zealand for example, integrating their thinking like evaluating [...] like new investments on the bases of the city shock and stresses and the PRA, it is part of the resilience thinking. Reviewing the strategy, the action strategy and renewing it ever few years as part of the method. An therefore you end having a resilience city, and resilience projects as well. And, I don't know I hope answered it.

47:35 (JH) Yes, you definitely.

47:41 (KK) where the others able to answer that, or they were confused?

47:44 (GF) Yes, they also touched upon similar concepts that you are touching.

47:54 (KK) Oh really, we are all indoctrinated.

47:57 (GF) Yes, it is part of this common language, that you mention, which is pretty interesting at the end.

48:07 (GF) Well, we have touch, almost, or all the question, but we have the last one, What now? or What is next?, The next steps for this program and for urban resilience. from your perspective.

48:31 (KK) Well It is continuing in the sense that we only have hearing from [100...] us a program that is a global organization. We are building ourselves up as independent entity gradually. So as I said before, we have a lot of asks for cities to build resilience strategies, but we are hopping in the next three years first kind of [survey] the results within our cities. And not necessarily be tempted to include 100 cities, but at the same time we are exploring basically whether how can those other cities join us. But we also have within our 100 cities, we only have these 40 out of 100 strategies. So actually there is still a few years. There still is a way forward in itself within the program itself, for the next two or three years at least. And obviously we kind of collaborate with other organization. So I think is about deepening and enlarging at the same time basically. I think this is what the future holds. And showcasing in the next years really the impacts in the chains, so we need our initial cities like Vejle to work with us do that, to really record. We are trying to record as well, create knowledge, and that is why I am also supporting what you are doing, and I am looking forward of kind of reading as well.

50:05 (JH) Arup said the same, we just interviewed a person from ARUP, saying that she would love to read our project when we are done with it, so of course you have the same possibility of course.

50:20 (KK) Ok great, thank you. And when do you think you will finish?

50:23 (JH) We have to finish the 8th of June, so in really short time. So we will have our examination on 25th so maybe it will be more suitable to send after the examination, so we can also include how the examination went then as such, if you are interested.

50:47 (KK) Great, yes I am, Thank you.

50:49 (JH) Well maybe one last thing, we have been trying to find what exactly are the 100 cities, we found different list on your web page, we can only identify 97.

51:06 (GF) Yes that is actually pretty interesting we

51:09 (KK) because they are 97, actually

51:12 (JH) They are 97, ok

51:14 (KK) I think that initially we have left one space and [...] just chose between new cities, I think I am not sure. I can not [...] be actually they chose the 100 to start with. Then we had a couple of cities dropping off for different reasons, so now we are looking at deciding whether it will be [...] we will see basically. But there are 97 it is true.

51:44 (JH) Ok it is 97

51:45 (GF) We have download all the reports that you have in the web page, and they have different lists at the end, so we were: Oh are they 102 cities, are they 97 cities? It it is really interesting.

52:01 (JH) We have actually have seen a report saying

52:06 (KK) where?

52:07 (JH) we can maybe find it, but it say in the description this are the 100 cities, but when we sum them up there were

52:16 (GF) We put them in a excell, and

52:21 (KK) Could you send me that?

52:22 (GF) yes of course, we will find it.

52:27 (KK) Ok, great. Well thank you.

52:29 (JH and GF) Thank you for the time, it is really helpful.

