



Fig. 1

# THE HAGUE NETHERLANDS

2020 Exploring Urban Resilience Pathways



International Master  
**City Resilience**  
Design and Management

**UIC**  
barcelona

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## About the report and the collection

### Exploring Urban Resilience Pathways

This report is part of a collection wishing to provide a global overview about different cities' experience in resilience, and how this is evolving. The series is titled "Exploring Urban Resilience Pathways" and each report is prepared by one student of the Int. Msc. City Resilience Design and Management (URNet-UIC Barcelona) during the first semester, as a learning outcome of the acquired analytical skills - to find, understand, organize and communicate different perspectives, approaches and models of urban resilience implementation in a determined city.

The aim of each report is thus offering an easy-to-read overview, about how adaptive capacities have been evolving in a selected city, as set of mechanisms to respond through governance, plans, projects or communities-led initiatives to overlapping shocks and stresses within its recent history. Nowadays current City Resilience Strategies – launched and supported by the Rockefeller 100RC program – are included within these analyses, representing the ultimate trend of understanding, and implementing city resilience.

What is interesting to learn from this series of reports, is that each of them critically discusses how cities managed adaptive responses to different treats in the past, and how the concept of resilience entered city agenda, discourses and plans, making explicit what (and if) resilience brought to city policies and practices. Thus, the relationship between past and present adaptive capacities, between resilience and sustainability, and between city resilience and community resilience are critically discussed.

Although the scope of these reports is ambitious, and the analysis leading to each report results complex, the presentation has been designed to be easy to read and accessible to the general public. Each report of this collection maintains a standard structure, facilitating the reading and the reports and cities comparison.

Hope this initiative contributes to spread the understanding about how resilience is framed and implemented in many cities across the globe.

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# THE HAGUE NETHERLANDS

## 2020 Urban Resilience Profile

### SUMMARY

Urban resilience is part of The Hague's DNA. Its coastal position below sea level means that the very basis of the city is built on resilience. The Dutch have been dealing with flood management for centuries and are famous for their engineering innovations to protect themselves from flooding and to secure water supplies. Through the devastating flood events at the end of the 20th century, awareness among various stakeholders increased that nature cannot be controlled with traditional engineering approaches and that social and ecological components need to be integrated into the water system in the same way as physical components are. Therefore, a change in common water management was required to counter the adverse effects of climate change and resulting climate uncertainties. From that on, the Dutch flood protection measures shifted from a robustness, centralized, and hard engineered approach, to a decentralized and long-term transformative one.

This evolution needed to respond not only to water and climate change, but to complex and interconnected challenges driven by a changing economy, cyberattacks, as other social tensions. Therefore, one of the emerging pillars on the new city resilience approach lies anymore just on water-related issues per se, but in ensuring an inclusive society to cope with upcoming systemic socio-economic transitions. This latter perspective was mainly initiated by The Hague's entry into the 100 Resilient Cities network in 2016 and the release of its official Resilience Strategy, in 2019. Although The Hague has already taken measures to strengthen its urban resilience in the past, it was mainly due to the City Resilience Strategy that the actual concept of resilience was mainstreamed among practitioners and decision-makers, seen its active use across plans, projects, and initiatives more and more frequently. Notwithstanding The Hague vast experience in resilience, we are seeing nowadays a re-raise of urban resilience, under a new lens.





Fig. 2 The aerial cityscape of The Hague



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## LIST OF ABBREVIATIONS

<b>100 RC</b>	100 Resilient Cities
<b>NAS</b>	National Adaptation Strategy
<b>NCSC</b>	National Cyber Security Center
<b>NEPP</b>	National Environmental Policy Plan
<b>MRDH</b>	Metropolitan Region Rotterdam The Hague
<b>RFTR</b>	Room for the River
<b>RTH</b>	Resilient The Hague
<b>SDG</b>	Sustainable Development Goal

# INTRO

## THE HAGUE

The third-largest city in the Netherlands, The Hague, is the home of the Dutch national government, the House of Representatives, and the Supreme Court. That is why the city is often called the “City of Peace and Social Justice” and its reputation played a key role in being selected to join the 100RC network in 2016 (PRA 2018). With only 540,000 inhabitants, the capital of the province South-Holland is home to a remarkable amount of international and intergovernmental organizations, NGOs, embassies, and consulates (100RC 2019; Meijers et al. 2014).

Until 2030, the city is expected to grow a lot, with foreign immigration making up about half of the population increase (100 RC 2019). This rises not only the demand for new housing but also the challenge of increasing segregation. The Hague has the most diverse-and segregated-population of any city in the Netherlands and throughout the city, there are notable discrepancies between neighborhoods within employment, average income, and health (RT 2019). In 2015, The Hague, Rotterdam, and other municipalities formed the MRDH (PRA 2018). Being relatively small, The Hague needed to join forces with other cities of the region to get agglomeration benefits in production and consumption. A distinguishing feature for the city is its focus on public administration and international organizations (Meijers et al. 2014). Right now, The Hague is working on setting up a further pillar in sustainable mobility and cybertechnology, continuously seeking innovative ideas as a driving force for its economy in times of digitalization.

Just like a large part of the Netherlands, The Hague lies one meter above the sea-level in a coastal zone, that is mainly consisting of a series of deltas and flood plains (Van Koningsveld et al. 2008). Its geographical location makes the city highly vulnerable to the impacts of climate change, particularly flooding. Besides, droughts and prolonged periods of heatwaves have recently increased and represent a further challenge for the city, that is imposed by urbanization. The Hague must find answers to many challenges, such as the changing economy, coping with the increasing effects of climate change, and above all ensuring that its citizens live in harmony with each other.

The Hague released its first preliminary version of the 100 Resilient Cities (100 RC) Strategy in 2018, followed a year later by the final version. This is one of the main reasons why the term resilience has gained popularity among practitioners and policymakers in the city. However, the Netherlands, and thus The Hague, have been taking measures to strengthen urban resilience for many years already, even before the actual term resilience was recognized. The following report examines how the concept of resilience has been introduced into municipal programs and plans, and how it builds and overlaps with previous risks management and adaptive capacities discourses and practices.





Fig. 3 The Hague's Binnenhof with the Hofvijver lake

## The Hague's international ambitions and challenges

***“Based on a distinctive economic profile of international organizations and a strong emphasis on the public sector, the city strives to strengthen its image as the International City of Peace and Justice” (Meijers et al. 2014, 92).***



### Coastal city

The Hague is the only major Dutch coastal city. With a coastline of 11 kilometers and an estimated 1.9 mm annual sea-level rise, the city is at a high flood risk.



### Changing city

A shift from a linear economy towards a distributed, collaborative, and circular economy will have consequences for various sectors and a big impact on the society.



### Growing city

The population is expected to grow up to 612,000 in 2040. Particularly the numbers of young people and elderly are anticipated to grow significantly (PRA 2018).



## CITY PAST

### ADAPTIVE PATHWAY

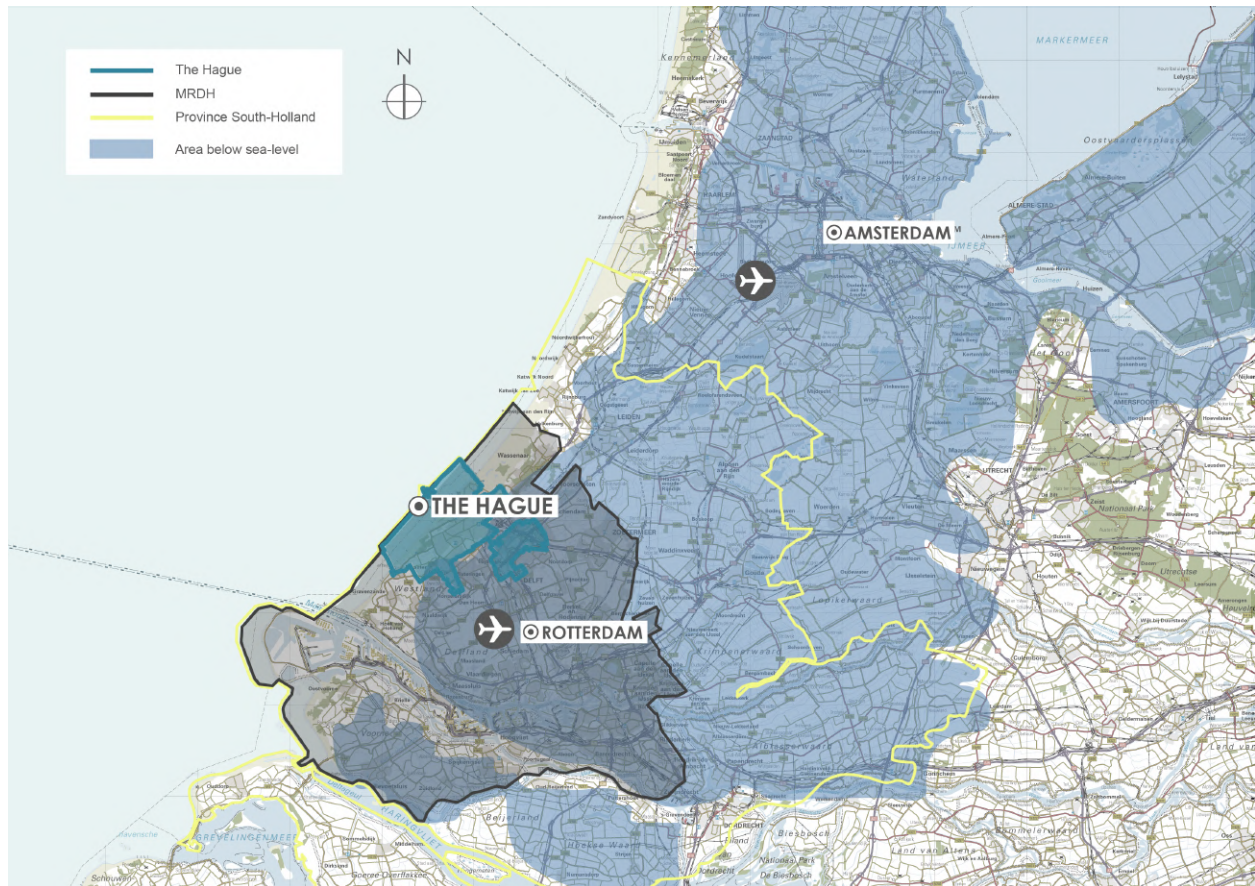


Fig. 4 The province of Zuid-Holland is to a large extent below sea level

### 1. Living with water, don't fight it

In the Netherlands, resilience in urban planning, water management, and climate change strategies are examined at the national, regional, and the local level. While the term resilience has emerged in planning agendas quite recently, certain elements are not new. Water management has a long tradition in the flood-prone country (Fig. 4). Administrative cooperation between local communities to manage water to deal with flooding in the Netherlands can be traced back to the middle ages. The precursors of the contemporary Dutch water boards were managing water at a regional level since the thirteenth century (Stead 2014). In 1798, the “National Water Agency”, which is the executive organization of the “Ministry of Infrastructure and Water Management” today, was established. It is responsible for the management of the Dutch major waters, such as the sea and the rivers. Dutch municipalities, on the other hand, are responsible for water management on a small scale and take care of the sewerage, wastewaters, drainage of surface runoff, and urban groundwater (Rijkswaterstaat 2019). Dikes prevented the country from serious flooding over the centuries. However, the big flooding of the Zuiderzee in 1906 had disastrous consequences and led to a change of dike construction. Less than 50

years later, the adjustments, unfortunately, proved to be inadequate during the North Sea flood in 1953 (Fig. 5), where over 1800 people died (Stead 2014). As a response to the flooding disaster the “Delta Works” (Fig. 6-7), a flood defense system consisting of coastal dunes, dikes, and storm-surge barriers were carried out and later manages under the “Delta Law”. Since then structural flood defenses continued to be the focus within the Dutch water management (Zevenbergen et al. 2016). The flooding of the Meuse river in 1993 and the Rhine floods in 1995 did not have the same disastrous consequences as the North Sea floods in 1953 had. However, thousands of people were moved out of the area, which was the largest post-war evacuation ever to take place in the country. This enhanced awareness among various stakeholders that nature cannot be controlled with traditional engineering approaches. And further, that common water management needed change to counter with the adverse effects of climate change (Stead 2014; Zevenbergen et al. 2016).



*Fig. 5 The disastrous consequences of the North Sea Flood in 1953*





Fig. 6 Map the Delta Works' location (in red)



Fig. 7 The Eastern Scheldt Storm Surge Barrier, part of the Delta Works



Therefore, RFTR was introduced in 2006 to create more space for rivers when discharging their flows. A new paradigm of risk management was introduced, shifting from dike improvement to river widening (Rijke et al. 2012). From a resilience perspective, this shift is known as “from fail-safe to safe-to-fail”, from solely reducing the consequences of a system’s failure to anticipate failures and create systems strategically so that failures are minimized (Ahern 2011). The program marked the transition from dike improvement to an integrated approach directed to reduce flood risk and to deliver spatial quality. It has been conceived as an approach that is more flexible to adjust to uncertain future needs than the traditional approach of reinforcement, integrating social, ecological, and physical components of the water system (Van der Brugge et al. 2005; Zevenbergen et al. 2016).

From the over 30 projects (Fig. 8), which were selected to create more room for the rivers through, for example lowering of groins, flood by-passes, dike relocation, and excavation of flood plains (Fig. 9), the program has further been a catalyst for urban planning. To reduce the flood risk of Nijmegen and surroundings, the project “Room for the Waal” was launched (Fig. 10). A dike relocation and excavation of another channel close to the river led to the creation of an island. The Municipality of Nijmegen took advantage to enhance the spatial quality of the area and transformed the entire area to a river park with recreational activities (Fig. 11). Another project is the depoldered Noordward, which allows the river New Merwede to flow more quickly to the sea at high water (Zevenbergen et al. 2013). Within the process, the “Biesbosch Museum Island” (Fig. 12) was created, which also shows the development of the Noordward (Rijkswaterstaat 2020), and thus vividly draws attention to the historical development of water management.

In term of the governance approach enabling such a transition, the RFTR was considered as to be the first to adopt a multi-level governance approach, in which NGOs and private stakeholders and authorities at national, regional, and local levels are actively collaborating in flood risk management (Brugge et al. 2005). The facilitation of integrated water management was supported in 2009 through the inauguration of the “Water Act”, which contains regulations for the use and management of water for the whole country. The law brought together the previously fragmented Dutch water legislation, to reduce the administrative burden for citizens and the business sector and making water management more efficient (Havekes et al. 2017). This was followed by the launch of the national “Delta Programme” in the following year, which has been updated annually since then. Within the program, the national government, provinces, water boards, and municipalities are working together to limit flooding and safeguard a sufficient freshwater supply in the long-term (from 2050 onwards). It further includes short-term measures that increase adaptability and resistance to flooding through the enhancement of the primary flood protection systems (Ministry of transport, public works and water management et al. 2010).

Fig. 8 Location of the RFTR measures



Fig. 10



Fig. 11



Fig. 10 River Waal-project, Nijmegen

Fig. 11 Creation of an Urban park within the river Waal-project, Nijmegen

Fig. 12 Biesbosch Museum Island



Fig. 12

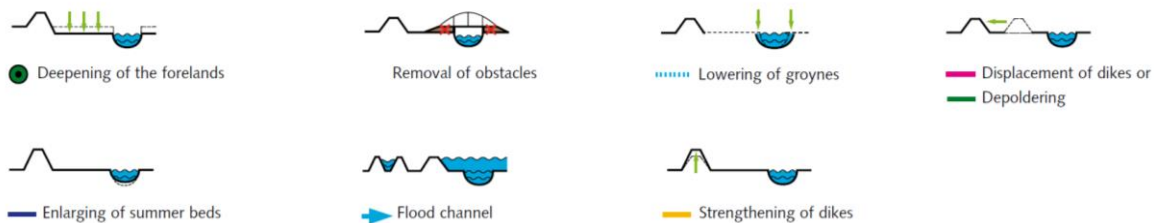


Fig. 9 Overview of the RFTR spatial planning measures

## 2. Climate action for environmental sustainability

Not only in the area of flooding and Flood Risk Management have fundamental reforms been noticeable in the Netherlands. Changes are also visible in the field of environmental sustainability, which the country has been addressing for decades. This was mainly triggered by the rapid industrial development after World War II, which led to environmental disruption and segregation. As a result, the Dutch government tried to incorporate environmental issues into its policies. In 1989, the National Environmental Policy Plan (NEPP) was introduced, building on the goals of the Brundtland Report's concept, and therefore set a path for the sustainable development of the country (Van der Straaten 1992). In recent years, further strategies that aim to contribute to a sustainable direction have been made. In 2007, the precursor of the NAS, "Knowledge for Climate", was set-up to explore the consequences of climate change. Here, the term resilience was addressed for the first time regarding physical and social systems. The NAS in 2016 thereupon, identified climate risks for all major sectors, which are related to more frequently occurring climate stresses, such as heat, failure of vital systems, agricultural losses, the shift of climate zones, infectious diseases or allergies, and their cumulative effects. Further, the NAS stated that climate adaptation and mitigation are complementary concepts, which are both indispensable (Driessen et al. 2015). The same approach was also used in the 2013 "Climate Agenda", which formed the basis for the "Climate Act", the national framework for climate-policies, in 2019. It outlined the importance of climate-robust sectors, sustainable mobility and industries, renewable energy and climate-friendlier agriculture and horticulture (Ministry of Infrastructure and the Environment 2013). The NAS and "Climate Agenda" further align with the SDG 13 "Climate action". These measures, therefore, also apply to The Hague, which released its first Climate Plan in 2011. The document, which is based on the "Environmental Plan 2006-2010", outlines the importance of carbon mitigation, considering a long-term approach until 2040 (CP 2011).

## 3. The recurring challenge of social inequality and more

Big stressors in today's The Hague are not only climate-related challenges, but social-economic problems. The latter includes unemployed, crime, the feeling of insecurity among citizens, neighborhood decay, and segregation, which can be particularly found within spatial concentrations of social or public housing (Dekker and Kempen 2004). The origin of problems dates back several decades, so that it is not surprising that the Netherlands has a long history of developing urban policies to address urban problems. Before World War II, the focus on many spatial policies was the reinforcement of the Central Business District (Musterd and Ostendorf 2008). After the war and the phase of reconstruction, large scale neighborhood development took place (Fig. 13) and was centrally organized by the government (Bumbaru 2003). The old policy became politically unacceptable and a new one was introduced. From then on, spatial policies focused on urban renewal, the enhancement of the urban economy, social exclusion, and integration problems (Musterd and Ostendorf 2008). Under the new policy, housing schemes run by housing corporations and town and city councils became the largest owners of housing stock and depended on government subsidies. Later, these post-war neighborhoods were explicitly excluded from urban renewal funding and some years later, it was observed, that the living quality in these areas was particularly poor (Bumbaru 2003). In 1994, the Dutch government released the "Big City Policy", an integrated approach,





Fig. 13 Post-WW II constructions in Leyweg, Escamp 1957

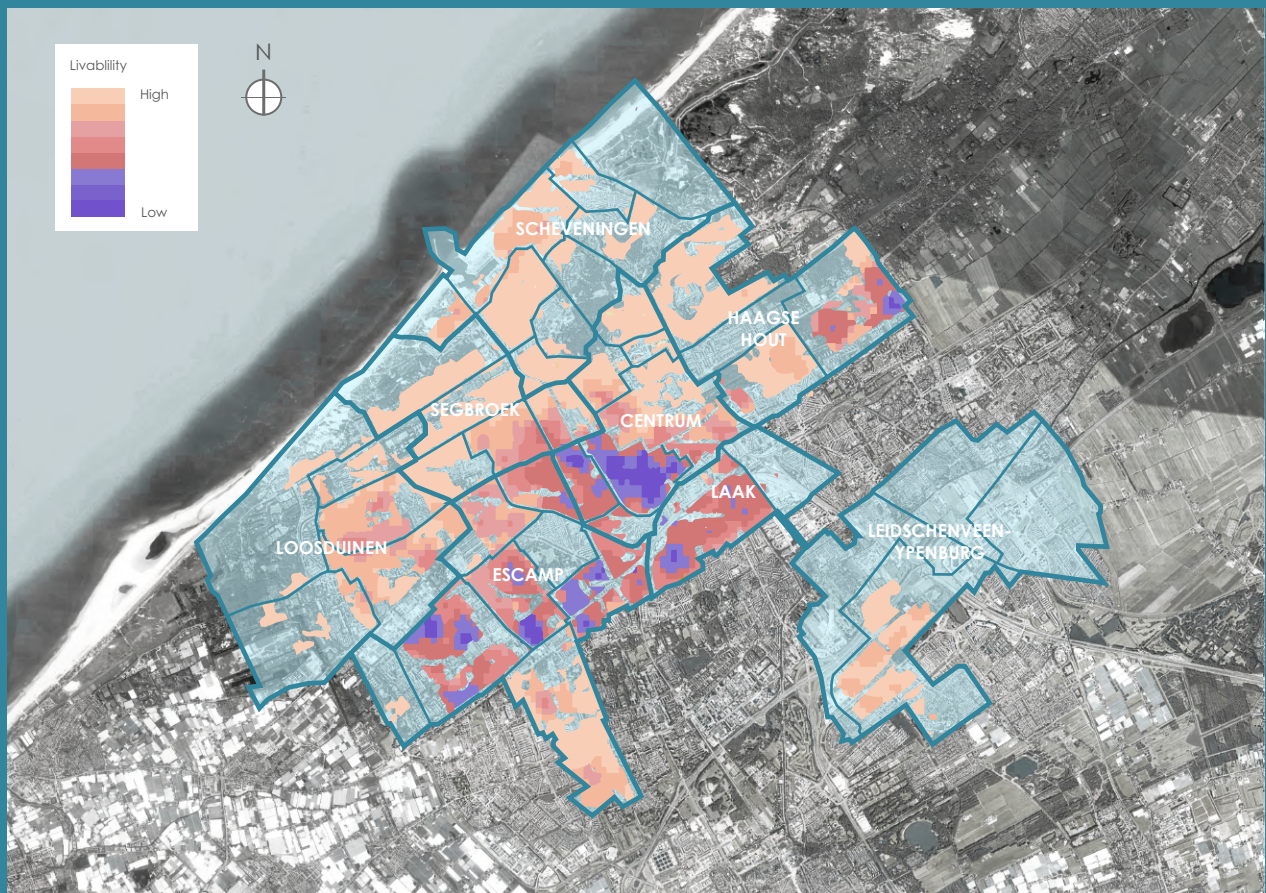


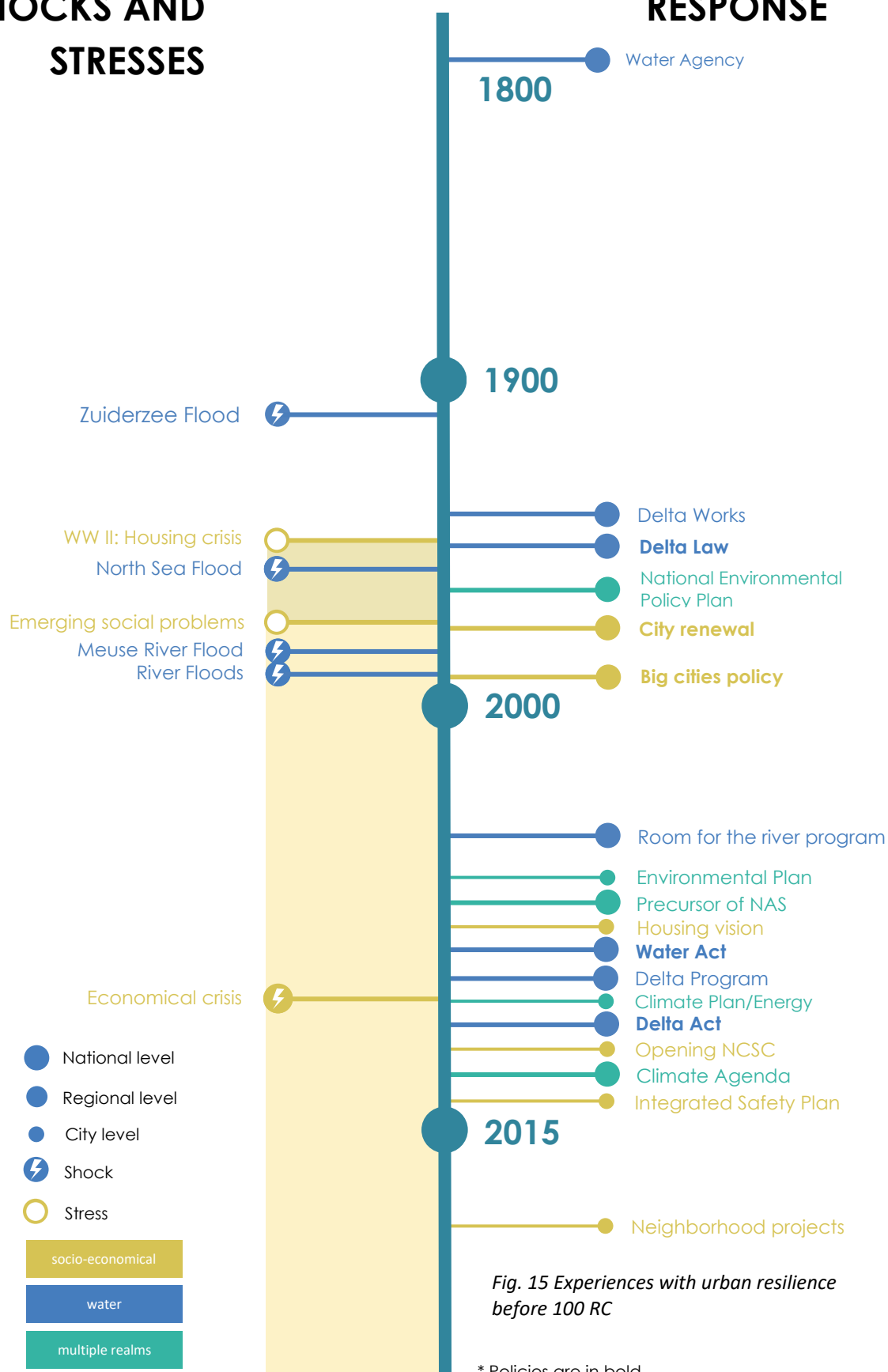
Fig. 14 Varying livability within The Hague's districts

that aims to strengthen and aggregate physical, economic, and social realms (Musterd and Ostendorf 2008). Due to the global financial crisis in 2008, the redevelopment stopped. The crisis further led to a decrease in jobs and unemployment (PRA 2018) and in the meanwhile, a new wave of immigrants began settling in the Southwest of the city (RT 2019; PRA 2018). To tackle poverty, social exclusion, crime and strengthen the sense of community, The Hague, thereupon, has released many plans and programs within the last 20 years. The first “Integral Safety Plan” was introduced in 2012 with the primary goal of tackling crime to approach safety and liveability (ISP 2012). In 2014, the city released a neighborhood action plan intending to reduce unemployment, ensure education, security, and combat radicalization (NP 2014). The actual version “Policy brief on neighborhood projects. Upward power! 2016-2019” was published in 2015 and addresses the integration of particular children, elderly and sick people as well as people with different cultural backgrounds (NP 2015). However, some of The Hague’s most vulnerable communities are still located in the Southwest, particularly in Escamp, the city’s most populous and poorest district (Fig. 14) (RT 2019). Another growing threat in The Hague are increasing cyberattacks, which created a sense of insecurity among citizens. The high concentration of international organizations, embassies, and consulates made the city particularly vulnerable to these events. A major hack in 2011 threatened many government websites and official communication of the Netherlands (100 RC 2017). In the following year, the NCSC was established (Cyberwiser n.d.). Another cyber-attack hit the harbor of Rotterdam in 2017 and raised the importance of ensuring cybersecurity again (100 RC 2018).

For The Hague, the concept of urban resilience is nothing new. Resilience related to floods has been a big pillar in the Netherlands and The Hague for centuries (Fig. 15). Being endangered by flooding, it has been protecting itself from flooding with technical and environmental knowledge ever since. The prosecutor of the NAS, which addresses climate change impacts, has mentioned the concept of resilience in 2007 already, before “100 Resilience Cities” was founded in 2013. Socio-economic problems have increased in the second half of the 19th century. The Hague has been trying to tackle these issues under policies and increasingly through plans.

## SHOCKS AND STRESSES

## RESPONSE





# THE RESILIENCE CONCEPT

## MAINSTREAMING RESILIENCE

### 1. From water to people: Empowering citizens to achieve community resilience

100 RC defines urban resilience 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 RC 2018, 2).

With the joining of the 100 RC program in May 2016, the term urban resilience gained a lot of attention in The Hague. Seven months later, the official “Agenda Setting Workshop” took place, which brought together a diverse group of stakeholders, who identified The Hague’s resilience priorities. The comprehensive workshop report was published in February 2017 (100 RC 2017), followed by the “Preliminary Resilience Assessment” at the beginning of 2018, the precursor of the city’s official Resilience Strategy (PRA 2018). Three years after The Hague joined the 100 RC network, the official Resilience Strategy was published in May 2019 (100 RC 2019). Between the workshop and the release of the official strategy, more plans and reports under the responsibility of The Municipality of The Hague and 100 RC were published on the official knowledge platform “Resilient The Hague” (RTH). It is the first time that the term resilience appears cumulatively in the city and is directly addressed in publications (Fig. 18). From the “Preliminary Resilience Assessment” to the final document, different stakeholders, experts, and citizens came together within workshop sessions, interviews, and consultations. Currently, the strategy is implemented through 41 small-scale initiatives within the city and beyond (100RC 2019). It complements existing frameworks, such as the “SDGs, the Sendai Framework for Disaster Risk Reduction, and the Paris Climate Agreement” (PRA, 2018). Therefore, The Hague’s Resilience Strategy is presented as a framework, that builds on existing capacities on which to build further to facilitate innovation, new opportunities, and capacity building. It serves as a roadmap to make the city resilient in the short and in the long-term to cope with new challenges and enlarged threats (100RC 2017).

After Rotterdam, which entered 100 RC in the first round and released its Resilience Strategy in April 2016, The Hague is the second Dutch city to join the network in the third round. Therefore, it is not surprising that the resilience goals of the two cities, which are only 20 km apart, are similar. An integrated strong citizens approach is being given greater emphasis in The Hague’s Resilience Strategy, whereas one big

**“This is The Hague: The international city of peace and justice. A strong city. A beautiful city in which it is nice to live, work and relax. To ensure that the city remains attractive, The Hague has to stay in its top condition”**

(Resilient The Hague 2018).

pillar of Rotterdam's strategy deals with the development of its port in times of energy transition and digitalization (100 RC 2016).

In The Hague's resilience strategy, urban resilience is captured through the lens of social resilience, which is also often understood as community resilience, and defined as "the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change" (Adger 2000, 347). The city puts a strong focus on people and facilitates social capital building through social networks, cooperation, communication, social learning, self-responsibility, and social interaction. Characteristics, which are key strengths that can lead to community resilience if drawn together. This is to be achieved above all through small-scale projects, which can be found within the 41 initiatives. The strategy further aims to make its citizens "safe, empowered people" (100 RC 2019, 36) and enhance community resilience through cohesion and collaboration with the creation of "liveable and cohesive neighborhoods" (100 RC 2019, 60). The platform RTH organizes events addressing resilience to raise awareness and build knowledge among different stakeholders. In the summer of 2019, the "Resilience day" was held under the motto "Celebrating and Connecting". Attendees were citizens, the City of The Hague, and other municipalities, the private sector, and educational institutions (RD 2019). An integral approach to addressing social issues can also be seen in projects that at first glance cannot be associated with them. The transportation project "Leyenburg Corridor", a new transit line that would link the city center and the four disadvantaged Southwest neighborhoods in Escamp, aims to tackle poverty and promote inclusion. The project development was an integrated and reflective approach, where conclusions from previous transport projects were drawn to see how far the Leyenburg Corridor can act as a so-called "resilience accelerator" (RA 2018). Further, the municipal plan "Healthy and Resilient The Hague" addresses the concept of community resilience with the principles of self-responsibility, collaboration, and accessibility of information (HRTTH 2019). The "Housing Vision 2017-2030" outlines not only the urgent need of affordable housing by the year 2040, but also the importance of an inclusive city, that offers livability and opportunities its citizens. It focuses particularly on the city's vulnerable districts and on the elderly and sick, young people, and families (HVTH 2017). City plans that contain community resilience goals have a short duration. However, experience has shown that these were renewed after the expiry of the time. This is reflected in the plans "Housing Vision", "Integrated Safety Plan" and "Neighbourhood Projects" (Fig. 19).

The Hague seeks to make its society "social-inclusive" and therefore likes to integrate its most vulnerable people in society. These are children, elderly, physically and mentally restricted people and refugees. The municipal plan "Healthy and Resilient The Hague" considers equality of all residents regardless of "age, lifestyle, cultural background, limitations and possibilities, gender and all other forms of diversity" regarding the objective of health (HRTTH 2019, 2). Furthermore, it aims to tackle the root causes of problems, such as loneliness through promoting social cohesion (HRTTH 2019). However, the city does not mainstream gender justice holistically. Only one initiative within the Resilience Strategy, namely "Maker education", that offers children the opportunity to experiment with different technologies, aims to inspire girls for technology (100 RC 2019). The plan "Healthy and Resilient The Hague" addresses gender-justice, yet very broadly. The city, therefore, puts a strong focus on integration, but lacks the issue of gender-justice. Social injustices are further tackled through infrastructural measures, education, and the

promotion of social cohesion. The city, therefore, addresses the root causes of problems, but at the same time deals with the effects. There is a strong notion of an integrated participative planning, where multiple interrelated realms are considered (Fig. 18), and different stakeholders involved. The process of resilience implementation is mostly directed from a municipality top-down planning, that facilitates bottom-up movements through initiatives.

## **2. Coupling community and transformative socio-technical innovation**

Resilience is further addressed within a socio-economic pillar, where it is related to capacity building regarding social and technological skills, to deal with the upcoming digital transition of The Hague's one-sided economy. Citizens, particularly the younger generations, must therefore enhance their digital skills (100 RC 2019). In the field of digitization, special emphasis is placed on "cyber-resilience". The concept was further taken up at a conference "Towards Cyber Resilience" in 2018, at which best practices of international projects were presented to build and share knowledge to cope with the risk of cyber-attacks. In the same course, the term "digital resilience" was brought to the table, which further addressed the risk of excluding those that cannot keep pace with the fast development of new technologies. Because of this, the call for inclusion was made to improve the "digital resilience" of The Hague's citizens (TCRC 2018). The strategy thus builds on the 2018' national "Digitalisation Strategy", the overarching digital strategy of the Netherlands, which relates resilience to digital threats (Ministry of Economic Affairs and Climate Policy 2018). It further aligns with the goals of The Hague's "Economic Vision", which was published in 2019 and serves as the roadmap for the city's economic development. The fact that the strategy takes up the same themes of municipal and national plans shows that the socio-economic matters of the strategy are built on them. The Hague's economical change is further outlined within the "Agenda Space for the city 2016-2040", the basis of the city's new spatial policy. Aside from the economic transition, the roadmap covers the transition challenges resilient society, smart urban development, and organizing ability. The agenda states an economic change calls for a resilient society, that innovates and cooperates. It further outlines the integration of people with distance to the labor market and refugees (ASC 2016). The Hague's economic goals align with the long-term strategy "Roadmap Next Economy", that describe the steps to achieve an economic transformation of the MRDH until 2050. They include a shift to renewable energy, a circular economy, and its digitization that is estimated to cost 50 billion euros for the whole region (Metropoolregio Rotterdam Den Haag 2016).

## **3. Climate Resilience for a sustainable city development**

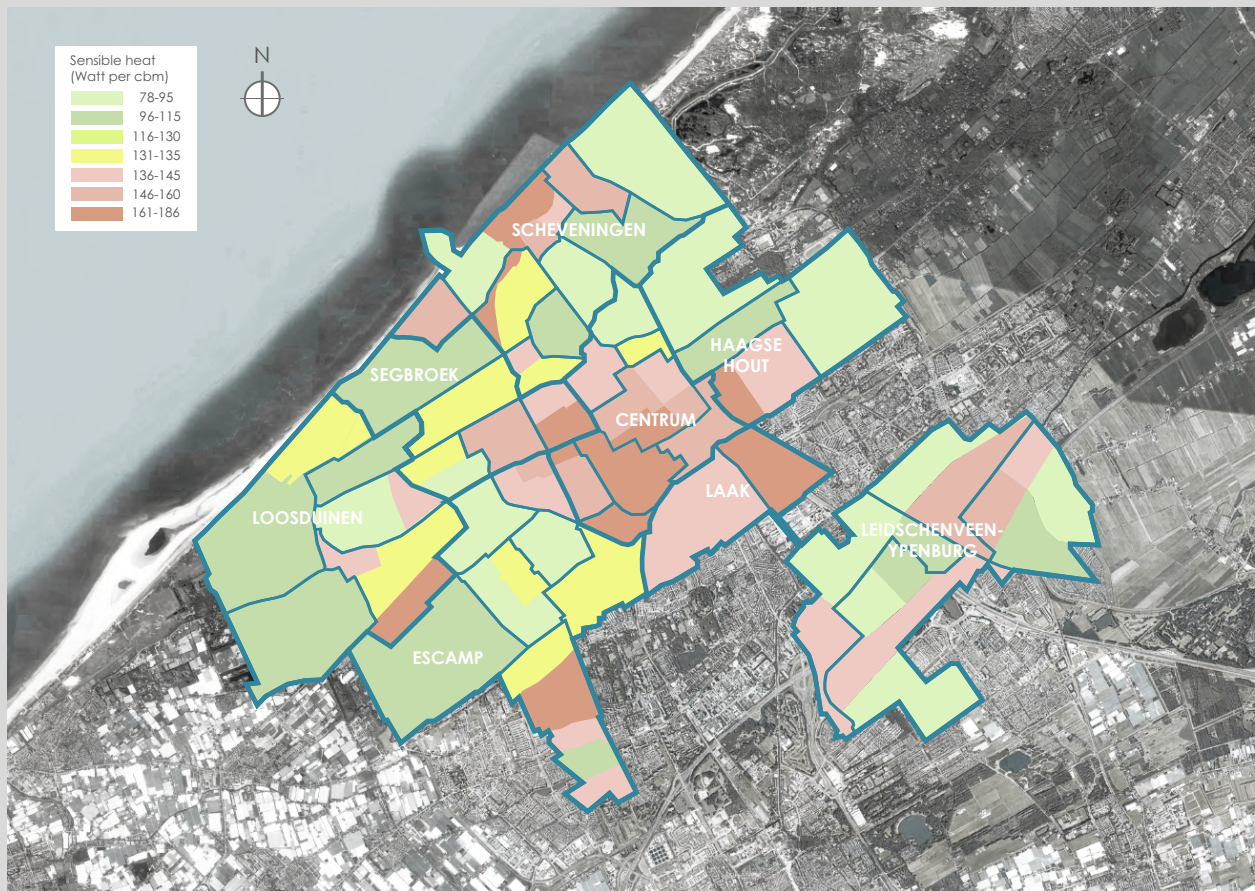
Aside from the socio-economic pillar, the Resilience strategy addresses resilience regarding climate change adaptation. Climate change is described as a stressor, which functions as a shock amplifier. It increases the likelihood and consequence of risk events such as extreme weather events like extreme rainfall, flooding, prolonged heat periods, droughts, pandemics, and the disruption of critical infrastructure. The latter needs to be designed to withstand, respond to, and adapt more readily to shocks and stresses. Furthermore, the strategy emphasizes that the city and its citizens need to be risk aware and emergency preparedness concerning infrastructure failure. Not only regarding infrastructure, but also in terms of a risk-aware behavior and more generally speaking risk management. Despite capacity building in terms of awareness-raising and knowledge building through research and exchange is much more



needed than before, the Netherlands only has one campaign that prepares citizens in the emergency case (100 RC 2019).

As stated previously, the term resilience has been mainstreamed in the NAS regarding climate change. The NAS implementation program from 2018 aims to set-up national, regional, and provincial climate adaptation dialogues and collaborations. It further contextualizes climate resilience with nine sectors and includes for the first time the sector of build infrastructure, which also appears in the Resilience Strategy. The NAS equates resilience with robustness, which needs to be improved to cope with the adverse effects of climate change (Meijs et al. 2018). Despite the NAS addresses climate impacts on nine cross-cutting sectors, the 2020' report, a reflection on the NAS implementation program, outlines that the next NAS needs to be further linked to "other transitions and social challenges" because climate adaptation affects several interlinked sectors (Meijs et al. 2020). In The Hague, the development of plans with a cross-sectoral approach is equally visible. The 2019' framework "Memorandum on Sustainability" is primarily concerned with creating a basis for implementing a carbon- free energy transformation. However, it further intends to have a broader focus on changes in the sectors of energy, living environment, environment-friendly mobility, and resources to ultimately achieve the goal of a more liveable city. Further, the roadmap brings up the concept of an integrated climate resilience strategy, under which small measures on a neighborhood level, such as city greening or beyond that blue-green corridors, are going to be implemented. It states that climate resilience must be embedded within the actions of multiple stakeholders, even beyond the city-scale. The framework further builds on the 10-year plan "Green for the city", which addressed strategic choices in terms of greening and sustainability to increase biodiversity, mitigate heat stress, and extreme rainfall (AGC 2016). Like the Resilience Strategy, both plans address risk events such as heat stress, drought, extreme rainfall, and flooding. The "Memorandum on Sustainability" further outlines the negative impact on floods regarding vulnerable infrastructure. It is not surprising that it covers vulnerable infrastructure in the same way as the Resilience Strategy does since the program declares that The Hague is among other stakeholders working together with RTH on climate adaptation (CECC 2019).

The Netherlands, who is more known for the fight against water than for the fight against droughts, has recently given more attention to the emerging problem of water scarcity. After the country had to fight with heavy rains 2016 and 2017, it was faced with drought a year later (PRA 2018; Ministry of infrastructure and water management et al. 2019). The Resilience Strategy draws attention to the drought issue and further claims that lacking space for retention and infiltration of water in urban areas causes additional problems. Therefore, the initiative "Urban Water Buffer" was launched, which tackles the challenges of flooding and secure freshwater supplies in The Hague and beyond. It aims to better understand how improved water retention in urban areas can address flood risk and improve water supplies (RC 2019). In the Hague, the impact of extreme weather, such as heat stress, varies in different parts of the city. Neighborhoods with little greening and more sealed surfaces, such as the city center, Scheveningen and Laak, are particularly sensitive to heat (Fig. 16), and also to the occurrence of the "heat island effect" (PRA 2018).



*Fig. 16 Sensitive Heat in the different districts of The Hague*



*Fig. 17 Initiative for greener schoolyards across the city*



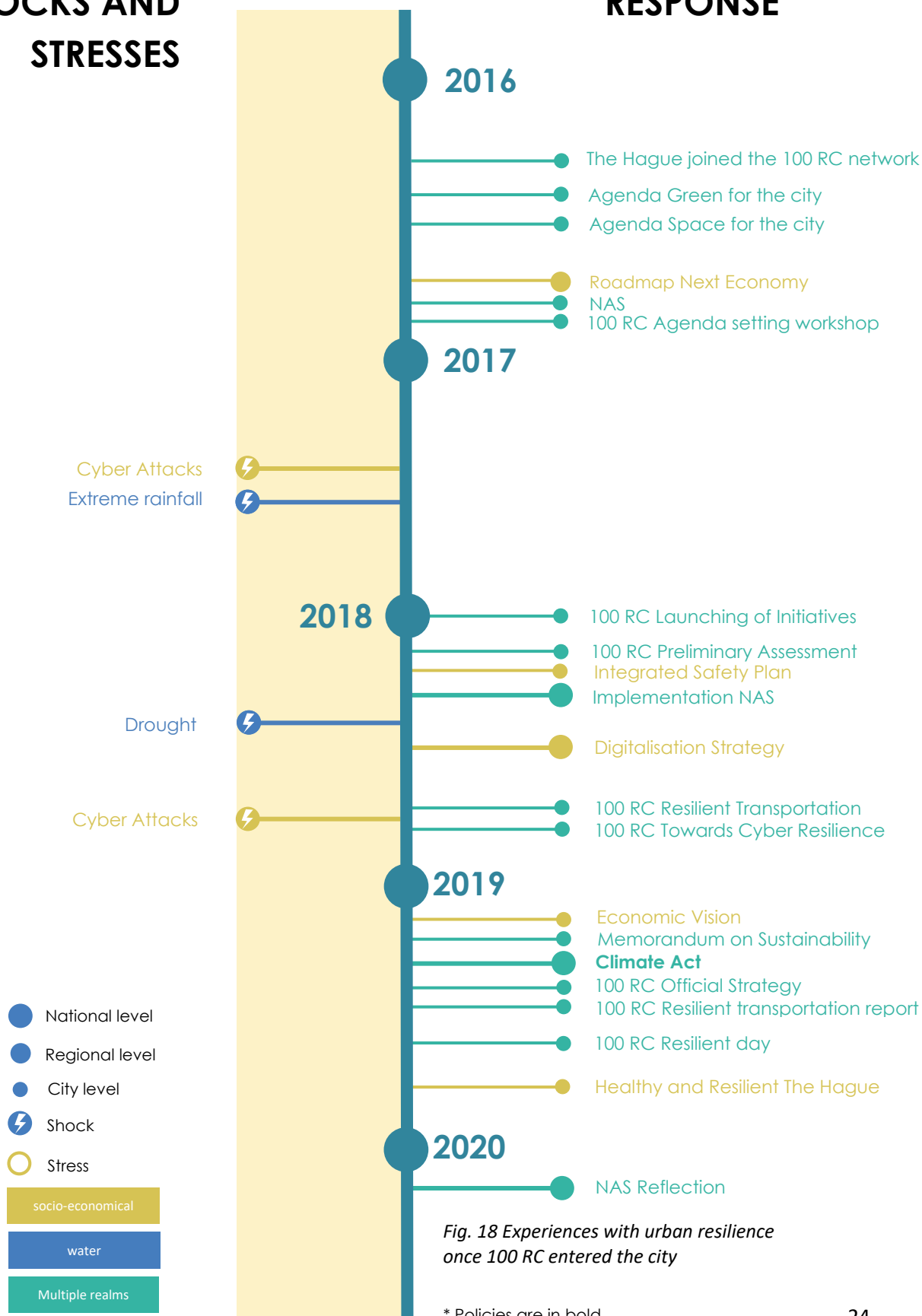
Since extreme heat causes many problems, such as decreasing labor productivity and a negative health impact of vulnerable people, another city initiative (Fig. 17) advocates for the greening of schoolyards through de-paving and tree planting to increase cooling and water absorption and to enhance the learning environment of children (RC 2019).

Even if climate resilience is addressing both adaptation and mitigation in the Hague, adaptation is where most of the attention of the Resilience Strategy goes to, and medium-term measures are taken. While the adaptation approach mainly deals with soft measures, such as green and blue infrastructures, mitigation is addressed within the long-term carbon-free energy and mobility transformation. These actions further align with the long-term project “Delta Works” and “Delta Programme”, and with the NAS. Moreover, The Hague aims to build robust critical infrastructure and enhance the emergency preparedness of citizens and businesses. 100 RC and RTH use the term resilience broadly as a metaphor. This is shown through the concepts “resilience accelerator, resilient transportation, cyber-resilience and digital-resilience” (RA 2018; TCRC 2018; RT 2019). Here, it stays unclear which meaning of resilience experts had in mind.



## SHOCKS AND STRESSES

## RESPONSE



*Fig. 18 Experiences with urban resilience once 100 RC entered the city*

\* Policies are in bold

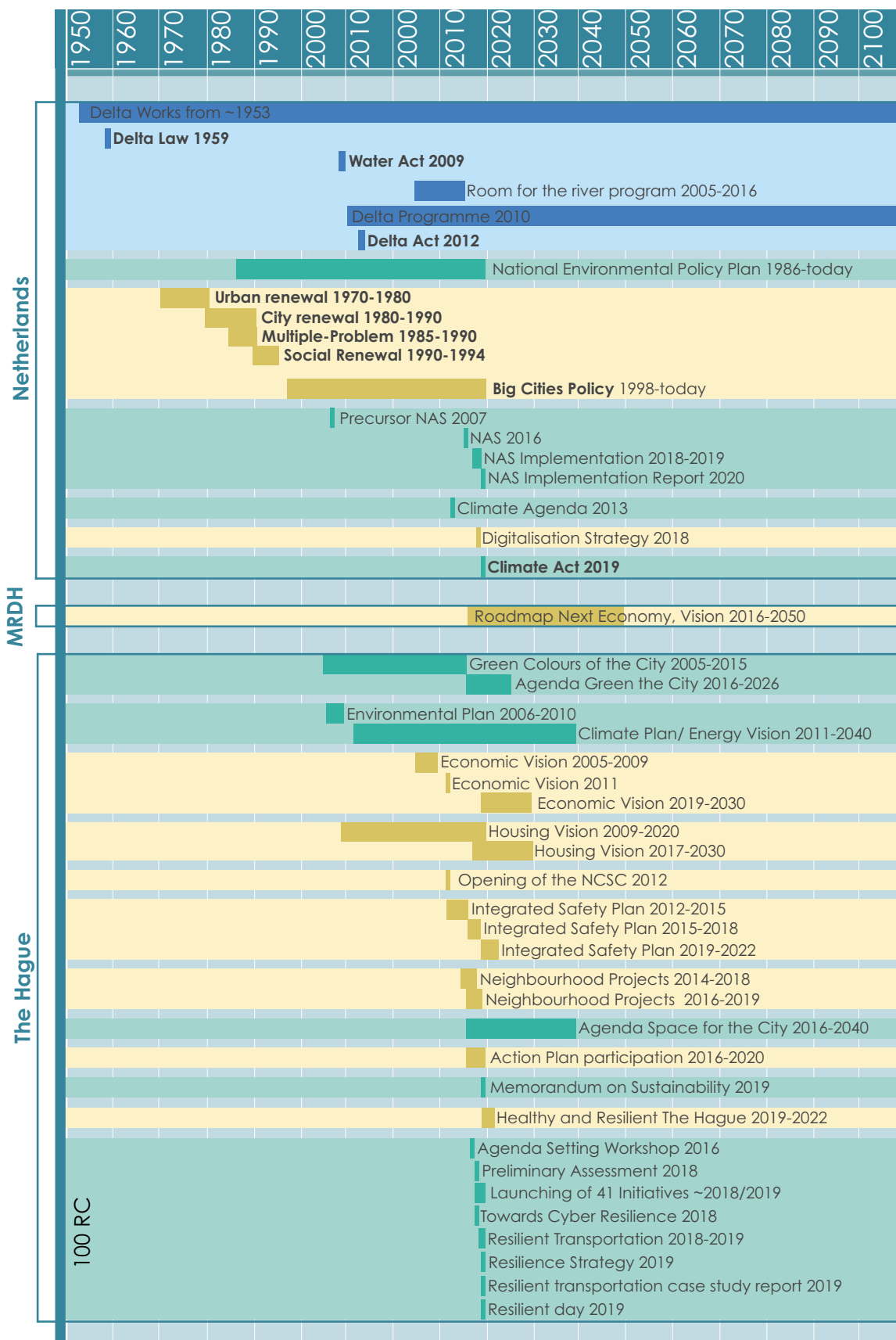


Fig. 19 Policies, plans and programs related to urban resilience

## WRAP-UP: IS THE EVOLUTION OF RESILIENCE CALLING FOR A PEOPLE-CENTRED APPROACH?

The Hague needed to respond to crises over many centuries. Therefore, the city has been developing mechanisms to strengthen its urban resilience from early on. This has been particularly the case with water-management, where actions at a national level were equally relevant to cities, and thus also for The Hague. One crucial event was the flooding disaster in 1953, which led to the construction of the national flood defence system “Delta Works” (Stead 2014). Since then structural flood defences continued to be the focus within the Dutch water management (Zevenbergen et al. 2016). As a response to the flood events in 1993 and 1995, the national program “Room for the River” (RFTR) was introduced in 2006 (Rijke et al. 2012). The program marked a shift from dike improvement to river widening, hence from engineered resilience to a long-term transformative approach (Zevenbergen et al. 2016). Further, a change to an integrated water management approach was made through the “Water Act” in 2009 that pulled together the fragmented Dutch water legislation (Havekes et al. 2017). The concept of integrating policies into one big policy is also visible in other areas of Dutch planning.

In a rapidly evolving world, The Hague is facing new challenges associated with being a low-lying coastal city, that must deal with extreme weather events and increasing climate uncertainties. The Netherlands has already started addressing climate adaptation and mitigation measures more than two decades ago, when publishing the precursor of their NAS in 2007, and the “Climate Agenda” in 2013. This notion is also recognizable in The Hague, which aligns with the national mantra “Adapt and prevent” (Ministry of Infrastructure and the Environment 2013). The city aims to tackle climate change effects in the medium and long-term under considering a resilience approach that is related to robustness to withstand critical infrastructure failure. An increasing emergence of adaptation planning can be observed in recent years, especially through the Resilience Strategy.

Since The Hague joined the 100 RC network in 2016, the resilience concept has started being addressed within municipal plans, programs, infrastructural projects, and small-scale initiatives. The actual term resilience appears particularly frequently within publications of RTH. Concerning that, resilience is used as a metaphor for adaptation to specific shocks or stresses. It is, therefore, oftentimes not clear to what kind of resilience is meant. Before the official 100RC Strategy was released in 2019, resilience was institutionalized in a variety of departments to achieve diverse goals. For this reason, it was highly fragmented and addressed within various topics without considering the complex relationships among them. The Resilience Strategy, therefore, functions as an umbrella that canalizes the most important municipal and regional publications regarding resilience with covering broad socio-economic and environmental concerns. It strives for a systemic approach, capturing the complex interlinkages among different realms. This trend became also evident on a municipal level, as the city is publishing more plans addressing cross-cutting aspects. The platform RTH, however, offers the advantage of facilitating capacity-building, such as knowledge accumulation, more efficiently.

The Hague’s Resilience Strategy puts a strong focus on its citizens. It aims to unite its population under the vision of an “inclusive society” that encourages capacity building through social learning, cooperation,

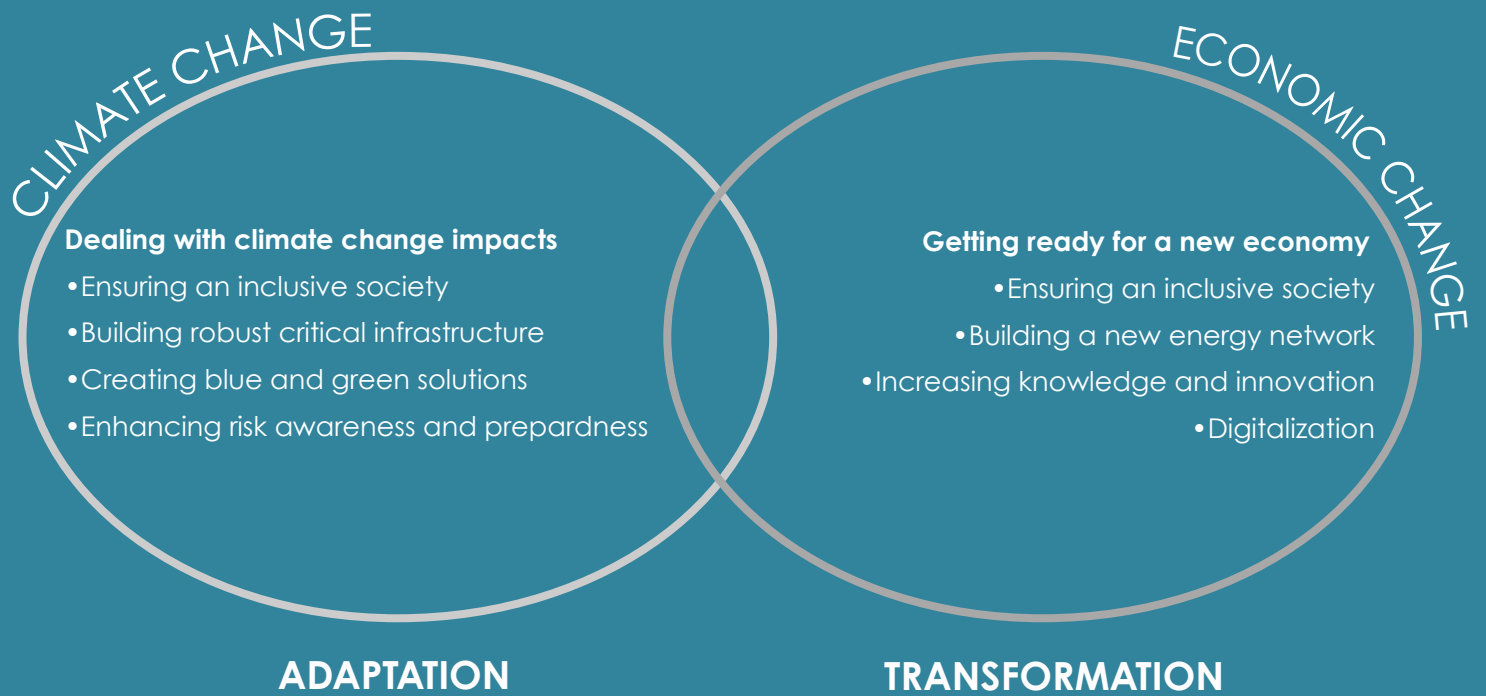


and identity-forming participatory bottom-up initiatives. Therefore, the focus lies mainly on community resilience, through which The Hague aims to be prepared for big challenges, such as climate change and a new economy. The city aims to integrate various stakeholders within planning processes and thus reflects the Dutch planning system. Due to changes within the national spatial planning, cities and regions nowadays have more responsibilities. On the other hand, there are not many concrete regulations at the national level and responsibilities are difficult to assign (Gerrits 2012). The Hague has set itself ambitious goals. It is questionable whether the city will be able to meet them.

Despite The Hague promoting an inclusive society, gender-justice is hardly ever addressed. This is not only the case in The Hague, but an overall issue in the Netherlands. Indeed, according to OECD the country performs well on many measures of gender equality but faces a major challenge in reaching equality between women and men particularly on the labor market (OECD 2019). The 2018' policy setting guideline "Theory Of Change - Woman's Rights And Gender Equality" declares, that the Netherlands will contribute to the realization of the SDG 5 "Achieve gender equality and empower all women and girls" (Ministry of Foreign Affairs 2018). Gender-justice is, however, mostly mainstreamed with the focus on development aid, and thus with a broader perspective to the Kingdom of the Netherlands and beyond. This notion is displayed through the "National Action Plan on Woman, Peace and Security". The approach is noble, but the question arises whether actions at the city level would not be equally necessary to address.

The city of The Hague aims to tackle the roots of social problems that have emerged in the second half of the 20th century. Although the city has tried to solve these problems through several policies, the "City of Peace and Justice" stays the most segregated one of the Netherlands. This imposes an even bigger challenge to the upcoming economical change. The "Third industrial revolution" (Metropoolregio Rotterdam Den Haag 2016, 4) requires the rapid development of internet technology and a carbon-free energy network. Digital platforms will be the base for a new form of social and communal enterprises, which requires adaptation to new societal and technological skills from The Hague's society (Metropoolregio Rotterdam Den Haag 2016). However, rapid digitization entails the trade-off of excluding vulnerable parts of society. Especially older, physically, and mentally handicapped people are at high risk. And since The Hague is home to governmental institutions, the city is particularly vulnerable to cybercrime. Therefore, a long-term socio-economic transition is required to achieve a systemic change.

The Hague is going to face many challenges in the future. Therefore, it depends, more than ever, on collaboration within the MRDH region and beyond. This notion is evident within the city's municipal strategy, where initiatives aim at networking with regional and national partners. The Hague mainstreams urban resilience as an integrated concept, that covers various interrelated realms. However, climate change adaptation and the economic transition are key themes, which require citizens' cohesion to achieve the main goal of a sustainability city.



*Fig. 20 The Hague's resilience approach*



*Fig. 21 Scheveningen beach*

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## List of figures

Graphics, which are not explicitly mentioned in the list of figures, were created by the author.

Fig. 1

[https://denhaag.com/sites/default/files/styles/keyvisual\\_1220x640/public/2019-10/Scheveningen.jpg?h=cbe938d4&itok=48XL9ZvY](https://denhaag.com/sites/default/files/styles/keyvisual_1220x640/public/2019-10/Scheveningen.jpg?h=cbe938d4&itok=48XL9ZvY) (Last accessed 23.07.2020).

Fig. 2

[https://content.presspage.com/uploads/1193/1920\\_cbredenhaag-277025.jpg?10000](https://content.presspage.com/uploads/1193/1920_cbredenhaag-277025.jpg?10000) (Last accessed 27.04.2020).

Fig. 3

[https://www.fdcv.nl/fdcv-uploads/2017/05/DSC\\_6172-1155x640.jpg](https://www.fdcv.nl/fdcv-uploads/2017/05/DSC_6172-1155x640.jpg) (Last accessed 28.06.2020).

Fig. 4

Author 2020, based on TU Delfts library of topographical maps:

<https://www.tudelft.nl/en/library/collections/map-room/map-collection/topographical-maps/top250raster/> (Last accessed 02.04.2020) and the map from “DeTombe, D., 2008. Climate change: a complex societal process; analyzing a problem according to the Compram methodology. *Journal of Organisational Transformation & Social Change*, 5(3)”, p. 5.  
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Fig. 5

[https://upload.wikimedia.org/wikipedia/commons/thumb/8/82/Watersnoodramp\\_1953.jpg/1920px-Watersnoodramp\\_1953.jpg](https://upload.wikimedia.org/wikipedia/commons/thumb/8/82/Watersnoodramp_1953.jpg/1920px-Watersnoodramp_1953.jpg) (Last accessed 28.06.2020).

Fig. 6

Author 2020, based on the following image, retrieved from

<http://www.deltawerken.com/modules/mediagallery/images/maps/dammen.jpg> (Last accessed 23.06.2020).

Fig. 7

[https://www.holland.com/upload\\_mm/3/7/0/68949\\_fullimage\\_water-deltawerken-1360.jpg](https://www.holland.com/upload_mm/3/7/0/68949_fullimage_water-deltawerken-1360.jpg) (Last accessed 24.06.2020).

Fig. 8

[https://staticresources.rijkswaterstaat.nl/binaries/maatregelen-ruimte-rivieren\\_tcm21-239269.png](https://staticresources.rijkswaterstaat.nl/binaries/maatregelen-ruimte-rivieren_tcm21-239269.png) (Last accessed 23.06.2020)

Fig. 9

Arnhem Met Andere Woorden (2006): Spatial Planning Key Decision ‘Room for the River’ Investing in the safety and vitality of the Dutch river basin region. Ministry of Transport, Public Works, p. 4. Available at: <http://www.swim-sm.eu/index.php/en/resources/category/33-study-tour-to-develop-the-capacity-of-prosecutors-and-investigators-the-netherlands?download=289:brochureroomfortheriver-1pdf> (Last accessed 24.06.2020)

Fig. 10

[https://worldlandscapearchitect.com/wp-content/uploads/2017/06/Aerial-overview-from-the-west\\_Siebe-Swart.jpg](https://worldlandscapearchitect.com/wp-content/uploads/2017/06/Aerial-overview-from-the-west_Siebe-Swart.jpg) (Last accessed 23.06.2020).

Fig. 11

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Fig. 12

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Fig. 13

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Fig. 14

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Fig. 15

Author 2020

Fig. 16

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Fig. 17

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Fig. 18

Author 2020

Fig. 19

Author 2020

Fig. 20

Author 2020

Fig. 21

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