University of Groningen

Planning for inclusive flood resilience in Southeast Asia

Laeni, Naim

DOI:
[10.33612/diss.192293069](https://doi.org/10.33612/diss.192293069)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2021

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Laeni, N. (2021). *Planning for inclusive flood resilience in Southeast Asia: A critical perspective on policy translation, institutional capacity building and transformation*. [Thesis fully internal (DIV), University of Groningen]. University of Groningen. <https://doi.org/10.33612/diss.192293069>

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Planning for inclusive flood resilience in Southeast Asia

A critical perspective on policy translation, institutional capacity building and transformation

Naim Laeni

ISBN 978-94-6419-373-2

Cover design: Dolyakrit Wongkam

Printing: Gilderpint

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Planning for inclusive flood resilience in Southeast Asia

A critical perspective on policy translation, institutional capacity
building and transformation

PhD thesis

to obtain the degree of PhD at the
University of Groningen
on the authority of the
Rector Magnificus Prof. C. Wijmenga
and in accordance with
the decision by the College of Deans.

This thesis will be defended in public on

Monday 6 December 2021 at 11.00 hours

by

Naim Laeni

born on 26 February 1993
in Narathiwat, Thailand

Supervisors

Prof. E.J.M.M. Arts

Dr. M.A. van den Brink

Assessment Committee

Prof. J. Woltjer

Prof. S.V. Meijerink

Prof. M.Z. Zwarteveen

For my late father

Table of Contents

Chapter 1 Introduction	14
1.1 Setting the scene: flood vulnerabilities and flood resilience planning efforts in Southeast Asia	15
1.2 A critical perspective: inclusive flood resilience	18
1.3 Flood resilience in global water policy translation	20
1.4 Institutional approaches for inclusive flood resilience planning	22
1.5. Research aim and questions	24
1.6 Relevance of this research	27
1.7 Research methodology	29
1.8 Research structure and thesis outline	40
References	44
 Chapter 2 Is Bangkok becoming more resilient to flooding? A framing analysis of Bangkok's flood resilience policy combining insights from both insiders and outsiders	 54
2.1 Introduction	56
2.2 Building inclusive, flood resilient cities	58
2.3 Research design	62
2.4 Bangkok resilience strategy: A new solution for dealing with floods?	67
2.5 Discussion	72
2.6 Conclusion and recommendations	74
References	76
 Chapter 3 Going Dutch in the Mekong delta: A framing perspective on water policy translation	 82
3.1 Introduction	84
3.2 Water policy translation: a framing perspective	86
3.3 Research methodology	91
3.4 The Netherlands: internationalizing Dutch water management	94
3.5 Vietnam: striving for a safe, prosperous and sustainable Mekong delta	98
3.6 Discussion	102
3.7 Conclusion	104
References	106

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation: Lessons from the Water as Leverage Program in Semarang, Indonesia

	112
4.1 Introduction	114
4.2 Local institutional capacity building: international resilience programs for urban flood adaptation	116
4.3 Research Methods	122
4.4 The Water as Leverage Program in Semarang: a collaborative and design process for local institutional capacity building	126
4.5 Discussion	137
4.6 Conclusion	141
References	143

Chapter 5 Institutional conditions for inclusive, flood resilient urban deltas: a comparative institutional analysis of two international resilience programs in Southeast Asia

	148
5.1 Introduction	150
5.2 An institutional approach: rules-in-use	151
5.3 Operationalizing rules-in-use for the institutional analysis of inclusive flood resilience planning	154
5.4 Research Design	161
5.5 Comparative institutional analysis of the MDP and the WaL program	166
5.6 Discussion: strengths, weaknesses, and ways forward	178
5.7 Conclusion	180
References	182

Chapter 6 Conclusion and Reflection: Planning for Inclusive Flood Resilience in the Context of Southeast Asia

	188
6.1 Introduction	189
6.2 Main findings: addressing flood vulnerabilities by inclusive flood resilience planning	191
6.3 Discussion: towards inclusive flood resilience planning	203
6.4 Contributions to flood resilience research and reflections on the research methods	212
6.5 Suggestions for future research	216
6.6 Lessons for planning practice	218
6.7 Epilogue: inclusive flood resilience planning and cities of hope	224
References	226

Appendices	230
Summary	264
English summary	265
Nederlandse samenvatting	276
บทสรุปภาษาไทย	288
Acknowledgements	303

List of tables and figures

Tables

- Table 1.1: Overview of data collection methods used in each case
- Table 1.2: Sub research-questions, cases and outline of the thesis
- Table 2.1: An overview of key criticisms regarding resilience policy adoption
- Table 2.2: Aspects of flood resilience building in urban flood risk management
- Table 2.3: Overview of qualitative data collection
- Table 3.1: Dimensions of water policy translation
- Table 3.2: Data collection for studying the creation and mobilization of the international water policy frame by the Netherlands
- Table 3.3: Data collection for studying the creation and embeddedness of the Dutch water policy frame in Vietnam
- Table 4.1: An analytical framework for analyzing local institutional capacity building by international resilience programs
- Table 4.2: Overview of key Water as Leverage (WaL) activities for local institutional capacity in Semarang, Indonesia
- Table 4.3: An overview of the WaL multidisciplinary design teams and the proposed strategic climate solutions for Semarang
- Table 4.4: Institutional strengths and weaknesses of the WaL program in building local institutional capacity in Semarang
- Table 5.1: Operationalizing rules-in-use for the institutional analysis of inclusive flood resilience planning
- Table 5.2: Overview of documents and interviews for the data collection
- Table 5.3: The essential institutional conditions based on the rules-in-use derived from the MDP and the WaL program

Figures

- Figure 1.1: Schematic visualization of the structure of this research
- Figure 1.2: Locations of the three case studies: (1) Bangkok, Thailand, (2) Vietnamese Mekong Delta and (3) Semarang, Indonesia
- Figure 2.1: The Flood Protection System of Bangkok
- Figure 2.2: Bangkok Resilience Strategy formulation process
- Figure 3.1: The Dutch delta management frame
- Figure 3.2: Communication factsheet of the Netherlands framed as 'your partner for water solutions'
- Figure 3.3: The Mekong delta management frame
- Figure 4.1: Conceptual design of the climate resilience proposals developed in the Water as Leverage program in Semarang
- Figure 4.2: The Water as Leverage method
- Figure 5.1: Rules-in-use affecting the structure and elements in an action-situation as developed by Ostrom (2010)

Figure 5.2: Strategic recommendation towards agro-business industrialization in the MDP 2013

Figure 5.3: Water as Leverage Approach

The background of the page is a dark gray field filled with numerous overlapping, wavy, light gray lines that create a sense of movement and depth. A semi-transparent, light gray rectangular box is positioned in the upper left quadrant, serving as a container for the chapter title.

Chapter 1

Introduction

1.1 Setting the scene: flood vulnerabilities and flood resilience planning efforts in Southeast Asia

It has been 10 years since Thailand faced major nationwide flood events. The 2011 Floods affected 66 out of 77 Thai provinces including Bangkok and killed over 800 people. The World Bank estimates a total loss of USD 45.6 billion and another USD 50 billion for the country's reconstruction and rehabilitation (World Bank, 2012). The 2011 Floods were caused by one of the highest precipitation records of the summer monsoon (the highest in 64 years) and multiple tropical storms (Nair et al., 2014). Due to the current intensifying climate conditions including sea-level rise and exceptional rainfall, there is a great possibility that the country could face potential flood events with a similar magnitude of impacts in the near future (Gale & Saunders, 2013). The 2011 Thailand Floods are only one example of extreme disasters in Southeast Asian cities, resulting from unforeseen climate events. Another more recent example was the flooding in Jakarta that caused 66 deaths and displaced more than 36,000 people during New Year 2020 (AHA Center, 2020). According to the 2019 WEF Global Risk Report, the projected sea-level rise and variation and intensification of rainfall will cause more frequent and intensified flood events in Southeast Asian urbanized regions, especially in their coastal cities (World Economic Forum, 2019). Similar findings were reported in studies by the World Bank, the Asian Development Bank, and also by the Netherlands Environmental Assessment Agency (PBL, 2018; Pillai et al., 2010; Vinke et al., 2017).

Four cities in Southeast Asia – Jakarta, Manila, Ho Chi Minh City, and Bangkok – are ranked among the top ten fastest 'sinking cities' in the world (Ayanaputra & Lohatepanont, 2019). Several studies have pointed out that the alarming land-subsidence rates are putting these cities at high risk of flooding (Endo, 2011; Nicholls et al., 2008; Patankar et al., 2013). Next to climate change, socio-economic factors contribute to increasing flood vulnerabilities in these urbanized regions, especially among socio-economically vulnerable groups. The continuing urban growth and migration of rural populations to large cities have resulted in increasing pressure on the urban water demand and the development of informal housing in flood-prone areas. Consequently, low-income populations in Southeast Asian cities are the most at risk of the negative impacts of flooding. To illustrate, these low-income households have inadequate resources to migrate away from disasters and to rebuild their houses afterward (Stanto, 2013). In most cases, informal

Chapter 1 Introduction

settlement inhabitants have limited access to government services and support for flood prevention and recovery (Hugo & Bardsley, 2014). Reducing flood risks in developing countries therefore requires particular attention to the social dimensions related to ecological and climatic impacts among vulnerable communities, especially in the context of large metropolitan cities in Southeast Asia.

Triggered by the increasing impacts from flooding, policy makers in Southeast Asia have been part of various global resilience platforms and international resilience programs. Such collaboration and engagement provide these policy makers with the opportunities to initiate local flood resilience planning processes. Since 2007, many cities in the region have been part of the Asian Cities Climate Change Resilience Network (ACCCRN), which was initiated by the Rockefeller Foundation to introduce the resilience concept in local and national policy contexts and to support local flood resilience initiatives (Brown et al., 2012). Following this global platform, the Rockefeller Foundation also launched the 100 Resilient Cities Programme (100RC) to collaborate with city governments around the world (including in Southeast Asia) for the development and implementation of urban resilience policies at the city level. The 100RC Programme also invited the member cities to join the 100 Resilient Cities Network, a global resilience learning platform for exchanging ideas and collaboration between mayors, city policy makers and experts. With rising global attention for innovative water policy ideas and concrete flood resilience policy solutions, the Netherlands has been actively engaging with countries in Southeast Asia, thereby promoting the application of Dutch delta management as global water solutions (NWP, 2014). In 2015, the Dutch government published the policy report, 'International Water Ambition', which contains various strategies to expand the opportunities for Dutch water experts, consultants, diplomats, and policy makers to engage in flood resilience projects in other countries (Ministry of Infrastructure and Water Management, 2016). Already in 2013, the Netherlands had supported the development of the Mekong Delta Plan (MDP), which was presented as the strategic recommendation for delta management policy in Vietnam (NWP, 2014). In 2018, the Netherlands initiated the Water as Leverage for Resilient Cities Asia (WaL) program which aims to enable local capacity building for the co-creation of urban flood resilience solutions (Dutch Special Envoy for International Affairs et al., 2019). These international programs are part of a global resilience movement to help cities and countries to reduce flood risks and other water-related challenges. This movement is aligned with pursuing the UN Sustainable Development Goals, in particular, Goal 11 to "make cities and human settlements inclusive, safe, resilient and sustainable: by reducing exposure and

vulnerability of the poor to disasters or building resilient infrastructure” (United Nations, 2020). However, the challenge of how local stakeholders can ensure inclusive and also long-term outcomes of flood resilience planning, and how international resilience programs can contribute to this goal, remains unresolved.

Despite the promotion and adoption of the resilience concept globally, it remains an abstract term with diverse interpretations across academic literature and policy domains. The fuzziness of the concept is comparable to ‘sustainability’ (Davoudi et al., 2012; Lu & Stead, 2013; Porter & de Roo, 2012). In urban policy, resilience can generally be defined as the capacity of a city to resist or withstand shocks and disturbances as well as the ability to adapt and transform to changing socio-ecological conditions (Davoudi et al., 2012; Lu & Stead, 2013; Restemeyer et al., 2015). Currently, there is a growing interest for cities to become more resilient in order to anticipate and prepare for the ongoing and future environmental challenges. The concept of resilience can be seen in notions such as ‘urban resilience’, ‘the flood resilient city’, and the ‘climate resilient city’, and often relates to the various capacities and strategies to cope with current and future impacts from flood and climate risks (Coaffee, 2013; Davoudi et al., 2012; Lu & Stead, 2013; Spaans & Waterhout, 2017; Zevenbergen et al., 2020). The resilience concept is also used in various planning models to reduce urban flood risks, such as ‘Rainproof cities’, ‘Sponge cities’, and ‘Water sensitive cities’ (Brown et al., 2018; Dai et al., 2017; Sörensen et al., 2016; Wesselink, 2016; Wong & Brown, 2009). Nevertheless, local interpretation and a shared understanding of the resilience concept are still required in local planning processes. Some authors therefore argue that greater attention is needed to the political process involving the interpretation of resilience in planning practice (Davoudi, 2018; Driessen et al., 2018; Lu & Stead, 2013). This is especially relevant to the context of Southeast Asia, as resilience policy should aim to reduce flood risk among the most vulnerable groups in society. It is important that the societal and inclusive dimensions are central in resilience policy development and implementation. This study therefore specifically addresses the political and inclusive dimensions of flood resilience planning and explores the role and involvement of international resilience programs in enabling this process.

Chapter 1 Introduction

1.2 A critical perspective: inclusive flood resilience

Previous literature highlights three different interpretations of resilience in flood risk management. The first, and in practice often still dominant resilience interpretation, also in Southeast Asia, is based on ‘engineering resilience’ (Davoudi et al., 2012; Holling, 1973). This interpretation emphasizes the robustness and resistance of flood risk management systems, especially the enforcement of flood safety standards and the strengthening of structural flood protection measures (Liao, 2012; Restemeyer et al., 2015; Zevenbergen et al., 2020). In recent years, flood risk management studies have proposed the integration of spatial and ecological considerations in flood risk management, emphasizing the importance of adaptability – this has been coined as the ‘ecological resilience’ interpretation (Brown et al., 2018; Dai et al., 2018b; Liao, 2012). In this interpretation, flood risk management promotes the importance of an integrated approach to diversify various choices and options in flood risk management rather than relying only on technical flood protection strategies (Driessen et al., 2018; Liao, 2012; Molenveld & van Buuren, 2019). Another interpretation, ‘evolutionary resilience’, has recently received more attention in academic literature (Davoudi, 2018; Few et al., 2017b; White & O'Hare, 2014; Zevenbergen et al., 2020). Evolutionary resilience not only includes robustness and adaptability but is also strongly tied to transformative change in institutional conditions and the socioecological system. This interpretation highlights institutional transformation based on multi-disciplinary learning, coalition building, local leadership, and capacity building (Driessen et al., 2016; Few et al., 2017a; Hegger et al., 2016). Moreover, this interpretation stresses the importance of collaboration among stakeholders for policy adjustment and long-term institutional change.

However, in the ongoing academic debate these three resilience interpretations are being criticized (see e.g. Davoudi, 2018; Furedi, 2008; Kaika, 2017; Mullenite, 2016; White & O'Hare, 2014). Firstly, there is little attention paid to the political and power dimensions of the interpretation of resilience in actual planning practice. Several authors argue that the focus on only reducing urban flood risk could neglect the social justice and the interests of disadvantaged communities (Alexander et al., 2016; Davoudi, 2018; Kaika, 2017; Marks & Elinoff, 2019; White & O'Hare, 2014). Therefore, there is a need for examining the political and societal dimensions of resilience policy making, especially the interests among local communities from the development and implementation of flood resilience strategies. Secondly, the resilience concept remains difficult to operationalize in flood risk management

(Gersonius et al., 2016; Zevenbergen et al., 2008). Recent flood resilience policies often promote a holistic and integrated approach to flood risk. In practice, however, the implementation of integrated flood resilience strategies is challenging. The adoption of resilience policy, therefore, tends to prioritize technical and managerial solutions based on engineering resilience instead of promoting diverse and holistic strategies (Hegger et al., 2016; Lu & Stead, 2013; Restemeyer et al., 2015). Thirdly, there is still a limited understanding of the process to enable flood resilience planning. The focus often is mainly on defining different types of flood risk management strategies, such as flood prevention, preparedness, response, and adaptation. However, the distribution of roles and responsibilities to achieve flood resilience between government actors and local communities is often unclear (Hutter & Kuhlicke, 2013; White & O'Hare, 2014). A greater understanding of the planning process is needed for enabling the development and implementation of inclusive, proactive and integrated flood resilience strategies (Marks & Elinoff, 2019; Mullenite, 2016; White & O'Hare, 2014). For this reason, research focusing on enabling institutional conditions to achieve flood resilience in practice is still required.

The integration of a critical perspective in flood resilience research could address these three criticisms of resilience policy development and implementation, by highlighting the need for inclusiveness and long-term policy change. Building in particular on the evolutionary resilience interpretation, such a perspective firstly underlines the importance of an inclusive process for open and collaborative engagement in flood resilience planning, focusing on the integration of insights and ideas from both 'insiders' (e.g. policy makers, experts, and consultants) and 'outsiders' (the broader network of stakeholders, non-governmental organizations (NGOs), and local communities). This relates to the risk that the interpretation of resilience in practice could exclude the engagement of local stakeholders, especially the vulnerable communities, when defining flood problems and developing solutions (White & O'Hare, 2014). Secondly, a critical perspective could be used to examine the negotiation of meaning and the interpretation of resilience in local planning practice. Studies on the role of language and meaning-making, especially in the context of how developing countries and cities try to improve their flood resilience planning process, remain scarce. A critical perspective emphasizes a broad interpretation of resilience to promote diverse flood risk management strategies including structural flood protection, raising flood awareness, spatial adaptation solutions, and emergency response and recovery. Planning for flood resilience requires shared understanding among policy actors and stakeholders to envision new solutions and practices (Gersonius et al., 2016; Rosenzweig et al., 2018). Finally, a critical perspective also

Chapter 1 Introduction

addresses local enabling institutional design for facilitating resilience policy development and implementation. Achieving flood resilience requires the transformation of existing institutional conditions to cope with complex flood and environmental challenges. Such institutional transformation concerns, for instance, the capacities of local actors to introduce flood resilience strategies in formal planning contexts (Rosenzweig et al., 2018). To conclude, introducing a critical perspective to flood resilience planning could add more insights to the debate in the literature on essential institutional conditions and enabling institutional capacities to strive for long-term policy change for facilitating inclusive flood resilience planning in the local context (Gersonius et al., 2016; Pahl-Wostl et al., 2013).

1.3 Flood resilience in global water policy translation

As was discussed in the introductory section, many international resilience programs aim to improve flood resilience planning in developing countries. Various studies highlight the different ways in which these programs promote local resilience policy formulation and resilience project implementation (Brown et al., 2012; Johnson & Blackburn, 2014; Spaans & Waterhout, 2017). These programs, for instance, encourage the use of resilience frameworks, guidelines, and building blocks. These include the City's Resilience Framework adopted in the 100RC Programme, the Ten Essentials for Making Cities Resilient by the UNISDR's Making Cities Resilient program, and the World Bank's Adaptation Principles for Designing Strategies for Climate Adaptation and Resilience. By promoting the use of these resilience frameworks in the local context, international resilience programs also create opportunities for enabling learning and collaboration between various policy makers, experts, consultants, and civil society organizations (Brown et al., 2012). The Netherlands is particularly active in stimulating this process, for instance, by conveying lessons from their 'Dutch Delta Approach' in other developed and developing countries (Minkman & van Buuren, 2019; Zevenbergen et al., 2012). The Netherlands also led the creation of the Global Delta Coalition and the Global Center on Adaptation, which both contribute to cross-border learning of resilience solutions and water policy ideas.

Understanding local flood resilience building in the context of developing countries requires in-depth knowledge of the global resilience movement, particularly how international resilience programs promote local resilience policy

development and implementation. Across the world, global water policy models and concepts such as Integrated Water Resources Management (Vinke-de Kruijf & Pahl-Wostl, 2016), Integrated River Basin Management (Gupta & van der Zaag, 2008), and Sustainable Urban Drainage Systems (Mukhtarov et al., 2019), have been mobilized and adopted particularly in the developing countries. Regarding this cross-border learning and communication, policy translation offers an analytical approach that emphasizes language use among these policy actors involved in the construction, interpretation, and mobilization of these global water policy ideas (McCann, 2008; Mukhtarov, 2014; Stone, 2012). The policy translation approach therefore focuses on how policy ideas are communicated and also highlights the strategic and political dimensions of cross-border learning and policy making. Various policy-translation scholars recognize the use of an interpretative approach as it is closely related to the social-constructionist perspective to study policy translation (Lendvai & Stubbs, 2009). So far, there has been given limited attention to the application of an interpretative approach such as framing in studying cross-border learning and water policy translation cases.

A framing approach could help to analyze strategic interests among policy actors in communicating and translating the policy solutions in different places (Stone, 2004). Although its origins lie in fields such as cognitive psychology, the approach has been widely adopted in the fields of environmental policy, water management, and flood risk management research (Benford & Snow, 2000; Fischer, 2003; Snow et al., 2014; Van Den Brink, 2009; Van Hulst & Yanow, 2016). Framing provides an analytical approach to studying water policy translation, especially for exploring the construction and negotiation of meaning of water policy ideas as they travel from one context to another. By adopting a framing approach, it is possible to investigate how water policy makers in global resilience policy platforms perceive climate and water problems and present particular policy solutions – which could be coined as international water policy ideas. It is also possible to analyze the interpretation and translation of these ideas in local planning practices. As such, a framing approach could be an important element of the critical perspective to flood resilience research.

Despite the opportunities to learn from international water policy ideas, the interpretation and implementation of the flood resilience concept and other international water policy ideas in the local context often encounters various institutional challenges (Friend et al., 2014). Based on this, further insights are needed to explore the institutional conditions that enable the building of local institutional

Chapter 1 Introduction

capacities among relevant governments and stakeholders to adopt flood resilience solutions to address local water challenges.

1.4 Institutional approaches for inclusive flood resilience planning

Many studies have revealed that flood resilience strategies are difficult to implement in practice (Driessen et al., 2018; Gersonius et al., 2015; Liao, 2012; Molenveld & van Buuren, 2019; Zevenbergen et al., 2008). Despite the increased interest in research and practice to introduce proactive and integrated flood adaptation strategies, existing institutional conditions tend to limit the capacities of local policy actors and possibilities to transform these strategies into project implementation. In Southeast Asia, the prevailing institutional structure is conditioned for investment in and reinforcement of structural flood protection, while other strategies to reduce flood risks are struggling to be embedded into the planning process (Handayani et al., 2019; Marks & Elinoff, 2019; Saito, 2014). While structural flood protection remains important, incorporating other integrated and holistic approaches, such as spatial adaptation measures, is essential to anticipate and respond to climate-induced and water-related challenges timely and inclusively (Dai et al., 2018a; Handayani et al., 2019; Lebel et al., 2006; Liao, 2012). An in-depth investigation of essential local institutional capacities and enabling institutional conditions is therefore needed to understand the institutional transformation required for introducing integrated and inclusive flood resilience strategies.

Regarding the local institutional capacities, the roles of local governments and stakeholders for the realization of more proactive and inclusive flood resilience strategies are being increasingly recognized (Brown et al., 2018; Liao, 2012; Lu & Stead, 2013). Dai et al. (2018b), for instance, highlight the role of municipalities in initiating climate-adaptive urban planning campaigns. Various international resilience programs also recognize the role of city governments, universities, and local NGO networks (Brown et al., 2012; Johnson & Blackburn, 2014; Spaans & Waterhout, 2017). Programs such as United Cities and Local Governments, Global Resilience Networks, and 100 Resilient Cities were created to support the learning and collaboration between local policy makers and local experts from cities around the world. However, there is still limited research on the essential capacities of local governments and other actors for planning towards inclusive flood resilience, in relation to their engagement in these international resilience programs. Insights from

institutional capacity building literature could be relevant to analyze the collaboration between local policy actors to increase the quality of places – in this context to enable urban flood resilience (Healey, 1998, 2003; Khakee, 2010). Booher and Innes (2002) argue that institutional capacity building is essential to create a common understanding and shared solutions to environmental changes. They stipulate that “in the process, innovations and novel responses to environmental stresses can emerge” (Booher & Innes, 2002, p. 225). According to Healey (1998) and Cars et al. (2017), creating and mobilizing intellectual capital, social capital, and political capital is crucial for the building of local institutional capacity. These capitals offer the conceptual device for examining the required local institutional capacities for the development and implementation of inclusive flood strategies.

With regard to the enabling institutional conditions, there is a need to determine the institutional design that could facilitate the institutional transformation that is required for inclusive flood resilience planning. To this end, the Institutional Analysis and Development (IAD) framework offers a systematic approach for analyzing the institutional arrangement of international resilience programs. The framework provides an analytical tool to examine specific actions, based on a set of rules, that actors must, must not, or may take to directly and indirectly influence policy outcomes (Ostrom, 1999; Ostrom & Basurto, 2010). Ostrom (1999) defines different types of rules that guide the interaction between policy actors to achieve common policy goals, such as the sustainable use of natural resources. According to Ostrom and Basurto (2010), “rules may be crafted in any of a wide diversity of collective-choice or constitutional-choice arenas in local, regional, national, or international domains” (p. 322). A great number of institutional analysis studies have used Ostrom’s IAD framework to examine integrated approaches, collaborative planning, and inclusive decision-making processes (Andersson, 2009; Molenveld & van Buuren, 2019; van Geet et al., 2019; Spijkerboer et al., 2019; Vitale et al., 2020). The framework was also used to analyze the engagement of actors in international development assistance programs (Ostrom et al., 2002). However, there has not yet been a study using the framework to specifically analyze the institutional conditions promoted by international resilience programs, and how these conditions could induce the required institutional transformation for inclusive flood resilience planning. Overall, a more in-depth understanding of both local institutional capacity building and essential institutional conditions is still needed. This enabling institutional design dimension is an important part of the developed critical perspective to explore the planning process for reducing flood risks, especially among the vulnerable communities in developing countries.

Chapter 1 Introduction

1.5 Research aim and questions

The overall research aim of this study is, therefore, to explore and understand institutional transformation for inclusive flood resilience planning in urbanized regions in Southeast Asia, and how international resilience programs can contribute to this transformation. Findings from this study could provide more insights into inclusive engagement between local, national, and international policy actors in the formulation and implementation of flood resilience strategies in Southeast Asia. Subsequently, recommendations for inclusive flood resilience planning are proposed for cities, countries, and international resilience programs. This overall research aim is translated into the following main research question of this study:

How can institutional transformation for inclusive flood resilience planning in urbanized regions in Southeast Asia be enabled, and how can international resilience programs contribute to this transformation?

This research question is divided into four main sub research-questions that structure the subsequent chapters of this thesis (as visualized in Figure 1.1):

1. Conceptualization of inclusive flood resilience planning (Chapter 2)
How can we understand resilience policy development for addressing flood vulnerabilities in a city in a developing country?
2. Water policy translation from a developed to a developing country (Chapter 3)
How do international water policy ideas travel across borders and how can these ideas contribute to the development of water solutions to address local water challenges?
3. Local institutional capacity building for flood adaptation (Chapter 4)
How can international resilience programs enable the building of local institutional capacities for the development and implementation of flood adaptation strategies?

4. Institutional conditions for enabling inclusive flood resilience planning (Chapter 5)

Which institutional conditions promote the development and implementation of inclusive flood resilience strategies by international resilience programs?

To answer these sub research-questions, this study began with the investigation of the flood risk management policy initiatives that were implemented following the 2011 Thailand Floods. The resilience policy initiative in Bangkok was discovered during this exploration, as was the lack of inclusive community engagement in this city's resilience policy making. This led to the development of a critical perspective for exploring the power dimension and the political process in flood resilience planning in this study. Taking the evolutionary resilience interpretation as a starting point, the critical perspective developed in this study emphasizes the importance of an inclusive process, the role of language and meaning-making in the formulation of resilience strategies, and stresses the development of enabling institutional capacities and conditions for inclusive flood resilience planning.

This study is divided into two parts. The first part focuses on the interpretation of global water policy ideas and the resilience concept in local planning practices. To this end, a framing approach will be used to analyze the development and implementation of urban flood resilience policies in terms of strategy, process, and anticipated outcomes. Moreover, it is evidenced that the Dutch government has been actively promoting a flood resilience approach and water policy solutions in many countries, including in Southeast Asia. This process often involves the transfer of knowledge by experts and international resilience programs. Consequently, this research focuses on the translation of water policy ideas from the Netherlands to Southeast Asia. As water translation is in essence a meaning-making process, again a framing perspective will be employed to analyze how meanings are created and adopted across borders to address local water challenges. For the second part, the focus of this study shifts to the required enabling institutional design for inclusive flood resilience planning, and how international resilience programs could help to develop more inclusive and integrated flood resilience strategies. On the one hand, the focus is on local institutional capacity building for developing and implementing holistic and integrated flood resilience strategies. On the other hand, this study focuses on the essential institutional conditions for inclusive flood resilience planning. This could provide a better understanding of cross-border learning and the

Chapter 1 Introduction

role of international resilience programs in these processes, and could help to draw lessons and recommendations related to enabling institutional design to reduce flood risks in the context of developing countries, such as Thailand, Indonesia, and Vietnam.

The design of this research is illustrated in Figure 1.1. This is a schematic visualization, structuring the sub research-questions and chapters of this study. Figure 1.1 aims to illustrate the connection between the different building blocks rather than attempting to demonstrate any causal relationships between various concepts and notions.

Water and resilience concepts

Figure 1.1: Schematic visualization of the structure of this research.

1.6 Relevance of this research

1.6.1 Scientific relevance

By developing a critical perspective to study urban flood resilience planning, this study aspires to contribute to flood resilience research in multiple ways. Firstly, a critical perspective was used to further theorize the power dimension and the political process in flood resilience planning, by paying specific attention to the politics of language in meaning-making, and by analyzing the interpretation of flood resilience in local planning practices. This study proposes the analysis of resilience policy development and implementation by focusing on strategy formulation, the planning process, and particularly also the anticipated outcomes in urban flood risk management. Secondly, as part of the developed critical perspective, this study sets out to introduce the use of framing as an analytical approach to examine the construction, interpretation, and translation of global water policy ideas and resilience concepts. The use of such an interpretative approach is relevant to study the role of language and its implications in the planning process (Van Den Brink, 2009). This approach fits well with a critical perspective as it helps to examine the negotiation of meaning between policy actors who are engaging in the global policy platforms and international resilience programs (Lendvai & Stubbs, 2009; Mukhtarov & Daniell, 2014).

Lastly, this study explores the enabling institutional design for inclusive flood resilience planning as part of this critical perspective. To this end, this study integrated insights from institutional literature – institutional capacity building (Andersson, 2009; Booher & Innes, 2002; Healey, 1998) and the IAD framework (Ostrom, 2011) in particular – to examine the strengths and weaknesses of international resilience programs in enabling institutional transformation. This study explores the contributions and institutional arrangements of international resilience programs for improving local, and inclusive, flood resilience planning. By doing so, this study aims to add knowledge about essential capacities and conditions for institutional transformation towards inclusive flood resilience. Such an institutional analysis could also contribute to academic discussions on the engagement of local actors in international resilience programs for addressing local flood risks and water-related challenges.

Chapter 1 Introduction

1.6.2 Societal relevance

This study focuses on various flood resilience planning approaches to reduce flood risks in urbanized regions in Southeast Asia. These regions have been experiencing major impacts due to climatic and water-related challenges. The policy makers in these developing countries are encouraged to adopt resilience concepts, frameworks, and guidelines into their planning practices (Handayani et al., 2019; Weger, 2019). However, despite the increasing social and economic impacts resulting from flooding, the urgency to invest and implement integrated and long-term flood resilience strategies has not yet been addressed. Firstly, this study therefore aims to provide a critical reflection on the local interpretation of water policy ideas and the resilience concept, by analyzing the global resilience movement, such as international resilience programs and cross-border learning phenomena (Spaans & Waterhout, 2017). While international resilience programs are important for creating opportunities for initiating and enhancing local flood resilience planning processes (Reed et al., 2014), it is a necessity to examine the implications of the related meaning-making processes in the formulation of inclusive flood resilience strategies and in the development of enabling institutional conditions for flood resilience planning. Secondly, this study highlights the inclusive dimension in flood resilience planning processes, especially the need for reducing flood vulnerabilities among disadvantaged communities. To highlight the inclusive dimension in urban flood resilience policies, this study developed a critical perspective to integrate local voices, interests, and needs in making and implementing urban flood resilience solutions, and how international resilience programs could contribute to this process. Lastly, this study aspires to demonstrate the importance of a local enabling institutional environment for learning, exploration, and experimentation with urban flood resilience solutions. Local governments and local stakeholders have important roles in initiating and sustaining flood resilience planning efforts (Dai et al., 2018; Driessen et al., 2018). These actors, however, often lack the capacities and resources for facilitating inclusive flood resilience planning (Saito, 2014). The insights on essential institutional capacities and enabling conditions gained in this study could provide lessons for local actors to formulate and implement inclusive flood resilience strategies by transforming existing water planning practices to respond to current and future environmental challenges.

1.7 Research methodology

1.7.1 Qualitative research strategy

The design of this study is based on a qualitative approach. The strength of qualitative research is the ability it offers to explore the interaction between actors and their perceptions in the real-world context (Yin, 2009). Instead of providing a general explanation to theory and practice, such a qualitative approach focuses on making sense of the complexity and actual situation and to address how questions in each specific planning context (Hennink et al., 2020). This study adopted a qualitative case study research approach to obtain an in-depth understanding of context-specific flood resilience planning processes. The main aim of this case study research is to provide specific and detailed findings based on insights into and perspectives of research participants, which include policy actors, experts and other stakeholders involved (Babbie, 2020; Yin, 2009). The analysis of the cases is therefore mainly based on the thick description of qualitative data from policy documents, in-depth interviews, focus-group discussions, and field observations (Babbie, 2020; Hennink et al., 2020). The use of case study research enables researchers to capture and reflect the interpretations of and perceptions among policy actors and stakeholders towards different policy ideas, concepts, and solutions (Fischer, 2003; Yin, 2009). For this research, the use of the case study approach is also relevant to examine how various actors engage in the meaning-making and interpretation of the resilience concept and water policy ideas for the development of local resilience strategies and water policy solutions.

1.7.2 Empirical cases

This research consists of two main parts: the first part is the analysis of the interpretation of global water policy ideas and the resilience concept in local planning practices, and the second part concerns the required enabling institutional design for inclusive flood resilience planning, based on institutional capacity building and enabling institutional conditions. Three cases are selected for this research: (1) the formulation of the Bangkok Resilience Strategy, (2) the making of the Mekong Delta Plan (MDP) in Vietnam, and (3) the Water as Leverage for Resilient Cities Asia (WaL) program in Semarang, Indonesia.

Chapter 1 Introduction

The selection of these three cases is based on their similarities in urban and coastal flood risks and differences in geographical characteristics and planning approaches for flood resilience. Regarding the similarities, firstly, all cases are located in coastal and deltaic areas (see Figure 1.2 for an overview of the location of each case). These areas are highly likely to be exposed to potential impacts of flood and climate risks due to sea-level rise, pressurized by the intensification of land subsidence and variation of rainfall. Secondly, these cases concern a high number of low-income vulnerable communities located in low-lying flood vulnerable areas. As previously stated, these vulnerable communities have insufficient resources and capacities to cope with climate and environmental challenges, and at the same time have limited access to physical infrastructure and government support. Lastly, these coastal and deltaic areas experience increasing flood risk due to socio-economic conditions in the context of rapid urbanization and economic growth. The policy makers in these places are struggling to strike a balance between the prioritization of economic development and urgency in planning for reducing flood and climate risks (Friend et al., 2014).

The three cases, however, are different from each other in terms of their geographical characteristics and planning approaches to flood resilience. By geographical differences, this study focuses on (1) megacity Bangkok in Thailand, (2) an urban delta region, the Vietnamese Mekong Delta, and (3) a rapidly growing city, namely Semarang in Indonesia. There are different resilience planning approaches in each case. In the case of Bangkok, the city has participated in the 100 Resilient Cities program since 2017, which enabled the use and interpretation of the resilience concept in the development and implementation of the Bangkok Resilience Strategy. For the Vietnamese Mekong Delta case, the analysis is based on the MDP 2013, which is a strategic recommendation for addressing local water challenges based on the translation of the Dutch delta management approach. Lastly, in the Semarang case, the city participated in the WaL program, which was initiated by the Dutch government. The focus of this case is on the design thinking and related creative planning process (i.e. via a design competition, design-based research, and co-creation) as part of the adopted 'resilience by design' approach. Despite the various planning approaches for inclusive flood resilience, all three cases demonstrate the engagement of policy actors in global resilience platforms for introducing policy concepts, ideas, and lessons for enabling inclusive flood resilience planning in their local planning context. In addition, the MDP and WaL cases were both initiated by the Netherlands as part of its international mobilization of the Dutch water policy.

Brief overviews of these cases are presented in the following paragraphs (see also Figure 1.2).

The first case study is the formulation of the resilience strategy in Bangkok. Bangkok was in the first wave of 33 cities to join the 100RC Programme (Bangkok Metropolitan Administration, 2017). The 100RC Programme provided several incentives for the participating cities, such as the funding of the Chief Resilience Officer position, supporting the development of a city's resilience strategy and engaging the city policy makers in 100RC global networks (Spaans & Waterhout, 2017). Bangkok's Chief Resilience Officer and the Department of Environment, under the Bangkok Metropolitan Administration, coordinated various activities under the 100RC Programme including the development and implementation of the Bangkok Resilience Strategy. Bangkok, a city with a population of 11 million, experienced severe flood events in the past, especially in 1983, 1985, and 2011 (Nair et al., 2014). Located in low-lying areas on the Chao Phraya River Basin, Bangkok's flood risks are due to the combination of heavy rainfalls, river runoff, and tidal flows (Patankar et al., 2013). The full capacities of the drainage system are limited. The deteriorated urban drainage system could not cope with heavy rainfall especially during the monsoon period (Nair et al., 2014). The development of the resilience strategy aims to help the city to become more resilient to flood risks and other related economic, social, and physical shocks and stresses. The strategy covers the following three strategic action areas: (1) increasing quality of life, (2) reducing risk and increasing adaptation, and (3) driving a strong and competitive economy. The planning for flood resilience primarily concerns strategic action area 2 (Bangkok Metropolitan Administration, 2017).

The second case study is the translation of the international water policy ideas in the making of the MDP 2013 in Vietnam. The climate vulnerabilities of the Vietnamese Mekong delta region are due to extreme climate events, sea-level rise, and hydrological development in the upper part of the river. The Vietnamese Mekong delta region experiences intensifying salination and saltwater intrusion. This climate risk is a major concern for the country's agricultural sector, such as the negative impacts it has on rice production. The region is also facing coastal erosion and intense land subsidence (Hoa et al., 2008). The projected impacts from climate change therefore pose a serious threat to the national income from rice export and production and sources of food security (Hak et al., 2016). The MDP 2013 recognizes intensifying climate impacts and, by incorporating scenario planning, proposes several strategic recommendations for resilient delta management and thus for transforming Vietnamese delta management and agriculture policy. These strategic

Chapter 1 Introduction

recommendations promote specialized and high-value agricultural sectors with less reliance on water resources. The development of the plan was led by Dutch consultants and Vietnamese academics and consultants, with support from the government of the Netherlands and the government of Vietnam (Government of Vietnam, 2017).

The third case study is the WaL program in Semarang, Indonesia. Semarang is one of the fast-growing metropolitan cities in Indonesia with a population of 1.5 million. It is the largest and the capital city of Central Java Province. Similar to Bangkok, Jakarta, and other Southeast Asian coastal cities, it is a sinking city due to its geographical characteristics and location that is pressurized by urban growth and rising sea levels (Harwitasari & van Ast, 2011). Semarang has been actively engaged in international resilience programs; the city was part of the ACCCRN program and later joined the 100RC Programme (Handayani et al., 2019; Reed et al., 2015). Recently, the city participated in the WaL program, which was initiated by the Dutch government in collaboration with several international development organizations and international financial institutions. The WaL program was started in three cities in Asia, namely Khulna in Bangladesh, Chennai in India, and Semarang in Indonesia, by introducing a 'resilience by design' process for the co-creation, formulation, and implementation of climate and flood resilience solutions (Government of the Netherlands, 2019). For the WaL program in Semarang, the two selected multidisciplinary design teams, 'One Semarang' and 'Cascading Semarang', engaged with local government officials, academics, and NGOs in this design and co-creation of the new strategies for improving Semarang's flood and water resilience (Water as Leverage, 2019).

1.7.3 Data collection methods

In this research, a mixed-method data collection approach was used. The combination of different methods for data collection was employed to provide in-depth findings on cases and to enhance the credibility and validity of the case analysis (Yin, 2009). The methods include the collection and (1) analysis of policy documents, (2) in-depth interviews with policy makers, experts and other key stakeholders, (3) participatory and field observations, and (4) expert focus-group discussions. These methods were used to triangulate the findings and to reconstruct the negotiation of meaning and the interpretation of flood resilience in local planning practices. Each data collection method is explained below.

Figure 1.2: Locations of the three case studies: (1) Bangkok, Thailand, (2) Vietnamese Mekong Delta and (3) Semarang, Indonesia.

Firstly, the document analysis provided general ideas and background information on the cases. Multiple key policy documents were used for the analysis of each case study (see for an overview Appendix A). The key policy documents comprised official reports, government regulations, guidelines, official plans, and strategies. These primary documents were used to collect data on the resilience planning process, including the description and explanation of flood and water problems and the development of resilience strategies, solutions, and initiatives. In addition, this study also used secondary documents including existing studies and research reports for analyzing the three cases. These documents helped to gain in-depth understanding of the background of the cases and to set-up the sub research-questions and the analytical angles of each case.

Secondly, in-depth interviews were conducted for a more detailed and focused analysis of the empirical cases after the document analysis. A total of 85 interviews for this study were held with a wide range of governmental practitioners, consultants, NGOs, academics, community members, and journalists. This study used two rounds of interviews per case. The first round of interviews was aimed at better understanding key policy actors, experts, and local stakeholders. The second

Chapter 1 Introduction

round of interviews was more focused on the broader planning context and for monitoring the planning process and the development of strategies and proposals over time. A selection of the interviewees was interviewed for both rounds for an update and follow-up on the flood resilience planning process and program activities for local resilience policy development (see Table 1.1). The interviewed respondents included the experts and organizing team members of the international resilience programs and local actors such as policy officials, consultants, and experts, and other actors from the broader network of stakeholders including NGOs, academics, and local communities. This interview strategy combined insights and perspectives from both ‘insiders’ (policy makers and experts) and ‘outsiders’ (broader stakeholders including local communities, local NGOs, local academics and local journalists). To integrate these diverse perspectives and the voices of key local stakeholders, interview respondents were not only from the donor country (i.e. the Netherlands) or international development organizations and aid agencies, but included also both ‘insiders’ and ‘outsiders’ from local beneficiary countries – including Thailand, Vietnam, and Indonesia (see for an overview Appendix B). The interviews were conducted mainly in English, Thai, and Bahasa Indonesia. The interviews conducted in Bahasa Indonesia were assisted in facilitation and translation by a local research assistance team from the urban and regional planning department of the local university in Semarang, Diponegoro University.

Thirdly, participatory observations were useful to triangulate the results and preliminary findings of this study. The participatory observation method was used for the first and third case studies, namely the case of the Bangkok Resilience Strategy and the case of the WaL program in Semarang. This method involved attending policy meetings and program meetings held by policy makers and stakeholders from academic institutions, international organizations, and civil society organizations. The level of participatory observation in each case is considered moderate (Hennink et al., 2020). The participants acknowledged the presence of myself as a researcher but I was mainly observing and taking notes and did not participate in any formal conversations. In the case of Bangkok, the participatory observations involved observing the UNDP Regional Consultation Meeting on Strengthening Disaster Risk Management in the Budget Process – lessons from Public Expenditure and Institutional Reviews, which took place in February 2017. The meeting provided insights into the current policy efforts to increase disaster resilience financing in various governmental agencies. In the case of Semarang, this method was conducted during the Water as Leverage International Seminar in March 2019, several WaL program meetings, a studio workshop in Amsterdam in June 2019, and multiple local

community discussions. In addition, several field visits were conducted together with the multidisciplinary design team in Semarang to observe sites and locations chosen for the design and development of the flood resilience proposals. These activities provided information and context about current and ongoing activities of the program and for exploring the dynamic interaction between the various actors involved and among the members of the multidisciplinary design teams, and for better understanding local concerns and problems among community members.

Fourthly and lastly, two focus-group discussions were organized during this research trajectory with academics and researchers at consultancies. The aim was to better understand the context of the cases and reflect on preliminary findings and observations based on the fieldworks of this study. Both sessions were hosted by the research institutes with academics and researchers partaking to share their knowledge and understanding of the cases. The sessions began by me, the researcher, giving a presentation about the set-up of the research, the theoretical background, the research aims and questions, and the preliminary findings. Participants were then allowed to discuss and exchange their thoughts on the indicated topic and case studies. The first discussion session was in Bangkok, where information about the problems and challenges of flood risk management and water governance in Bangkok and Thailand was divulged. Another expert focus-group discussion was organized in Yogyakarta, Indonesia, to gain insights into previous and ongoing research about local flood vulnerabilities in Semarang.

All the focus-group sessions, meeting sessions, and participatory observations were audio-recorded and subsequently summarized for the preliminary findings. The combination of these data collection methods allows this study to understand the different planning approaches and processes for flood resilience in the Southeast Asian context. The overall number of each data collection method per case is presented in Table 1.1 and detailed information about the set-up and arrangement of these methods is outlined in the appendices.

1.7.4 Framing and data analysis

The reconstruction of the negotiation of meaning and the interpretation of the resilience concept and global water policy ideas is central in this study and the critical perspective on flood resilience planning it proposes. This study adopted framing as an analytical approach to address in particular sub-questions 1 and 2. Framing essentially entails meaning-making by highlighting certain aspects of perceived

Chapter 1 Introduction

reality, while simultaneously downplaying other aspects (Entman, 1993). The resulting frames function as ‘normative-prescriptive stories’ (Rein & Laws, 1993), that is, guides for doing and acting (Van Den Brink, 2009). Adopting a framing approach and reconstructing framing processes and the resulting frames enabled the researcher to explore the strategic and political dimensions in flood resilience planning processes, by highlighting texts and quotes, giving voices to policy actors and other stakeholders involved (Fischer, 2003). Framing, therefore, provides an essential analytical approach to understand how the flood resilience concept and global water policy ideas are interpreted in local planning practice and the implementation process. In this study, a framing approach was used firstly to analyze how actors, both insiders and outsiders, make sense of ambiguous and complex situations, such as global climate risk and local water challenges. Secondly, this approach was used to explore how certain solutions, concepts, and ideas are promoted, constructed, and guided the formulation of strategic recommendations in the local planning practice.

Table 1.1: Overview of data collection methods used in each case.

Methods	Case 1: Bangkok Resilience Strategy	Case 2: Mekong Delta Plan	Case 3: Water as Leverage program	Total (n)
1.Document analysis	Key policy documents: 4	Key policy documents: 13	Key policy documents: 16	33
2.In-depth interviews	First round: - Government: 10 - Consultants: 1 - Academics: 3 - NGO: 1 Second round: - Government: 2 - Local NGO: 5	First round: - Government: 5 - Consultant: 2 - Academic: 1 Second round: - Government: 3 - Consultant: 6 - Academic: 5 - Journalist: 1	First round: - Government: 5 - Consultants: 4 - Local academics: 2 - NGOs: 9 - Donors: 2 - Local journalist: 1 Second round: - Government: 1 - Consultants: 3	85

Methods	Case 1: Bangkok Resilience Strategy	Case 2: Mekong Delta Plan	Case 3: Water as Leverage program	Total (n)
	- Local community: 4 - Local journalist: 1		- Local academic: 1 - Donor: 2	
3.Participatory observations	Meeting: 1	-	Meetings: 3 Survey of proposal locations: 1 Community discussions: 3	8
4.Expert focus-group discussion	Discussion: 1	-	Discussion: 1	2

The data analysis involved the use of the computer software Atlas.ti (version 8). This software was used to create multiple coding schemes, visualize coding networks, and for coding all the documents and interviews. This study used both deductive and inductive coding techniques. This study used deductive coding mainly to address the sub research-questions 1, 3 and 4, for which coding schemes were developed that were based on the conceptual and analytical frameworks in Chapters 2, 4 and 5. To address sub research question 2, this study used the combination of deductive coding and inductive coding in Chapter 3. In this chapter, inductive coding was used to reconstruct the framing processes and the resulting policy frames and to constantly reinterpretate the findings to refine and adjust the conceptual framework. Both techniques helped to enrich the main findings and to (re)interpret the key underlying meaning of the data for this study. Appendix E provides the visualization of the code networks used in this study.

Chapter 1 Introduction

1.7.5 Reflection on positionality, trust-worthiness and ethical consideration

It is essential for qualitative researchers to ensure critical reflexivity, credibility, and trustworthiness of the data interpretations (Cope, 2014; Hennink et al., 2020). This section therefore begins with a reflection on the positionality of the researcher. As a researcher who grew up and worked in Southeast Asia and studied in the Netherlands, my familiarity with both contexts helped me to grasp the content of and rationales behind resilience planning efforts in each case and the environment of international collaboration. Understanding and awareness of the planning culture, flood vulnerabilities, and interrelated urban, social, and economic challenges, particular to the Southeast Asian context, are beneficial for this research. My experience in working for international development organizations related to flood preparedness and disaster management was helpful to understand the cultural context, the nature of interaction, and different specific key terms used among most interviewees, especially those from NGOs and international development organizations. My (Southeast Asian) background also helped to build trust with and to gain access to different academic and non-governmental networks in the region. At the same time, it is important to self-reflect on my judgment and observation and to distance myself from these contexts and issues.

To enhance the validity and trustworthiness of this study, different data collection strategies were employed. As previously described, the mixed-methods approach consisted of document analysis, in-depth interviews, participatory observations, and expert focus group discussions. These methods were used to validate the results and findings with a wide range of stakeholders. In addition, the two rounds of interviews and following-up with the interviewees helped to build trust and acquire detailed responses. Thirdly, this study focuses on explicitness in reporting the qualitative data from the interviews and document analysis by presenting the direct quotes as much as possible in the case analysis of each chapter. This is important as the qualitative researcher can illustrate results from direct responses and viewpoints of respondents (Cope, 2014). Moreover, the research process notes, progress reports, and fieldwork logs were written to reflect and keep track of the researcher's assumptions and observations on the findings and key decisions that were made during the study.

Ethical considerations for research were taken into account throughout the course of this study. These considerations include informed consent, minimization of potential harm to participants during and after data collection, voluntary participation, and confidentiality (Babbie, 2020; Cope, 2014). During the data

collection, when involved in the in-depth interviews, focus group discussions and participatory observations, participants were provided with an overview of this study and the contact details of the researchers and institutions. The participants were firstly asked for voluntary participation in this research and for permission to use data including interview quotes in the study. To minimize the potential harm to and ensure the confidentiality of participants, the names of the participants have been removed to prevent any direct link to the interviewees. Only their job position(s) and organizations that they were representing are indicated in this thesis. In some circumstances, the reports of direct quotes are omitted when requested by participants to not include their verbatim quotes in the report of case analysis and findings. The permission to use a voice-recorder was asked before the interviews, discussions, and meeting sessions. During the fieldwork, local researchers and scholars advised on local cultural issues and awareness to help avoid as many misunderstandings and negative feelings and as much discomfort among research participants as possible. After the data collection, the interview quotes and summary of the findings were sent to the participants if requested. All data are safely and privately stored during and after the research project in accordance with the protocol of the University of Groningen's Research Data Management Planning (University of Groningen, 2020). How the data are stored and used was explained to participants. In addition, some of the main findings were discussed with and confirmed by selected participants.

Chapter 1 Introduction

1.8 Research structure and thesis outline

This study consists of six chapters. Based on the main research aim of this study, Table 1.2 shows the link between the sub research-questions and the cases that structures Chapters 2-5 of this study. Below Table 1.2, this section includes an overview of Chapters 2-6.

Table 1.2: Sub research-questions, cases and outline of the thesis.

Research questions	Case(s)	Chapter
(1.) How can we understand resilience policy development for addressing flood vulnerabilities in a city in a developing country?	Bangkok Resilience Strategy	Chapter 2
(2.) How do international water policy ideas travel across borders and how can these ideas contribute to the development of water solutions to address local water challenges?	Mekong Delta Plan	Chapter 3
(3.) How can international resilience programs enable the building of local institutional capacities for the development and implementation of flood adaptation strategies?	Water as Leverage program	Chapter 4
(4.) Which institutional conditions promote the development and implementation of inclusive flood resilience strategies by international resilience programs?	Mekong Delta Plan and Water as Leverage program	Chapter 5

Chapter 2 Conceptualization of inclusive flood resilience planning

This chapter explores the development of an urban resilience policy in Bangkok, Thailand. The central case study is the development and implementation of the Bangkok Resilience Strategy. This resilience strategy includes various priorities and initiatives to strengthen urban flood resilience. This chapter first highlights three main criticisms in regard to resilience policy development for urban flood risk management: the multi-interpretable nature and difficulty to operationalize the concept in practice, the shift of responsibilities from the government to local communities, and the tendency to disregard potential negative outcomes from its implementation. Subsequently, the conceptual framework that is developed for this chapter aims to address these criticisms by focusing on three essential aspects of inclusive flood resilience planning – strategy, process, and outcome in urban flood risk management. Policy framing is adopted as an analytical approach for studying the development and implementation of the Bangkok Resilience Strategy. The analysis is based on a combination of insights from ‘insiders’ and ‘outsiders’ regarding the development of Bangkok’s resilience policy. The chapter sets forth the exploration of the political dimension in the making of the resilience policy for addressing the urban flood risk in a city in a developing country.

Chapter 3 Water policy translation from a developed to a developing country

This chapter explores the international travel of water policy ideas from the Netherlands to Southeast Asia. Being globally renowned for its water safety and flood protection, the Netherlands is particularly active in sharing water knowledge, insights, and policies to address local water challenges in other countries. The focus of this chapter is on the development and implementation of the MDP 2013 in Vietnam. The MDP 2013 provides a prime example of the international mobilization and local uptake of the Dutch water management policy in a developing country. To study the mobilization and translation of the Dutch water policy ideas, a framing perspective is adopted to uncover how meanings are created and negotiated across the borders, and how the key concepts that are part of the renowned Dutch water management approach are interpreted in the local practice. This chapter examines the interpretation of the key concepts from the Dutch water management approach, such as ‘collaborative governance’, ‘scenario-planning’, and ‘agro-industry’. Moreover, this chapter highlights the inclusive dimension in cross-border policy

Chapter 1 Introduction

learning by discussing the indigenization, ownership, and shared meaning in the local translation of the global water solutions for improving local water planning practice.

Chapter 4 Local institutional capacity building for flood adaptation

This chapter shifts the focus to enabling institutional design and the international resilience programs for inclusive flood resilience planning. Most cities in Southeast Asia concentrate on the investment of flood protection infrastructure and measures. The existing institutional capacities need to be transformed in order to enable the planning process for enhancing flood adaptation. The central focus of this chapter is on whether and how international resilience programs can enable the building of local institutional capacities for the development and implementation of flood adaptation strategies. The WaL program was initiated by the Netherlands to promote the development of local capacities to co-create flood adaptation solutions by focusing on a ‘resilience by design’ approach. The program introduced the resilience by design approach for enabling the collaboration between international organizations, multi-disciplinary design teams and local stakeholders to develop and propose strategic climate resilience programs. This chapter focuses on the three key elements in institutional capacity building for inclusive flood resilience planning: intellectual capital, social capital, and political capital. This chapter provides insights into the strengths and weaknesses of international resilience programs for improving local planning processes for flood adaptation in an urban context of a developing country.

Chapter 5 Institutional conditions for enabling inclusive flood resilience planning

To explore the institutional arrangement of international resilience programs in more depth, this chapter analyzes two Dutch-led international resilience programs in Southeast Asia, namely the MDP and the WaL program in Semarang. Each program approaches the essential conditions for inclusive flood resilience differently. This chapter aims to shed light on which institutional conditions promote the development and implementation of inclusive flood resilience strategies. The IAD framework is adopted in this chapter to further operationalize the rules-in-use for analyzing the essential conditions set or induced by the two international resilience programs to build local inclusive flood resilience. To this end, this chapter compares

the strengths and weaknesses of the institutional arrangement of the MDP and the WaL program and explores the formal and informal interaction for ensuring inclusive flood resilience. This chapter concludes that a better understanding of the institutional dimension, particularly the institutional arrangement and conditions, is important for the creation and organization of international resilience programs and their contribution to inclusive flood resilience planning in local contexts.

Chapter 6 Research conclusions, reflections and ways forward for research and practice

This chapter begins with presenting the main findings of this research to address the sub research-questions and the main research question. Based on the main findings, the chapter then discusses the primary elements in planning for inclusive flood resilience: social justice in flood resilience planning, the application of a resilience by design process, the travel of global water solutions, and towards transformative change by international resilience programs. This chapter also contains the contribution of this research to flood resilience research, reflections on the research methods, and suggestions for future research. Finally, this study provides key lessons and policy implications to support inclusive flood resilience planning, and proposes recommendations for international resilience programs.

Chapter 1 Introduction

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Chapter 2

Is Bangkok Becoming More Resilient to Flooding? A Framing Analysis of Bangkok's Flood Resilience Policy Combining Insights from Both Insiders and Outsiders

This chapter was published as:

Laeni, N., van den Brink, M., & Arts, J. (2019). Is Bangkok becoming more resilient to flooding? A framing analysis of Bangkok's flood resilience policy combining insights from both insiders and outsiders. *Cities*, 90, 157-167.
<https://doi.org/10.1016/j.cities.2019.02.002>

Abstract

The rapidly urbanizing cities in Southeast Asia experience increasing flood impacts due to the consequences of climate change. In these cities, policy efforts to build flood resilience are gaining momentum. The aim of this chapter is to understand and assess flood resilience policy development, particularly in cities in developing countries. Bangkok is one of the cities that participates in the 100 Resilient Cities Programme (100RC) – the international policy platform for building resilient cities. In 2017, the Bangkok Metropolitan Administration (BMA) launched the ‘Bangkok Resilience Strategy’ to translate the resilience concept to its urban context. A framing perspective is adopted to reconstruct the strategy, process and anticipated outcome of Bangkok’s flood resilience policy. We studied data obtained from ‘insiders’ (involved policy makers, experts and consultants) and ‘outsiders’ (local communities, civil society organizations and news media). Findings indicate that the economic growth frame is prevailing in the development of Bangkok’s flood resilience policy, prioritizing structural flood protection with little attention for flood adaptation measures and related social impacts among vulnerable communities. The role of local communities and civil society in the formulation of Bangkok’s flood resilience policy is limited. This chapter therefore recommends cities in developing countries and cities in the 100RC Programme to organize a more inclusive resilience building process for addressing social problems regarding urban poor communities along with increasing flood safety and protection.

Keywords: Flood resilience, flood risk management, Bangkok, developing country, framing

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

2.1 Introduction

According to the United Nations Office for Disaster Risk Reduction (UNISDR), flood is the most occurring disaster worldwide (CRED, 2016). Cities around the world experience an increasing flood impact due to the consequences of climate change such as increased variability and intensity of rainfall (World Bank, 2010; Pelling, 2013). Cities in Southeast Asia are mostly located in flood-prone areas (World Bank, 2010). According to the World Bank's report on climate risk assessment of Asian coastal megacities, major cities in Southeast Asia – including Bangkok, Ho Chi Minh City and Jakarta – are among the top ten cities in the world which are expected to experience more intense flood events (Nicholls et al., 2008; The World Bank, 2010). Moreover, UN-Habitat shows that 31% of the Southeast Asian urban population lives in slums (Dahiya, 2012). These low-income urban populations are the most vulnerable to potential flood impacts and, at the same time, have the fewest resources for coping with the rising climate risks of flooding (Parnell et al., 2007; Lebel et al., 2009; Berquist et al., 2015).

Concurrently with the increased recognition of the rising flood impacts affecting cities globally, there is a growing demand for cities to become 'more resilient' in order to anticipate and prepare for environmental challenges (Duit et al., 2010; Desouza & Flanery, 2013). Resilience as an urban policy goal can be defined as the capacity of a city to withstand or adapt to shocks and disturbances as well as the ability to adapt and transform to changing socio-ecological conditions (Holling, 1973; Davoudi, 2012). The increasing popularity of the resilience concept has stimulated various international organizations to apply the concept in policy programmes such as the Rockefeller Foundation's 100 Resilient Cities Programme (100RC), the UNISDR Making Cities Resilient campaign, and the OECD Resilient Cities project (Johnson & Blackburn, 2014; Vale, 2014; Spaans & Waterhout, 2017). The main objectives of these programs are the promotion of resilience as a source of policy inspiration, and the development of policy instruments for cities to address acute shocks and chronic stresses that undermine the functions and development of cities (ARUP, 2014). Despite its popularity, the resilience concept is difficult to operationalize and the adoption of resilience in an urban context is often criticized for a lack of critical consideration of the resilience building process and outcome (Duit et al., 2010; Hutter & Kuhlicke, 2013; Vale, 2014; White & O'Hare, 2014; Pizzo, 2015). Recent studies on urban flood resilience mostly focused on cities in developed countries (e.g. Lu & Stead, 2013; Restemeyer et al., 2015; Hegger et al., 2016). As a consequence, until now little research has been conducted focusing on resilience

building in cities in developing countries. While these cities are facing higher impacts from climate risks: they have large marginalized and disadvantaged populations, which are often at higher risk and exposed to floods, they have limited resources, and they have weak political access and influence in flood risk management policies (Lebel et al., 2009; Marks, 2015).

Therefore, the aim of this chapter is to understand flood resilience policy development in a city in a developing country. The city of Bangkok was selected as the central case study as it is one of the top ten coastal cities that are highly likely to experience more frequent flood events (Nicholls et al., 2008). Bangkok's high vulnerability to flooding is due to its geographical location, physical infrastructure and rapid urbanization (Sintusingha, 2006; Marome, 2012; Nair et al., 2014). In addition, Bangkok recently participated in the 100RC Programme and in 2017 formulated the 'Bangkok Resilience Strategy' to address a wide range of the city's problems (BMA, 2017). Drawing on insights from literature on resilience and urban flood resilience (Davoudi, 2012; Lu & Stead, 2013; Vale, 2014; White & O'Hare, 2014; Restemeyer et al., 2015; Hegger et al., 2016), and literature on urban political ecology (Swyngedouw & Heynen, 2003; Keil, 2005; Cannon & Müller-Mahn, 2010; Mullenite, 2016), we identified three main criticisms regarding resilience policy adoption, relating to the strategy, process and outcome of practical resilience-building efforts. Subsequently, we developed a conceptual framework that incorporates these three aspects to study flood resilience building in cities in developing countries.

To analyze the development and implementation of the Bangkok Resilience Strategy, we adopted a framing perspective, which emphasizes the way in which people make sense of ambiguous and complex situations (van Hulst & Yanow, 2016). Moreover, we included insights from both 'insiders' and 'outsiders' in our data analysis. Insights from 'insiders' (i.e. policy makers, experts and consultants) were analyzed to reconstruct how the resilience concept is actually being interpreted – thus focusing on the underlying policy frame structuring the operationalization of flood resilience in Bangkok. Subsequently, views from 'outsiders' (i.e. local communities, civil society organizations and news media) were examined to reconstruct how the resulting resilience policy frame is perceived in a broader urban policy context. The chapter concludes by formulating several policy recommendations for Bangkok to become more resilient to flood risks. These recommendations are also relevant for other cities in developing countries, and for other cities in the 100RC Programme that are developing and implementing their resilience strategy.

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

2.2 Building inclusive, flood resilient cities

2.2.1 Flood resilient cities from a critical perspective

Resilience is an internationally dominant and influential concept for dealing with ecological threats and social and climate-related risks (Lu & Stead, 2013). In particular, the resilient city policy framework is gaining momentum for cities to become more resilient to floods and other disaster risks (Restemeyer et al., 2015; Hegger et al., 2016; Rösenzen, 2016; Rosenzweig, 2018; Dai et al., 2018). The resilience concept is, however, interpreted differently across policy domains and places (Davoudi, 2012; Lu & Stead, 2013; Pizzo, 2015). In urban flood risk management, resilience interpretations are mainly influenced either by the traditional equilibrium perspective or the more recently developed evolutionary perspective (Restemeyer et al., 2015; Hegger et al., 2016). The first interpretation is based on Holling's (1973) equilibrium perspective emphasizing the ability to withstand and recover from shocks and disturbances. Evolutionary resilience interpretations do not only stress resistance and recovery but also stress the ability to adapt and transform for anticipating and adapting to changing socio-ecological conditions (Folke et al. 2010; Davoudi, 2012; Desouza & Flanery, 2013). As with the rising impact of climate change and associated 'unknown unknowns' (Termeer & van den Brink, 2013), complete flood protection of a city is arguably almost impossible (Hegger et al., 2016), the evolutionary interpretation is gaining ground in urban flood resilience thinking. Consequently, flood risk management approaches are currently shifting from primarily resistance and control ('fighting with water') to more integrated and adaptive approaches ('living with water') (Scott, 2013; Restemeyer et al., 2015; Sörensen et al., 2016).

Although resilience nowadays is an influential concept in urban flood risk management, current resilience policy adoption faces several criticisms and challenges. Based on a review of resilience, urban resilience, flood resilient cities and urban political ecology literature (an overview of the references is included in Table 1), we have identified the following three key criticisms. First, resilience is widely considered a multi-interpretable concept, which is difficult to operationalize in practice (Zevenbergen et al., 2008; Duit et al., 2010; Porter & Davoudi, 2012; White & O'Hare; 2014). Despite various attempts to adopt resilience for addressing flood risks, the operationalization of resilience – especially evolutionary resilience – in a concrete flood risk management strategy remains challenging (Lu & Stead 2013; Scott 2013; Restemeyer et al. 2015; Lazzeretti et al. 2015; Pizzo 2015; Chmutina et al. 2016; Hegger et al. 2016). As a result, resilience policy adoption in practice tends to focus on a resistance and recovery strategy based on an equilibrium perspective, rather than

on developing a more holistic and integrated strategy. It is therefore necessary to study how the resilience concept is translated into a flood risk management strategy in practice (Lu & Stead, 2013; Coaffee 2013; Pizzo, 2015).

The second key criticism refers to the process of resilience building in practice. Due to the abstractness of the concept, the responsibilities between governmental authorities and local communities to achieve flood resilience are often unclear. Several authors even have argued that resilience policy adoption would entail a shift of responsibilities, for example for flood protection and adaptation, from the government to local communities and businesses (Shaw, 2012a, 2012b; White & O'Hare, 2014; Chmutina et al., 2016). The reliance only on local communities to withstand and adapt to disturbances and crises would create unequal vulnerabilities because some communities might have fewer resources and capacities (White & O'Hare, 2014). A critical consideration of the process of resilience building is thus essential as well.

Third and finally, becoming a 'resilient city' is often used by policymakers as an aspired outcome, while the political nature of the resilience concept is often neglected (White & O'Hare, 2014; Vale, 2014). Several authors have therefore called for a greater emphasis on the political dimension of resilience outcomes, by arguing that a power-blind use of the concept may lead to exposing more risks among disadvantaged communities (Davoudi, 2012; White & O'Hare, 2014; Vale, 2014; Pizzo, 2015; Mullenite, 2016). However, these studies do not expand on the precise and actual negative and positive impacts of resilience policy. A critical perspective is therefore needed to explore the anticipated outcome of resilience policy, which particularly addresses critical questions such as 'resilience for whom' (Davoudi, 2012; Vale, 2014; Pizzo, 2015; Grove & Chandler, 2016).

2.2.2 Analyzing resilience building in urban flood risk management

Based on the three key criticisms explained above, we have developed a conceptual framework that can be used for the analysis of resilience building in urban flood risk management in developing countries. The framework, which is presented in Table 2, consists of the three key aspects essential for flood resilience building, namely strategy, process and outcome. In the literature, these aspects have different interpretations in the equilibrium perspective and the evolutionary perspective.

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

Table 2.1: An overview of key criticisms regarding resilience policy adoption.

Criticisms on resilience	Critical questions	Sources
Resilience is a multi-interpretatable concept and difficult to operationalize in practice	(i) Resilience by what approach? (which strategy)	Zevenbergen et al. 2008; Duit et al. 2010; Folke et al. 2010; Aerts & Botzen 2011; Desouza & Flanery 2013; Lu & Stead 2013; Scott 2013; Coaffee 2013; Restemeyer et al. 2015; Lazzeretti et al. 2015; Pizzo 2015; Chmutina et al. 2016; Hegger et al. 2016; Sörensen et al. 2016; Dai et al. 2018; Dai et al. 2018; Poku-Boansi & Cobbinah 2018; Rosenzweig et al. 2018
Resilience may induce a shift of responsibilities from the government to local communities	(ii) Resilience by whom? Who gets to decide? (which process)	Davoudi 2012; Shaw 2012; Hutter & Kuhlicke 2013; Vale 2014; Chmutina et al. 2016; Mullenite 2016; Spaans & Waterhout 2017
Adoption of resilience as a normative aim may disregard potential (positive or negative) outcomes of resilience policy	(iii) Resilience for whom? Whose interest is prioritized? (which outcome)	Cannon & Müller-Mahn 2010; Davoudi 2012; Shaw 2012; Vale 2014; White & O'Hare 2014; Pizzo 2015; Grove & Chandler 2016; Mullenite 2016

2.2.2.1 Strategy

The first aspect to study is the flood risk management strategy. Resilience in an equilibrium perspective prioritizes protecting cities from flooding by keeping water out of urban areas (Scott, 2013; Restemeyer et al., 2015). The focus is on reducing flood probabilities and increasing robustness and resistance through structural flood protection measures such as dikes, dams and levees. In addition, emergency

management and recovery are important as well strengthened (Meijerink & Dicke, 2008; Lu & Stead, 2013; Hegger et al., 2016). Next to structural flood protection, there is a need to develop strategies aimed at reducing flood consequences and adjusting to climate change uncertainties (Aerts & Botzen, 2011; Lu & Stead, 2013; Restemeyer et al., 2015; Sörensen et al. 2016). The evolutionary perspective therefore emphasizes ‘waterscape’ or – ‘living with water’ – perceptions (Thaitakoo & McGrath, 2010; Dahiya & Thaitakoo, 2012). Translated to urban flood risk management, a more holistic and integrated approach is promoted, emphasizing flexible and adaptive measures to anticipate rising flood consequences (Lu & Stead, 2013; Scott, 2013). Adaptive flood risk management measures include spatial measures for retention areas, flexible water storages and flood-proof buildings, as well as long-term adaptation through raising awareness, collaborating and learning among public and private stakeholders to create a shared long-term vision (Hegger et al., 2016; Sörensen et al., 2016). The equilibrium perspective thus emphasizes structural flood protection and recovery strategies; whereas, evolutionary resilience gives more attention to holistic and integrated strategies for both flood safety and adaptation.

2.2.2.2 Process

Second, different resilience interpretations in flood risk management lead to emphasizing roles and responsibilities of stakeholders differently. Various scholars have argued that resilience in the equilibrium perspective emphasizes a top-down, technical approach to implement structural flood protection and recovery strategies (Shaw, 2012; Chandler, 2014; Restemeyer et al., 2015). This approach is perceived to be important to ensure robustness and resistance to flood risks, for which order and control are needed while wider stakeholder collaboration is less emphasized (Hegger et al., 2016; Sörensen et al., 2016). In contrast, developing adaptive and spatial flood risk management strategies, such as smart spatial design of flood-prone areas, increasing flood awareness among communities, and strengthening abilities for learning and continuous improvement, requires an inclusive approach (Restemeyer et al., 2015; Hegger et al., 2016). A resilience strategy according to the evolutionary perspective implies a deliberative process through bottom-up and open stakeholder collaboration working towards common goals in order to achieve a more inclusive resilience outcome (Hutter & Kuhlicke, 2013; Coaffee, 2013; White & O’Hare, 2014). In general, an exclusionary process focusing on managerial technical solutions thus appears to be more related to the equilibrium perspective. The evolutionary resilience

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

instead calls for more open and dynamic processes through wider stakeholder collaboration.

2.2.2.3 Outcome

Third and finally, it is important that a critical perspective of resilience building efforts identifies unequal anticipated outcomes of flood resilience building. The focus on structural flood protection, particularly in economic significant areas, could lead to resilience policy promoting economic growth and competitiveness of a city (White & O'Hare, 2014). A resilience strategy anticipating mainly economic development outcomes is therefore by some scholars seen as an exclusionary process for the dominant economic interest, which is consistent with the neoliberal agenda (Shaw, 2012a, 2012b; Mullenite, 2016). Although economic development is highly relevant, especially for developing countries, several authors have argued that structural flood protection for economically significant regions could in turn transfer flood risks to other, disadvantaged communities (Davoudi, 2012; Vale, 2014; Marks, 2015). Several studies point out that a focus on only flood protection and recovery might fail to address the social vulnerability to floods, especially among vulnerable communities (Cannon & Müller-Mahn, 2010; Marks, 2015; Chmutina et al., 2016). The equilibrium resilience perspective could thus lead to an emphasis on flood safety and protection exclusively for promoting economic growth and competitiveness of a city, whereas the evolutionary perspective brings more attention to broader societal interests, a broader variety of strategies, and continuous adjustment in coping with increasing flood risks (Chandler, 2014; Hegger et al., 2016).

2.3 Research design

2.3.1 The case study: Bangkok, Thailand

We used Bangkok, Thailand, as the central case study for understanding flood resilience policy development in cities in developing countries. Bangkok is one of the most urbanized cities in Southeast Asia, and the total population of the city is approximately 11 million (BMA, 2015).

Table 2.2: Aspects of flood resilience building in urban flood risk management.

	Equilibrium	Evolutionary
Strategy	<i>Flood protection and recovery</i>	<i>Flood safety, adaptation and transformation</i>
	Robustness	Holistic
	Preparedness	Integrated
	Resistance	Adaptive
Process	<i>Exclusionary</i>	<i>Inclusionary</i>
	Traditional top-down process	Open and dynamic process
	Focus on managerial and technical solutions	Focus on opening up political voices and stakeholder collaboration
	Narrow stakeholder involvement	Broad stakeholder involvement
Outcome	<i>Economic interest</i>	<i>Societal interest</i>
	Economic growth and competitiveness protected from floods and disturbances	Broader societal interest along with flood safety and protection

The city is situated in the low-lying areas of the Chao Phraya River delta (Marome, 2012; Nair et al., 2014). The rapid urbanization contributes to increasing physical and social vulnerabilities to floods. As a result of the replacement of agriculture and retention areas with commercial and residential development, the capacity of drainage and flood protection systems is reaching its limits (Sintusingha, 2006; Roachanakanan, 2013). Bangkok is regularly impacted by major and minor flood events. The 2011 Flooding was the most devastating flood event in Thailand in the last 10 years, killing over 800 people and costing approximately USD 46.5 billion overall (World Bank, 2012).

The Department of Drainage and Sewerage (DDS), which is part of the Bangkok Metropolitan Administration (BMA), is responsible for flood and water management in Bangkok. Its key mission involves maintaining and enhancing flood protection infrastructure including dikes, sluices, water pumps and drainage tunnels (BMA, 2015a, 2015b). Bangkok's flood protection systems and drainage infrastructure were constructed to protect the city's from the tidal floods of the Chao

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

Phraya River, river runoff from the north of Bangkok, and pluvial floods (see Figure 1) (BMA, 2015; Marks, 2016; Veasakul, 2016). As part of the 100RC Programme, Bangkok formulated the 'Bangkok Resilience Strategy' to improve the city's resilience to address such challenges as flood risk. This strategy includes different priorities and initiatives to implement resilience in its urban context. The advisor to the Governor of Bangkok was appointed as the Chief Resilience Officer, thereby given the responsibility to lead the various initiatives and projects of the 100RC Programme in Bangkok. In addition, BMA's Department of Environment serves as the secretariat office and central point for coordinating and implementing the initiatives and programmes (BMA, 2017). Using Bangkok as a case study helped to understand how a developing country city is implementing a resilience policy strategy in their own urban flood risk management. This case study could also provide useful lessons for other cities within the 100RC Programme that are developing and implementing their resilience strategy.

2.3.2 Framing resilience: Combining insights from both insiders and outsiders

Resilience is an open and multi-interpretable concept that requires an interpretive approach for understanding the construction and negotiation of meaning in concrete policy-making practices (Porter & Davoudi, 2012; Hutter & Kulicke, 2013). Policy framing is therefore adopted as an analytical approach for studying the development and implementation of flood resilience policy in Bangkok. Framing, as an interpretative approach, refers to the selection and highlighting of portions of information, and is useful for exploring power relations in the negotiation of meaning in a policy process (Entman, 1993; van Hulst & Yanow, 2016). With regard to the development of Bangkok's resilience policy, our analysis is based on the combination of insights from 'insiders' and insights from 'outsiders'. First, we reconstructed how the resilience policy is being interpreted by responsible 'insiders', i.e. policy makers, experts and consultants, and examine which policy frame is structuring the operationalization of flood resilience building in Bangkok.

Then, in order to evaluate the developed resilience policy, we studied how this policy is perceived among wider stakeholders (the 'outsiders').

Figure 2.1: The Flood Protection System of Bangkok

(Source: <https://www.bangkokpost.com/learning/learning-news/264228/bangkok-drainage-system> accessed 20 December 2017).

2.3.3 Methods and data analysis

To reconstruct the developed resilience policy frame, we carefully reviewed 4 key policy documents, conducted 15 semi-structured interviews, and organized an expert-focus group discussion. We began with the review of key policy documents such as the Bangkok Resilience Strategy, which was launched in February 2017. The BMA formulated the Bangkok Resilience Strategy under the 100RC Programme and partner organizations, assisted by and in collaboration with the Rockefeller Foundation (BMA, 2017). Additionally, the BMA's flood management policy document, the Annual Bangkok Water Management Report 2016 (BMA, 2015), and two other national policy documents related to Thailand's water and flood management, namely the National Strategic Water Management Plan 2015 (NWRC, 2015) and the National Disaster Prevention and Mitigation Plan 2015 (DDPM, 2015), were studied. The policy document review was the first step in reconstructing Bangkok's flood resilience policy frame. The second step involved 15 semi-structured

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

interviews with involved policy officials, experts and consultants – the ‘insiders’ (see Table 3). Our interview questions for insiders are mainly related flood problems in Bangkok and the development of Bangkok flood risk management policies after the 2011 Floods. During the fieldwork from February to March 2017, also an expert-focus group discussion was conducted with researchers and academic fellows from the Center for Mega City and City Studies in Bangkok. This focus group discussion aimed to explore the development of flood risk management in Bangkok and problems related to dealing with urban floods.

Subsequently, to understand how the developed resilience policy is perceived, we conducted 12 semi-structured interviews with communities and municipality mayors from neighbouring provinces of Bangkok, located in flood-prone areas, and other relevant civil society and media organizations (see Table 3). Among these flood-affected communities, there are two low-income informal communities and four other communities with mostly low-income and middle-income households. The semi-structured interview questions focused on the interviewees’ experience regarding urban flood problems and their perception of Bangkok’s flood risk management. Specifically, the interviewees were asked about their perspective on the recently introduced flood management policies including the Bangkok Resilience Strategy, and how they were involved in the development of these policies.

All 27 interviews and the focus group discussion were fully transcribed, and interviewees and participants in the focus group discussion were asked for permission to use the interview transcripts for this research. In the analysis, we used the computer-aided software, Atlas.ti, to develop code networks for interpreting Bangkok’s resilience policy. These code networks are based on the conceptual framework, that is, the strategy, process and outcome of resilience building in urban flood risk management (see Table 2). We then used these code networks to reconstruct and analyze the resilience policy from based on insights of insiders and outsiders (see Appendix B).

Table 2.3: Overview of qualitative data collection.

Qualitative data collection
Insiders – reconstruction of developed resilience policy frame
4 policy documents
5 semi-structured interviews with policy officials at the national level
5 semi-structured interviews with policy officials at the metropolitan level
5 semi-structured interviews with policy experts and consultants
1 expert-focus group discussion with academics and researchers

Qualitative data collection

Outsiders – reconstruction of perceiving developed resilience policy among wider stakeholders

- 2 semi-structured interviews with heads of local-income settlement communities
 - 2 semi-structured interviews with members and heads communities with low- and middle-income households
 - 5 semi-structured interviews with representatives of civil society organizations
 - 2 semi-structured interviews with municipality mayors
 - 1 semi-structured interview with a news editor
-

2.4 Bangkok resilience strategy: A new solution for dealing with floods?

2.4.1 The insiders: Safeguarding economic growth frame

2.4.1.1 Strategy

Bangkok's existing flood risk management system focuses on structural flood protection and drainage infrastructure (BMA, 2015a, 2015b). As the Head of Bangkok Flood Control Center stated: "The current flood management strategies, especially after the 2011 Floods, are the heightening of dikes along the Chao Phraya River, the construction of more large drainage tunnels, and increasing the drainage capacity of canals". Despite this large investment in structural flood protection, several policy officials argued that the city should not rely on structural flood protection alone.

In this context, the Division Head of the Strategy and Evaluation Department, BMA, stated: "The heavy reliance on costly and inflexible flood protection is becoming less effective for dealing with the changing flood problems the city is facing." A member of the Bangkok Resilience Strategy coordination team, part of BMA's Department of Environment, explained the changing focus in Bangkok's flood risk management as follows: "The recently developed Bangkok Resilience Strategy aims to increase the variety of flood risk management measures, by for instance increasing the number and capacity of urban retention areas, and by providing incentives for the construction of flood-proof buildings." The Bangkok

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

Resilience Strategy is generally regarded by the interviewees as a new policy attempt to move away from solely depending on structural flood protection, and shift towards adopting a broader variety of flood risk management measures. The Bangkok Resilience Strategy explains this more integrated flood risk management approach as follows: “As a flood-prone city facing a changing climate, we must look at different approaches for ‘living with water’. These approaches represent more integrated and holistic ways to manage different urban water systems, rather than solely depending on flood protection via hard infrastructure” (BMA, 2017; p.67). Although Bangkok’s flood risk management measures currently focus on structural protection and drainage infrastructure, the Head of Bangkok Flood Control Center also introduced an initiative in which communities are involved, namely ‘Chum-Chon-Ruk-Klong’ (‘Community Saves Canal’). This initiative encourages community members to take care of their canals and includes workshops by the DDS to increase awareness and to strengthen the role of community’s to keep the community’s canal clean.

2.4.1.2 Process

The Bangkok Resilience Strategy aims to address major acute shocks from disasters including floods, fires and earthquakes – and other ongoing chronic stresses in the city such as traffic, waste and pollution, and poverty (BMA, 2017). With the attempt to tackle these complex urban problems, two policy formulation phases can be distinguished (see Figure 2). The first phase involved exploratory data collection, including stakeholder consultation and preliminary resilience assessment to identify key policy areas for the resilience strategy. The stakeholder consultation mainly included academia, government, NGO, businesses. The government officials involved were mainly from the BMA. The second phase involved the development and selection of resilience initiatives and programs. Although the strategy document mentioned that NGOs should be included in the strategy formulation process, mainly policy officials, experts and consultants in different working teams played a major role in identifying and selecting policy interventions for the Bangkok Resilience Strategy (BMA, 2017). These working teams included a ‘flooding team’, an ‘economic prosperity and equality team’, and a ‘reduce impacts of shocks team’. In addition, international collaboration with experts and consultants from other countries in the context of the 100RC Programme was also evidenced in the development of the resilience priorities and initiatives.

2.4.1.3 Outcome

The Bangkok Resilience Strategy attempts to integrate both social and economic benefits from flood risk management. As stated in the Bangkok Resilience Strategy: “These actions [which maximize natural infrastructure for water management] will be underpinned by community participation for integrated socio-economic, environmental and flood protection benefits” (BMA, 2017; p.65).

Figure 2.2: Bangkok Resilience Strategy formulation process (Source: BMA, 2017: 31)

Although a broader societal outcome seems to be anticipated, the potential economic outcome is also significantly highlighted. The developed resilience strategy prioritizes economic growth, which should be safeguarded from the potential impact of floods and other disturbances. It emphasizes resilience building for maintaining economic activities, “...ensuring that all city residents will be able to share in and enjoy the development gains accumulating over time without any serious disruption” (BMA, 2017; p.32). The Director of Earthquake and Disaster Watch and Studies, part of the Ministry of Interior, explained the economic focus in Bangkok’s flood policies as follows: “Bangkok’s flood resilience strategies are mainly to protect economic growth in real-estate development and the tourism industry.”

To conclude, an economic growth frame is dominant in the development of the Bangkok Resilience Strategy. In practice, structural flood protection and drainage

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

infrastructure remain the dominant strategy to protect the city and safeguard economic development. In addition, the role of international experts and consultants is significant in the strategy formulation. Although the Bangkok Resilience Strategy attempts to integrate broader socio-economic benefits, concrete measures to achieve this particular aim seem to be lacking and at the same time community involvement is evidently limited.

2.4.2 The outsiders: Call for more space for voices and water

2.4.2.1 Strategy

With regard to the flood risk management strategy, the communities in flood-prone areas, municipality mayors and civil society organizations also see the importance of combining different flood risk management strategies. The representative of the natural and forest conservation foundation, for instance, stated: “Although it is necessary to strengthen flood defences, the BMA should simultaneously implement land use measures for maintaining natural retention areas.” The community leader in Wat Pho Riang also argued that the flood protection measures alone cannot prevent and mitigate flood impacts in the community: “After the 2011 floods, more and higher dikes have been constructed, but we do not yet have an early-warning system and emergency plan to help people in our communities, especially the vulnerable ones, for when the pluvial flooding takes place.” Similarly, the News Editor of the disaster news programme of Thai PBS in Thailand stated that the city particularly needs a more effective early warning system in dealing with the increasing potential flood impacts, especially from heavy rainfall. Acknowledging the problems arising from changing and increasing flood risks, the communities and civil society organizations suggest that the various measures for flood preparation available to and in communities should be implemented.

2.4.2.2 Process

As a result of the focus on structural flood protection and the limited number of measures supporting community flood preparation, the involvement of community and civil society in flood risk management in Bangkok was limited. The measures to relocate informal settlement communities along the canals demonstrate the communities’ limited involvement and influence in decision-making. A social activist for the rights of informal settlement communities added that the community members are reluctant to participate in public hearings because they thought they do

not have the power to negotiate for their compensations. Moreover, several interviewees indicated that the community flood preparedness initiatives gain little support from the government. The head of the Phan-Thom Community youth volunteer group stressed the role of the community by saying: “I wish BMA District Offices would see the importance of the community and actively support community initiatives such as a community to prevent polluting and littering waste to the canals.” Also, the community leader in Wat Pho Riang, which was heavily affected by the 2011 floods, explained the need for empowering the communities for reducing flood risks: “We don’t want to only receive orders from the government. It is not effective to motivate our community members to work together. We instead want a system for sharing knowledge and training for flood preparedness and emergency response and evacuation.”

2.4.2.3 Outcome

Lastly, the societal interests especially at the community level and among the vulnerable populations had largely been ignored in Bangkok’s existing flood management system. First, the social impacts among the informal settlement communities from the relocation measures demand a greater attention according to the interviewees. A civil society organization representative for rights of informal settlement communities explained the impacts resulting from these measures as follows: “The relocation of informal communities disconnects the inhabitants from their existing social and economic networks.” In addition, the community in Promsumrit, where there are several informal settlements located, raised one of the major problems of this relocation: “The complaint is that the price for moving to the government social housing is too high for these low-income dwellers.” Although this community leader agreed with the government relocation plan, he pointed out that this measure must take the interrelated social issues such as poverty into consideration. Second, more attention was needed for inclusive flood risk management measures to also incorporate the interests of disabled people. The representative from the civil society organization for disabled people asked for an inclusive flood early warning system and evacuation shelters for people with special needs. These flood vulnerable communities and groups wished for new flood risk management policies addressing not only the flood problem but also other interrelated social issues. The framing of Bangkok’s flood resilience policy highlights economic development, protection and stability without presenting concrete

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

measures to address flood impacts among vulnerable communities, and without addressing interrelated social problems at the community level.

To conclude, the framing of Bangkok's flood resilience policy highlights economic growth, protection and stability without presenting concrete measures to address flood impacts among vulnerable communities, and without addressing interrelated social problems at the community level. The communities, municipality mayors and civil society organizations call for a greater involvement and broader stakeholder collaboration in the development of Bangkok's flood resilience policy. Moreover, they hope that the existing flood risk management will transition towards incorporating an integrated approach that takes into account social and environmental benefits in response to the changing and increasing flood risks.

2.5 Discussion

Previous studies on Bangkok's flood risk management mainly focused on understanding the existing institutional arrangement (Leberl et al., 2011; Kamolvej, 2011; Roachanakanan, 2012; Marome, 2013; Saito, 2014; Marks & Lebel, 2016). These studies argued that the centralization of policy and the institutional fragmentation of flood risk management have contributed to the prioritization of structural flood protection. Instead of focusing on the existing institutional arrangement, we analyzed Bangkok's ambitions and efforts in becoming flood resilient, also because the development of 'resilience policy' is increasingly recognized as a new policy 'solution' to urgent problems of the city. To understand the development and implementation of Bangkok's flood resilience policy, we used insights from insiders and outsiders for exploring the critical dimension of flood resilience building, and we analyzed the strategy chosen, the process developed and the outcome anticipated.

With regard to the first aspect of resilience building in practice – the strategy developed – the Bangkok Resilience Strategy is framed as an important step in changing the way of dealing with floods in the city, by focusing not only on strengthening flood safety and protection but also on helping communities to adapt to increasing flood risks. While the strategy document indicates the intention for policy change, the insights from outsiders, however, showed that structural protection remains dominant in Bangkok's flood management system. Within the prevailing economic growth frame, little attention is given to flood adaptation, especially among vulnerable communities. This paradox between the policy's

ambitions to move towards a more evolutionary interpretation of resilience (ARUP, 2014) – inspired by the 100RC Programme – and the persistent focus on structural flood protection measures is evidenced in the current practice of Bangkok’s flood resilience policy. This finding is consistent with previous resilience publications concluding that the equilibrium perspective is dominant in resilience policy operationalization (White & O’Hare, 2014; Restemeyer et al., 2015; Chmutina et al., 2016; Poku-Boansi & Cobbinah, 2018).

The second aspect was the process of flood resilience building. The Bangkok Resilience Strategy mainly involved policy officials, experts and consultants (the insiders). The NGOs involved are mostly international NGOs, while the role of local NGOs or civil society organizations is very limited. This result arguably contradicts to the findings of Spaans and Waterhout (2017) regarding Rotterdam’s participation in the 100RC Programme, which had brought different stakeholders together. In Bangkok, the policy framing is perceived as exclusionary resilience policymaking, which contradicts with the inclusive resilience ambition of the 100RC Programme: “Inclusion emphasizes the need for broad consultation and engagement of communities” (ARUP, 2014, p.5). An open and inclusive process is important for building flood resilience in Bangkok and in other cities in developing countries, that is, for developing a more holistic and integrated approach in urban flood risk management (Restemeyer et al., 2015; Hegger et al., 2016; Sørensen et al., 2016). Realizing urban flood resilience is context-dependent, and both top-down policy instruments and bottom-up local community engagement are important (Hegger et al., 2016; Dai et al., 2018; Rosenzweig et al., 2018).

The third aspect concerned the anticipated outcome of flood resilience building. Although several resilience publications pointed towards the importance of power-relations and critical outcomes of resilience policy (Davoudi, 2012; Vale, 2014; Pizzo, 2015), until now little research has explored the anticipated outcomes of resilience policies. This chapter aimed to address this limitation and showed that Bangkok’s flood resilience policy is framed to prioritize economic growth and competitiveness with little focus on wider societal outcomes, especially at the community level. This result is in line with the theoretical argument in resilience literature arguing that an uncritical adoption of the resilience concept could prioritize economic interests, which might leave vulnerable populations behind (Davoudi, 2012; Cannon & Müller-Mahn, 2010; White & O’Hare, 2014; Marks, 2015; Mullenite, 2016). In addition, our results showed that the dominant economic growth frame is currently being challenged by the outsiders, who were not involved in the development of the resilience policy. The outsiders see other anticipated outcomes apart from economic development. In general, their perspective could be coined and

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

summarized as a social inclusiveness frame. However, as the interviewed outsiders have varying interests and objectives, more research is needed to explore their particular social inclusiveness framing related to flood resilience building. At this stage, our results indicated that prioritization only of the economic outcome – for instance, focusing on flood protection for certain economically significant areas without considering the ongoing and increasing flood risks of the whole city – will make it more difficult to respond to increasing flood risks from potential climate impacts.

2.6 Conclusion and recommendations

This chapter introduced a conceptual framework to analyze flood resilience building particularly in cities in developing countries, addressing the strategy, process, and anticipated outcome of flood resilience building efforts. As such, this framework contributes to a more in-depth discussion of the power-relations and critical dimensions of the current ‘flood resilient city’ policy trend. By combining insights from both insiders and outsiders on flood resilience building, this chapter demonstrated that although social inclusiveness was anticipated in the Bangkok Resilience Strategy, the economic growth frame remained dominant, reinforcing existing flood resilience strategies and processes, rather than leading to more adaptive and evolutionary ways of dealing with flood risks.

Based on our results, the following policy recommendations can be formulated for Bangkok. (1) To reinvent its flood risk management strategy, it is important that BMA, next to structural flood protection measures, also invests in developing spatial and adaptive measures, such as urban retention areas and flood-proof buildings, and stimulates risk awareness and communication to take into account rising flood vulnerabilities in real estate and urban development. In fact, a holistic and integrated approach to flood risks is not new to Thai people. Traditional elevated Thai houses and watersheds design have evolved as measures to adapt to extreme flood events (Dahiya & Taitakoo, 2011; Dahiya & Taitakoo, 2012). The challenge is to build on this traditional knowledge, and use it as an opportunity to develop these spatial and adaptive measures. (2) To this end, collaboration is required between the involved departments within the BMA, as well as between the BMA and other national governmental authorities, private stakeholders, civil society organizations and local communities. In addition, BMA could strengthen the roles

of its district offices to support flood preparedness at the community level and to involve vulnerable populations and disadvantaged communities in urban flood risks management. (3) To diversify anticipated outcomes, BMA could identify potential social impacts from flood risks as well as flood protection measures among disadvantaged communities, and timely consider adequate compensation arrangements for affected communities, such as eviction of informal settlements.

These recommendations are also relevant to other cities in developing countries where increasing flood risks, rapid urbanization and urban poverty are prominent issues as well. The development of a place-specific integrated flood risk management approach that builds on traditional knowledge, the organization of an inclusive process emphasizing collaboration including and empowering outsiders, and the consideration of broader societal outcomes next to economic growth are essential to flood resilience building efforts in these cities. At the same time, these recommendations are relevant for Chief Resilience Officers, policymakers, experts, consultants, academics and civil society networks in cities that are part of the 100RC Programme. Although 100RC City Resilience Framework aims to provide cities with a holistic and integrative assessment tool to ensure that in particular the urban poor can survive and thrive (see also Spaans & Waterhout, 2017), our results show how difficult it is to bring this promise to practice, by identifying several critical challenges. Considering specific local problems and involving local communities and private stakeholders, thus organizing a social learning process which includes both insiders and outsiders, is also an important challenge in cities in developed countries (Pahl-Wostl et al., 2007; Restemeyer et al., 2017). Further research is needed to explore in-depth institutional capacity building for social inclusiveness in flood resilience building in cities in both developing and developed countries. In this respect, it would be relevant to compare how different cities interpret and implement resilience and other international policy concepts and frameworks in their own urban context.

Chapter 2 Is Bangkok Becoming More Resilient to Flooding?

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Chapter 3

Going Dutch in the Mekong Delta: A Framing Perspective on Water Policy Translation

This chapter was published as:

Laeni, N., M. A. van den Brink, E. M. Trell, and E. J. M. M. Arts. Going Dutch in the Mekong Delta: a framing perspective on water policy translation. *Journal of Environmental Policy & Planning* (2020): 1-18.

<https://doi.org/10.1080/1523908X.2020.1792858>

Abstract

In response to the rising climatic impacts on worldwide urbanized deltas, the Netherlands has strategically and politically framed Dutch water management as a global water solution for improving water safety and flood protection in other countries such as Vietnam. Being renowned for its water management approach, the Netherlands is particularly active in sharing water knowledge, insights, and policies internationally. This chapter connects a framing perspective to policy translation studies to understand the role of language and meaning-making in the cross-border travel of policies. Adopting a framing perspective, it presents four dimensions of water policy translation concerning how policy frames are being created and interpreted – during the cross-border travel. The chapter follows the process of the Dutch water management approach being ‘packaged’ as global water solutions and ‘translated’ to inform the development of the Vietnamese Mekong Delta Plan of 2013. The results show that although similar concepts, metaphors and narratives could be witnessed in this translation process, the local use and interpretation of these concepts remain challenging. Inclusive engagement, shared and comprehensive understanding, and continuous exchange and learning processes could help to improve cross-border policy-making for sustainable delta management.

Keywords: Policy translation, policy framing, water management, Dutch water management, Mekong Delta Plan

Chapter 3 Going Dutch in the Mekong Delta

3.1 Introduction

Intensifying climate risks on water-related impacts have stimulated the global exchange of and learning about water management and climate change adaptation. Several authors (e.g. Johnson & Blackburn, 2014; Paulsson, 2018) have observed an increasing number of global policy platforms, such as the Intergovernmental Panel on Climate Change (IPCC), the OECD Water Governance Initiative, the Global Water Partnership, the 100 Resilient Cities Programme and the Delta Coalition. These policy platforms stimulate international learning and collaboration and aim to provide policy inspiration across borders (see also Mukhtarov & Daniell, 2016; Spaans & Waterhout, 2017). The Netherlands is particularly active in sharing water knowledge, insights, and policies internationally (Vinke-De Kruijf et al., 2012; Zevenbergen et al., 2012; NWP, 2014; MIE, 2016; Minkman & van Buuren, 2019). According to the OECD (2014), Dutch water management is regarded as an international reference for dealing with water and climate challenges effectively and innovatively. In this context, the international cooperation on the Mekong Delta Plan in Vietnam and the Bangladesh Delta Plan are considered prime examples of the promotion and uptake of the Dutch water management approach in developing countries (Zevenbergen et al., 2012; Hasan et al., 2019; Weger, 2019).

Recent research has proposed that the cross-border travel of policies can be critically explored through the concept of 'policy translation' (Hasan et al., 2019; Minkman & van Buuren, 2019; Weger, 2019). While earlier literature conceptualized the movement and influence of policies and ideas as policy transfer, policy diffusion or lesson-drawing (Rose, 1991; Dolowitz & Marsh, 1996; Evan & Davies, 1999; Dolowitz & Marsh, 2000; Marsh & Sharman, 2009; Vinke-De Kruijf, 2013), viewing the travel of policies as a rather linear process, the proponents of the policy translation approach consider the travel of policies as a dynamic and interpretative process. Lendvai and Stubbs (2007), for instance, highlight the multiple interpretations and changes of policy ideas from its creation in one country to its adoption and being put into practice in other countries. In addition, policy translation draws attention to the strategic and dynamic interactions between different contexts and actors, to the active roles of policy actors, and to the ways in which these actors engage in and influence the process of policy translation (Lendvai & Stubbs, 2007, 2009; Peck, 2011; Stone, 2012; McCann & Ward, 2012; Mukhtarov, 2014; Stone, 2017). Using the concept of 'translation' instead of 'transfer' emphasizes the explicit focus on the role of language and the negotiation and transformation of

meaning in the cross-border travel of policies. Although understanding this interpretative process is generally considered to be at the heart of policy translation research, so far, little attention has been given to the application of an interpretive approach to analyze language use and the construction of shared meaning in empirical cases (McCann, 2003; McCann, 2008; Stone, 2012; Peck, 2011; Mukhtarov, 2014; Stone, 2017).

This chapter aims to fill this research gap by connecting a framing perspective to policy translation. Framing fundamentally involves selecting and highlighting some aspects of perceived reality, to promote particular problem definitions and solutions (Entman, 1993). Adopting a framing perspective on policy translation enables researchers to uncover how policy actors make sense of policy problems and ambiguous realities, and strategically choose to present particular policy solutions for addressing problems in their own countries and beyond (cf. Rein, 1983; Lendvai & Stubbs, 2009; van Hulst & Yanow, 2016). The choice to adopt a framing perspective builds on previous policy translation studies, in which the terms ‘framing’ and ‘reframing’ are used in general to refer to, for example, the communication of knowledge via narratives or the modification of the meaning of policy-ideas that travel (see e.g. Stone 2012; Mukhtarov, 2014; Weisser et al., 2014; Lendvai & Stubbs, 2009; Weger, 2019). Nevertheless, there are very limited empirical studies that connect policy translation to framing and that follow a policy in its cross-border travels to unravel the associated meaning-making in different (local) contexts. An understanding of language use in meaning-making and strategic framing processes in the context of overall cross-border policy-making is still needed. In this chapter we, therefore, combine insights from policy translation (e.g. De Jong & Edelenbos, 2007; Lendvai & Stubbs, 2007; Beveridge & Guy, 2009; Freeman, 2009; Mukhtarov, 2014) with policy framing literature (e.g. Rein, 1983; Schön, 1993; Schön & Rein, 1994; Rein & Laws, 2000; van Hulst & Yanow, 2016), to develop a conceptual framework for analyzing the framing process involved in the creation and mobilization of international policy ideas and solutions for creating local-specific solutions and embedding these in local water planning practice.

The development of the Mekong Delta Plan 2013 (MDP from hereon) provides an excellent case for exploring policy translation in practice, as it shows how the Dutch water management approach was strategically ‘packaged’ as a global water solution and subsequently ‘translated’ to inform the Vietnamese Mekong Delta Plan 2013 (see e.g. Minkman & van Buuren, 2019; Van Staveren, 2018; Hasan et al., 2019; Weger 2019; Seijger et al., 2019; Vo et al., 2019). Previous research has provided insights into the branding of the Dutch Delta Approach (Minkman & Van Buuren,

Chapter 3 Going Dutch in the Mekong Delta

2019), the translation of Dutch water management knowledge to influence climate change adaptation in the Mekong delta (Weger, 2019), the strategic efforts of Dutch and Vietnamese policy actors and their interactions in the Mekong delta (Hasan et al., 2019), and the political agenda-setting by Vietnamese policy entrepreneurs for strategic delta planning (Vo et al., 2019). In line with Weger (2019), this chapter addresses both ‘sides’ of cross-border policy interaction, and thus includes the perspectives of both the Netherlands and Vietnam. Unlike these recent studies exploring the internationalization of the Dutch water management and the making of the MDP, this chapter uses this travel of water policy ideas from the Netherlands as a case to connect the framing perspective to policy translation. This chapter adopts the framing perspective as an analytical approach for exploring the negotiation and construction of shared meaning (i.e. strategic policy frames) in cross-border policy-making. This approach helps to analyze how meanings are created and negotiated across borders, and how the key concepts and metaphors that are part of the renowned Dutch water management approach, are interpreted in local practice.

Following the introduction, Section 2 develops a conceptual framework for studying water policy translation from a framing perspective. In Section 3, the data collection and analytical strategies for the framing analysis are explained. Section 4 analyzes how the Netherlands strategically framed the Dutch water management approach as ‘global water solutions’ and subsequently developed the Dutch delta management frame. Next, this chapter addresses the development of the local context-specific frame and its embeddedness in Vietnamese water planning practices in Section 5. The discussion reflects the framing processes that have taken place, and how the key concepts of the Mekong delta management frame were interpreted in local practice. This chapter ends with conclusions and suggestions for future research.

3.2 Water policy translation: a framing perspective

Several researchers have adopted policy translation to study how water policy ideas and solutions travel across borders (Mukhtarov & Gerlak, 2013; Beveridge & Guy, 2009; Mukhtarov & Daniell, 2016; Minkman & van Buuren, 2019; Hasan et al., 2019). Policy translation offers an analytical focus on the open-ended, strategic and dynamic process of the cross-border travel of policy ideas. First, the policy translation

approach highlights the divergence, mutation and hybridization of policy ideas as they move across borders (Lendvai & Stubbs, 2007; Stone, 2017). Second, policy translation draws attention to the so-called 'bricolage'; the strategic and dynamic interaction among stakeholders in communicating and exchanging policy ideas and solutions (Stone, 2012; McCann & Ward, 2012). Third, policy translation literature argues that policy actors involved in cross-border policy making should not be conceptualized as passive and rational agents, but rather as active policy 'brokers', strategically adjusting, selecting and adapting transnational norms and ideas in their national institutional context (Clarke, 2005; Stone, 2004; 2012; McCann & Ward, 2012).

The framing perspective is well-equipped to illuminate these complex, dynamic and political characteristics of policy translation in practice. The origins of the framing concept lie in the fields of cognitive psychology (Bartlett, 1932) and anthropology (Bateson, 1972). Its more recent social-constructivist use can be traced back in particular to Goffman (1974), who argued that individuals perceive events in terms of certain 'frameworks of understanding' or 'frames', which provide them with a way of describing and interpreting the event to which it is applied. The interpretive and social constructivist framing perspective has been adopted by scholars in a broad range of disciplines, including public policy studies (e.g. Schön & Rein, 1994; van Hulst & Yanow, 2016), social movement research (e.g. Benford & Snow, 2000; Snow et al., 2014) and communication research (e.g. Scheufele & Tewksbury, 2007; D'Angelo & Kuypers, 2010). A commonality between these approaches is that a 'frame' can be considered a 'sense-making device' (Weick, 1995). A framing perspective emphasizes the different ways in which people make sense of reality and how they add meaning to a previously ambiguous or complex situation (van den Brink, 2009). Like previous water and environmental policy studies that have analyzed framing processes (e.g. McEvoy et al., 2013; Vink et al. 2013, Restemeyer et al., 2018), this chapter uses policy framing for analyzing how policy actors make sense of complex water challenges in order to define problems and promote particular solutions across borders.

Policy framing draws attention to the relevance and strategic use of language as the means to define policy problems and formulate potential solutions (van den Brink, 2009). The policy frame concept draws on the metaphor of perspective; the perspective through which policy agents see reality and act on it (Rein, 1983). Accordingly, a policy frame is understood as "a normative-prescriptive story that sets out a problematic situation and a course of action to be taken to address the problematic situation" (Rein & Laws, 2000: 93). These normative-prescriptive stories

Chapter 3 Going Dutch in the Mekong Delta

are created through a complementary process of ‘naming’ and ‘framing’, in which “things are selected for attention and named in such a way as to fit the frame constructed for the situation” (Schön & Rein, 1995: 26). The naming and framing of a problem often proceed via the use of metaphors (Schön, 1993). Policy framing also entails ‘narrating’, that is, binding all salient elements (the named and framed concepts and metaphors) together in a coherent story (van Hulst & Yanow, 2016). The resulting policy frames function as guides for doing and acting.

From a policy translation perspective, a key question is how policy meanings are negotiated, transformed and mobilized – that is, how policy frames are being created and interpreted – during cross-border travel. Connecting insights from policy translation (Lendvai & Stubbs, 2007; Clarke 2005; Stone, 2012, 2017; McCann & Ward, 2012; Muktarov, 2014) to insights from policy framing (Rein, 1983; Rein & Laws, 2000; Schön & Rein, 1995; van Hulst & Yanow, 2016) enables an in-depth analysis of (1) the creation of an international water policy frame; (2) the mobilization of this water policy frame for international use; (3) the creation of a local context-specific water policy frame based on this international frame; and (4) the process of embedding this local context-specific water policy frame in local water planning practice. Table 3.1 summarizes these four dimensions of water policy translation. It is important to note that while these four dimensions are discussed in a certain order, we consider them as iterative and interconnected, thereby acknowledging the messy and complex process of the travel of policy ideas (Peck, 2011).

Table 3.1: Dimensions of water policy translation.

Dimensions of translation	Activities
Creating an international water policy frame	<ul style="list-style-type: none">- Defining global water policy problems- Developing internationally relevant water policy solutions
Mobilizing the international water policy frame	<ul style="list-style-type: none">- Presenting and communicating the developed international water policy frame on global policy platforms- Engaging and negotiating with partner countries on the use of the international water policy frame
Creating a local context-specific water policy frame	<ul style="list-style-type: none">- Defining water policy problems in the local context- Developing local-specific water solutions

Dimensions of translation	Activities
Embedding the local context-specific water policy frame in water planning practice	<ul style="list-style-type: none"> - Building partnerships and communicating with stakeholders at different levels: international, national and local levels - Stimulating frontline practices and local implementation

3.2.1 Creating an international water policy frame

The policy translation literature (Beveridge & Guy, 2009; Lendvai & Stubbs, 2009; McCann, 2003; Hasan et al., 2019; Minkman & van Buuren, 2019) highlights the role of policy actors and experts in shaping policy ideas and concepts originating in their own countries and promoting these as relevant international policy solutions. Based on this, it can be argued that from a policy framing perspective the first dimension in water policy translation concerns the creation of an international water policy frame. The first key activity relating to this dimension is aimed at making sense of global water policy problems (the development of a problem perception). For instance, recurring water challenges such as water shortage, flood damage and water pollution are often framed as global water challenges by international development organizations (Molle & Hoanh, 2011). The creation of an international water policy frame thus involves policy actors defining global water policy problems (Prince; 2010; Stone, 2012; i). Based on this sense-making, the second key activity is the development of a global water policy or the repackaging of local water solutions to address the identified global water policy problems (the development of a course of action). Integrated Water Resources Management (IWRM) is an example of such an international water policy solution, promoted as relevant for improving the water sector in various countries (Mukhtarov & Daniell, 2016).

3.2.2 Mobilizing the water policy frame for international use

The second dimension in water policy translation concerns the mobilization of the created water policy frame for international use. Based on policy translation literature, two related key activities can again be identified. The first activity is presenting and communicating the developed global water solutions on global policy

Chapter 3 Going Dutch in the Mekong Delta

platforms (McCann & Ward, 2012; Minkman & van Buuren, 2019). Prince (2010) asserts that there is an increasing influence of global networks of policy experts on cross-border policy-making. In these networks, the created water policy frame should be accepted and adopted as an international policy model and positioned in various global policy platforms (McCann & Ward, 2012), such as the EU, which facilitates the production of knowledge and relation-building between policy actors in the formulation of e.g. EU's Urban Waste Water Directive (Beveridge & Guy, 2009). The second activity is engaging and communicating bilaterally with selected partner countries about the developed water policy frame. This activity highlights the communication and interaction between policy actors to promote the local use of the presented international water policy solutions (Stone, 2004; Paulsson, 2018).

3.2.3 Creating a local context-specific water policy frame

The third dimension in water policy translation is the creation of a local context-specific water policy frame. The interpretation of the international water policy frame for creating location-specific water policy solutions is a value-laden process (Freeman, 2009; Stone, 2012; Paulson, 2018). As Prince (2010) argued, it is seldom possible to 'carbon copy' international policies from one country to another. Rather, they need to be adapted to the local context. Similar to the key activities related to the creation of an international water policy frame, the first activity here involves defining local context-specific water policy problems. This sense-making is shaped by local interests and institutional and cultural contexts (Stone, 2017). Based on these local problem perceptions, the second activity is developing local context-specific water policy solutions. For this purpose, policy actors selectively adapt insights and concepts from the international water policy solutions to fit the specific local context (Wolman & Page, 2002; De Jong & Edelenbos, 2007; Stone, 2012).

3.2.4 Embedding the local context-specific water policy frame in water planning practice

Stone (2012) defines the embedding of the local context-specific policy frame in water planning practice as 'indigenization', in which international policies are adopted in a local context through communication and collaboration between international policy actors and local stakeholders. Again, two key activities can be distinguished.

The first activity is building partnerships with various stakeholders in the local context. Power relations play a crucial role in this process, for instance, international policy intermediaries, such as multilateral and financial institutions, may attempt to negotiate and influence the embeddedness of the developed local solutions through political means and conditional aids (Lendvai & Stubbs, 2009). An example of such influencing is the role of the Asian Development Bank (ADB) in supporting the privatization of the water sector in some Asian countries (Molle & Hoanh, 2011). The second key activity is stimulating frontline practices (Stone, 2012). Frontline practices are essential for developing a common understanding of the meaning of the local context-specific water policy frame by demonstrating how solutions that are part of this frame could be implemented and thus locally embedded (Clarke, 2005; Meijerink, & Huitema, 2010; Stone, 2012). The concrete frontline practices could be in the form of local pilot projects, local programs and exemplary local solutions.

3.3 Research methodology

To analyze the development of the Mekong Delta Plan 2013, our data collection focused both on the Netherlands and Vietnam. For the Netherlands, qualitative data was collected to study the creation of an international water policy frame by Dutch policy makers and the mobilization of this frame for international use. Key policy documents from the Dutch government and documents and reports produced by the Netherlands Water Partnership (a network of Dutch water sector organizations with international aims) were reviewed (see Table 3.2). Subsequently, semi-structured interviews were conducted with seven government officials and five consultants and experts who in the past and/or at the time of the interviews were involved in the internationalization of Dutch water management policy. Some interviewees were part of the MDP working team (see also Table 3.2).

For Vietnam, we first reviewed the Mekong Delta Plan 2013 to understand the Dutch-Vietnamese collaboration on water management, and to analyze the framing of the plan. We then collected and reviewed follow-up policy documents from the MDP, including Vietnamese government policy documents and a World Bank report (2016) (see Table 3.3).

Chapter 3 Going Dutch in the Mekong Delta

Table 3.2: Data collection for studying the creation and mobilization of the international water policy frame by the Netherlands.

Documents		Interviews	
Title		Organizations	Interview n.
1. Strategic Watercards: International Opportunities for the Dutch Water Sector (2002)		1. Rijkswaterstaat, Dutch Ministry of Infrastructure and Water Management	1
2. The Delta Approach: Introducing 12 building blocks (2014)		2. Dutch Ministry of Infrastructure and Water Management	2
3. Dutch Surge Support (DSS Water): a rapid response to water-related disasters (2015)		3. Interdepartmental Water Cluster – Dutch Ministry of Economic Affairs and Climate Policy	1
4. Dutch Risk Reduction Team: reducing the risk of water-related disasters (2011)		4. Netherlands Water Partnership	
5. Dutch Water Sector 2014-2015: Smart Water Solution for Urban Delta (2014)		5. Deltares (the Netherlands)	1
		6. Dutch Water Authorities	
6. Water innovation in the Netherlands: A brief overview (2014)		7. Delft-IHE (the Netherlands)	1
7. The Delta Program 2008			1
8. A World to Gain, A New Agenda for Aid, Trade and Investment (2013)			
9. Converging Streams – An International Water Ambition, Dutch Framework Cooperation (2016)			
10. The Mekong Delta Plan 2013			

Finally, a total of 10 semi-structured interviews were conducted, with one government official, one journalist and eight consultants and experts from the Netherlands and Vietnam who were involved in the development of the MDP and other related water management policies and projects in Vietnam (see also Table 3.3). The data collection focused on understanding how the involved Vietnamese and Dutch policy makers and stakeholders perceived the travel of the Dutch water policy

ideas. This research is based on insider's views guided by a qualitative research approach. To complement our data collection, we also used recent publications about water policy translation from the Netherlands to Vietnam.

All interviews were fully transcribed and documents and transcripts were analyzed using Atlas.ti (version 8.0) qualitative data analysis software. Our analytical strategies combined deductive coding, inductive coding and the development of code networks for the reconstruction and visualization of the created water policy frame. We first developed deductive coding schemes in Atlas.ti based on our conceptual framework (Table 3.1) to analyze the four interrelated dimensions of water policy translation. We then created inductive codes from specific language and sentence constructions used in the policy documents and by interviewees to reconstruct the framing process in both countries – dimensions 1 and 3 of water policy translation (see Table 3.1) (cf. van den Brink, 2009). Examples of these 'language codes' are concepts and metaphors like: 'delta technology', 'delta governance', 'high-tech agriculture' and 'golden triangle'. These codes were thus derived verbatim from the specific content of the policy documents and interview transcripts. Subsequently, we visualized the relationships between these language codes to show the connections between the concepts and metaphors used, and in this way reconstructed the resulting water policy frames (cf. van den Brink, 2009). For example, when reconstructing the framing process by the Netherlands, the 'integrated water safety' and 'collaborative governance' codes are part of 'delta governance', which again is part of the overall developed 'global water solutions' (see Appendix E for an overview of these code networks or water policy frames).

Table 3.3: Data collection for studying the creation and embeddedness of the Dutch water policy frame in Vietnam.

Documents		Interviews	
Title		Organizations	Interview n.
1. The Mekong Delta Plan 2013		1. Royal Haskoning DHV (Offices in the Netherlands and Vietnam)	3
2. Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project (2016)		2. Independent Dutch journalist	1
3. Project Appraisal Document for Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project (2016)		3. Dutch Ministry of Infrastructure and Water Management	2
		4. Delft University of Technology (the Netherlands)	1

Chapter 3 Going Dutch in the Mekong Delta

4. Resolution 120 on Sustainable and Climate-Resilient Development of the Mekong Delta Vietnam (2017)	5. Wageningen University and Research (the Netherlands)	1
	6. Agriterro (the Netherlands)	
	7. Climatesense.eu (international)	1
	8. Dutch Embassy Hanoi	1
	9. Vietnam Environment, Engineering and Construction JSC	1
	10. Can Tho University (Vietnam)	1
		3

3.4 The Netherlands: internationalizing Dutch water management

3.4.1 The creation of the Dutch delta management frame for global water challenges

From the perspective of a low-lying country located in a delta, the notion of ‘delta’ is unique for the identification of water problems and the development of solutions for these problems. The Netherlands frames rising sea levels, land-subsidence and urban growing pressures in delta regions as urgent global water policy problems. According to Dutch water experts and officials, global climate challenges and vulnerabilities of deltas could be seen as opportunities for the Netherlands to share and communicate their ‘delta management’ experience and expertise. As a Senior Advisor for Water Policy and Water Governance at the IHE Delft Institute for Water Education stated: “I think especially after the 1953 flood in the south-western part of the country where some 2000 people died, after which we built the Delta Works, we since then really say yes, our problem is water.” We have a lot of experience in managing this issue. “The Delta Works consists of large-scale flood protection infrastructures such as storm gates, dikes and dams. Extensive water management experience and the success of the Dutch Delta Works has kindled global attention for and interest in Dutch water management.” The Netherlands has therefore strategically framed ‘Dutch delta management’ as ‘global water solutions’ – i.e. a broad and diverse set of potential water policy solutions, not only focusing on technical expertise but also on governance approaches (especially the concept of collaboration) for addressing water

problems and climate challenges in other delta countries (see also Minkman & van Buuren, 2019; Weger, 2019).

The framing of Dutch delta management as ‘global water solutions’ consists of three major aspects (or language codes): ‘delta technology’, ‘delta governance’ and ‘Adaptive Delta Management’ (The Delta Commission, 2008; Zevenbergen et al., 2018; NWP, 2014a; NWP, 2014b; Van Alphen, 2015). First, delta technology, primarily used to mean delta protection (flood safety), water treatment and water resources for agriculture, has become a key export product of the Dutch water sector (NWP, 2014). As the Program Manager of the Interdepartmental Water Cluster, Ministry of Infrastructure and Water Management stated: ‘Using water knowledge is effective in the branding of the Netherlands’. Second, also delta governance, meaning collaborative governance and integrated thinking, has been highlighted by the Netherlands as an important international solution for coping with the vulnerabilities and challenges of deltas. Delta governance, which is part of the Dutch Delta Programme, consists of multilevel governance, legal enforcement and financial resources for flood protection while adapting to long-term climate and water-related risks (Delta Commission, 2008; Zevenbergen et al., 2018; NWP, 2014b; Van Alphen, 2015). Third, Adaptive Delta Management (ADM) is the specific delta management approach that highlights scenario planning to support the assessment of environmental and socioeconomic scenarios of deltas. ADM introduces ‘adaptation pathways’ and ‘tipping points’ to support decision-making for the implementation of various adaptive measures (Haasnoot et al., 2013; Gersonius et al., 2016; Restemeyer et al., 2017). In the creation of the Dutch ‘delta management frame’, which is visualized in Figure 3.1, the Netherlands thus focuses on presenting ‘global water solutions’ for ‘delta management’, which entail a combination of ‘delta technology’, ‘delta governance’ and ‘Adaptive Delta Management’.

3.4.2 The mobilization of the Dutch delta management frame through delta diplomacy

The Netherlands mobilizes its global water solutions through so-called ‘delta diplomacy’. This term was mentioned during an interview with the Delta Coordinator at the Ministry of Infrastructure and Water Management, who explained the Dutch international cooperation on water. From the study ‘Strategic Watercards’ (Muizer & van den Bergh, 2002) about the international competitiveness of the Dutch Water Sector, the Netherlands realized that the country wanted to

Chapter 3 Going Dutch in the Mekong Delta

increase its international market share in the water sector through strengthening international cooperation. Consequently, the Netherlands stimulates global policy platforms and international cooperation to present the Dutch delta management frame in global agendas (see also Minkman & van Buuren, 2019). During the 2015 World Conference on Disaster Reduction in Sendai, Japan, the Netherlands led the establishment of the Global Delta Coalition as international government cooperation for resilient and sustainable deltas worldwide (MIW, 2016). The appointment of a Special Envoy for International Water Affairs is also part of this delta diplomacy (MIE, 2016). The government policy report entitled ‘International Water Ambitions’ describes these international efforts as made to “enhance water security in urban deltas and to increase the Netherlands’ contribution to this effort (2016-2021)” (MIE, 2016: p. 9).

The Netherlands’ bilateral engagement on water and climate with partner delta countries is another important aspect of its delta diplomacy. A Policy Advisor of the Ministry of Infrastructure and Water Management explained the importance of working with international partners such as Vietnam, Bangladesh, Myanmar and Indonesia for embedding the Dutch water policy solutions in local water planning practice as follows: “It [international collaboration] is to develop practical knowledge on the ground with the public involvement of stakeholders to see how you can make things better in particular [water management] projects.”

The Dutch Water Sector, led by the Netherlands Water Partnership, launched a brochure introducing the 12 building blocks of the ‘Dutch Delta Approach’ illustrating significant elements and processes for sustainable delta management, based on examples and insights from the Netherlands (NWP, 2014; Minkman & van Buuren, 2019). The Ministry of Foreign Affairs also presented a communication factsheet, ‘Your partner for water solutions’ (see Figure 3.2), highlighting the roles of technical and expert teams, diplomatic missions and government representatives from ministries and embassies in internationalizing the Dutch delta management frame (MFA, 2013; MIW, 2016).

Figure 3.1: The Dutch delta management frame

Chapter 3 Going Dutch in the Mekong Delta

Figure 3.2: Communication factsheet of the Netherlands framed as 'your partner for water solutions' (Source: Ministry of Foreign Affairs, 2015).

3.5 Vietnam: striving for a safe, prosperous and sustainable Mekong delta

3.5.1 The creation of the Mekong delta management frame

The cooperation between the Netherlands and Vietnam led to the development of the Mekong Delta Plan 2013 (MDP) as strategic advice for long-term planning solutions to water and climate challenges in the Mekong delta. The MDP was developed based on the Dutch Delta Programme (Government of the Netherlands and Government of Vietnam, 2013). The aim of the Dutch Delta Programme 2008, entitled Working Together with Water, is to climate-proof the Netherlands while it remains an attractive place to live and work. Although the development of the MDP by Dutch experts and Vietnamese policy makers was based on the Dutch Delta Programme, the plan's content was adjusted according to the water problems specific to the Mekong delta (Government of the Netherlands and Government of Vietnam, 2013). As the Team Leader of the MDP Working Team explained: "[The Mekong Delta Plan] is very different from the Dutch Delta Plan [The Delta Programme] because it fits the purpose of the Mekong delta, and because there are no good reasons to export the Dutch delta approach to Vietnam. No, Vietnam has its own problems and its own challenges and its own advantages." While the problems as defined within

the Dutch delta management frame focus on water and climate issues, the Vietnamese water problems focus on the climate challenges for agricultural production and economic development (see also Hasan et al., 2019). As a result, the MDP stresses the impacts of the limited availability of fresh water, land subsidence and salt-water intrusion on agriculture as problems central to the policy (Government of the Netherlands and Government of Vietnam, 2013).

In order to deal with the environmental and climatic impacts on agriculture, the MDP recommends the agro-business industrialization scenario (agro-industry scenario) as the strategic recommendation narrating the socio-economic development and management of the Mekong delta (Government of the Netherlands and Government of Vietnam, 2013). The resulting Mekong delta management frame is visualized in Figure 3.3 (consisting of several key language codes), and under the umbrella of agro-business industrialization scenario presents four key components for a safe, prosperous and sustainable Mekong delta. First, the 'high-tech agricultural development model' includes recommendations to invest in specialized aquaculture and more sustainable use of water resources, to adapt to salinization and limited freshwater resources (see also van Staveren et al., 2018; Seijger et al., 2019; Weger, 2019; Vo et al., 2019). Second, 'long-term scenarios' are related to scenario planning, and are aimed at analysing and describing various potential scenarios for identifying and formulating preferred measures and strategies to achieve the desired vision for the delta. Third, the MDP stresses the need for a 'collaborative governance approach' that is translated into strengthening intergovernmental coordination and collaboration with various stakeholders to achieve shared visions of a sustainable Mekong delta. Fourth and last, the plan discusses the Dutch agro-business model as exemplary for the development of climate-proof and high-value agriculture. This example highlights the combination of a collaborative approach and advanced agricultural technology. Although the insights of the Dutch delta management frame significantly influenced the development of the Mekong Delta Management frame, its strategic recommendation was based on a different problem analysis and framing

Chapter 3 Going Dutch in the Mekong Delta

Figure 3.3: The Mekong delta management frame

3.5.2 Embedding the Mekong delta management frame in local water planning practice

The Netherlands cooperated with international development partners, such as the World Bank, ADB and UNDP, and donor agencies, including GIZ, JICA, AusAid and USAID, to stimulate the implementation of the strategic recommendation as formulated in the MDP (see also Hasan et al., 2019; Vo et al., 2019; Weger, 2019). As the Water Secretary at the Dutch Embassy in Hanoi explained: “This [communication process] was partly through our delta diplomacy. We engaged other (international) development partners around the idea of this delta approach.” The Vietnamese Ministry of Agriculture and Rural Development introduced the Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project (ICRSL) to propose financial loans for 376 million USD from the World Bank (MARD, 2017). In its assessment of the measures that are part of this project, the World Bank also referred to the MDP’s strategic recommendation and the cooperation with Dutch experts (World Bank, 2016). In 2017, the Vietnamese government issued Resolution 120 on the Sustainable and Climate-Resilient Development of the Mekong Delta based on its interpretation and adoption of insights from the Mekong delta management frame. In this interpretation, the resolution emphasizes the coordination between ministries and government agencies and interprovincial collaboration for implementing the MDP recommendations. Furthermore, it mentions that the strategic partnership with the Netherlands and other international organizations is recognized as a shared framework for financial assistance and scientific and technical cooperation (Government of Vietnam, 2017). This cooperation framework has led to the establishment of the Mekong Delta Forum – a policy platform created to develop and implement sustainable delta management programs for the Mekong delta (World Bank, 2015; Korbee et al., 2019; Vo et al., 2012).

Embedding the Mekong delta management frame in local water planning practice has been a long and challenging process (see also Korbee et al., 2019; Seijger et al., 2019). The Dutch international development policy in developing countries focuses more on capacity building and knowledge cooperation (promoting the use of their solutions) rather than direct financial aid (MFA, 2013; Hasan et al., 2019). Therefore, frontline practices, such as the implementation of local pilot projects, were not planned in the MDP, as was expected by the Vietnamese policy makers and stakeholders. From 2013, these unfulfilled expectations regarding the inclusion of a pilot program caused a delay of several years until the plan was institutionalized in

Chapter 3 Going Dutch in the Mekong Delta

Resolution 120 and was accepted as a framework for development and cooperation by the World Bank. A journalist who was involved in the Mekong delta consultancy projects pointed out the missing engagement with the local NGOs regarding the formulation and implementation of the MDP: “I would very much involve the local community. I would say there is no NGO involved for example...I would make a plan like that [like MDP] to involve more NGOs, and more towards the people.” Although the insights and recommendations from the MDP were formalized and adopted in Resolution 120, the Vietnamese water policy experts perceived the local adoption of the Mekong delta management frame, focusing on a transition in agricultural production, as a difficult process (see also Vo et al., 2019). The Director of Water Resources of Can Tho University explained that the difficulties in implementing the agro-industry scenario are in practice situated at the local level: “Basically, this approach [agro-industry scenario] is good in a scientific way, but it is difficult to demonstrate practical implementation at the local level especially with regard to influencing the Vietnamese culture, people and livelihoods. It will be a challenge for the government because when it [the MDP] reaches the local scale, it will be very difficult to change people’s current practices and livelihoods.”

3.6 Discussion

This chapter aimed to contribute to the emerging field of policy translation by adopting a framing perspective for exploring the meaning-making involved in the cross-border travel of water policies. Policy framing, in particular, provided a useful analytical approach to unpack and illustrate the complex meaning-making of water policy solutions as they are made to travel, and the way in which the globally renowned water solutions from the Netherlands are interpreted and used in local water planning practice. On the one hand, our reconstruction of the Mekong delta management frame showed that the Dutch delta management frame was interpreted and adapted to local realities. The key narrative shifted from a focus on an integrated perspective on water safety and environmental sustainability, to an emphasis on agricultural and economic development – presenting the agro-business industrialization scenario as the recommended solution (see also Hasan et al., 2019; Weger, 2019; Vo et al., 2019). On the other hand, our reconstruction of the Mekong delta management frame illustrated that the framing of the MDP was very similar to the original Dutch delta management frame. Key concepts and metaphors, such as

‘collaborative governance’, ‘scenario planning’ and ‘ago-industry’, were central in both frames. Critical points of attention, however, emerge when studying the local reception of the above concepts, that is, how these concepts are interpreted and used in Vietnamese water planning practice.

First, one of the key concepts of the Dutch as well as the Mekong delta management frame is ‘collaborative governance’. While ‘collaboration’ in the Dutch delta management frame refers to interactions with a broad range of stakeholders including civil society, the Mekong delta management frame highlights, in particular, the collaboration required between different ministries, across governance levels, and with international partners. The ‘collaborative governance’ as translated in the MDP does not seem to extend to local communities or other stakeholders who are potentially relevant to the plan. The Mekong delta management frame was mainly created by Dutch policy officials and consultants, together with a group of Vietnamese retired civil servants and academics – described by Hasan et al. (2019) as ‘retired reformists’. The translation and embedding of the strategic recommendation of the MDP in local water planning practice were influenced predominantly by the World Bank and other international organizations. Other research also pointed at the efforts to set-up a coalition between the Dutch water policy experts and international organizations for promoting the local implementation of the MDP (Hasan et al., 2019 & Weger, 2019; Vo et al., 2019). Vulnerable local communities were not included in the creation of the local context-specific water policy frame. The framing analysis thus showed that the inclusive dimension, which is implicit in the ‘collaborative governance’ concept in the Dutch delta management frame, was interpreted differently in the Vietnamese context.

A second critical point of attention concerns the concept of ‘scenario planning’, also central in both the Dutch and the Mekong delta management frame. In the Dutch delta management frame, ‘scenario planning’ is part of ‘Adaptive Delta Management’, emphasizing the identification of tipping points and adaptation pathways. In the Mekong delta management frame, the focus is only on ‘scenario planning’, which was interpreted as a rather linear approach. Based on an analysis of ‘long-term scenarios’, the emphasis was on identifying and formulating ‘preferred solutions’. The adaptive dimension, that is, giving attention to developing a more diverse set of policy solutions while adapting to changing scenarios, was not included. This finding is in line with the results from research by Weger (2019), stating that the Vietnamese policy makers are more interested in selecting ‘preferred’ solutions for guiding actionable policy, rather than seeking an ‘open-ended approach’ to planning and decision-making. Scenario planning was considered to be the backbone in the

Chapter 3 Going Dutch in the Mekong Delta

formulation of the MDP and attracted the attention of Vietnamese policy makers and international organizations. In practice, however, this concept was used, for example in Resolution 120 and ICRSL, as a tool for forecasting future scenarios and for identifying and thereby justifying already existing and preferred projects and solutions, which are not necessarily flexible and adaptive to the changing conditions of the Mekong delta.

A third and final point of attention concerns the ‘agro-industry’ concept, which is one of the key concepts and the strategic recommendation of the Mekong delta management frame. It recommends a transition towards a saline-based agriculture development model. However, the local use of this concept turned out to be quite challenging, as it did not resonate with existing local water planning practices. Our empirical results showed that the lack of local willingness and acceptance of this recommendation impeded embedding and translating it to practice. Similar to the ‘collaborative governance’ concept, the development and interpretation of the ‘agro-industry’ concept were not carried out together with local stakeholders. In addition, there was a lack of local pilot projects to illustrate the potential practical implementation of this concept. The findings of this research therefore suggest that translating potential promising water management solutions to local water planning practice requires a continuous learning process and inclusive communication, and meaning-making with different local stakeholders on the ground. Accordingly, based on our findings, we recommend future research to look into the reception, translation and impact of the developed Mekong delta management frame specifically on local agriculture and economy.

3.7 Conclusion

The aim of this chapter was to connect a framing perspective to policy translation to analyze language use and meaning-making in complex, dynamic and political policy translation processes. Our analysis showed that the Mekong delta management frame was developed and strategically promoted by Dutch water experts and policy officials, contributing to a lack of local ownership among the Vietnamese stakeholders and challenges regarding indigenization (Stone, 2004) of the MDP.

Based on this analysis, an important lesson can be drawn for improving cross-border policy-making for sustainable delta management, namely that inclusive engagement in the meaning-making process is crucial to create and stimulate a

shared understanding and ownership of new policy ideas. This lesson is closely connected to the relevance of continuous learning. Engagement of, and communication with, local stakeholders over a longer period of time is a prerequisite for implementing the translated concepts in practice and thus ultimately for contributing to sustainable delta management. Other research also suggests that continuous cooperation on knowledge exchange and capacity building would support the practical implementation of Dutch delta management abroad (see also Vo et al., 2019; Korbee et al., 2019 & Seijger et al, 2019). In addition, in the translation process more attention could be paid to encouraging the understanding of the origin of policy concepts and ideas, especially when concepts are being adopted in significantly different contexts. This is important to avoid potential intended 'misuse' of concepts.

To conclude, the use of the framing perspective as an analytical approach helped us to illuminate the political and dynamic process involved in the construction and negotiation of meaning in the cross-border travel of water policies. While this research focused specifically on discussing the translation of global water management solutions to local water planning practice, zooming in on one particular policy frame in Vietnam, based on our findings, a recommendation for future research is to explore in more detail how the Dutch water management solutions are translated into the local Vietnamese political economy, especially the agriculture economy. In addition, more research, in general, is needed to analyze how the translation of water policy frames influences day-to-day policy making, and what the actual impacts of globally renowned 'water solutions' are on for example the local agriculture economy 'on the ground'. Finally, combining a framing perspective on water policy translation with a comparative analysis could also enrich insights on how countries can better share policy ideas and learn from each other in order to address complex water and climate challenges, especially in vulnerable delta countries.

Chapter 3 Going Dutch in the Mekong Delta

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Chapter 3 Going Dutch in the Mekong Delta

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Chapter 4

Building Local Institutional Capacities for Urban Flood Adaptation: Lessons from the Water as Leverage Program in Semarang, Indonesia

This chapter was published as:

Laeni, N., van den Brink, M., Busscher, T., Ovink, H., & Arts, J. (2020). Building Local Institutional Capacities for Urban Flood Adaptation: Lessons from the Water as Leverage Program in Semarang, Indonesia. *Sustainability*, 12(23), 10104.
<https://doi.org/10.3390/su122310104>

Abstract

Cities in Southeast Asia face various institutional barriers to cope with climate and water-related challenges. Several international programs for urban flood resilience, therefore, stress the importance of local institutional capacity building in initiating and delivering flood adaptation solutions. However, research to provide insights and recommendations into whether and how such international resilience programs could enable the building of local institutional capacities remains scarce. To bridge this gap, this chapter presents an analytical framework to study institutional capacity building by international resilience programs, focusing on intellectual, social and political capital. The central case is the development and implementation of the Water as Leverage (WaL) program in Semarang, Indonesia. Our main results show that this program was able to stimulate the integration of knowledge, building of local coalitions, and creation of adaptation narratives, which contributed to developing six strategic climate resilience proposals. This chapter reflects on institutional strengths and weaknesses, and concludes that although the WaL program introduced an innovative approach for collaboration between international experts, urban designers and local stakeholders, sustaining momentum for the reflexive learning process, involving city-based NGOs, and establishing formal links with decision makers were key challenges that hindered the development of institutional capacities to implement the developed proposals.

Keywords: Resilience, flood resilience, flood adaptation, urban development, international program, institutional capacity, Semarang, Water as Leverage program

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

4.1 Introduction

Asian coastal cities are vulnerable to climatic and water-related risks, which are only exacerbated by on-going trends such as population growth, economic development, rapid urbanization and increased land use for agricultural production (Pillai et al., 2010). An important water challenge concerns increasing flood risks caused by climate-induced weather events, particularly extreme precipitation and rising sea levels (PBL, 2018). This applies in particular to informal settlements and vulnerable communities since these are traditionally most exposed to social and economic impacts from flood events (Lebel et al., 2010; Vinke et al., 2017). Despite the growing awareness that reducing flood risks requires careful planning for increasing resilience in current flood risk management strategies (Gersonius et al., 2016; Hegger et al., 2016; Liao, 2012; Lu & Stead, 2013; Sörensen et al., 2016; Spaans & Waterhout, 2017), their application in practice has proved to be notoriously difficult. For instance, a flood resilience approach calls for a systematic and inclusive process in which social and ecological vulnerabilities are acknowledged and opportunities to respond to an array of complex urban challenges are explored (Hegger et al., 2016). Such an approach could help cities to achieve Sustainable Development Goal 11 on inclusive, safe, resilient, and sustainable cities and human settlements (United Nations, 2020). However, currently many cities still heavily rely on a structural flood protection infrastructure, which has been criticized for its negative impacts on riverine ecosystems and its unreliability to mitigate climate change impacts (Liao, 2012; Wesselink et al., 2015). Flood adaptation strategies, which allow cities to become more flexible for and responsive to extreme climate conditions, are either underdeveloped or experience great difficulties in the transition from planning to implementation (Hegger et al., 2016; Restemeyer et al., 2015). In this context, an increasing amount of literature shows that the challenges of urban flood adaptation strategies are not only technical but are also particularly institutional in nature (see, e.g., Driessen et al., 2016; Gersonius et al., 2016). As a consequence of a lack of ‘institutional feasibility’ in existing legal, administrative, and financial frameworks, flood adaptation strategies are confronted with implementation barriers (Gersonius et al., 2016; Pahl-Wostl et al., 2013).

A flood resilience approach revolves around urban flood adaptation, including flexible measures and multi-functional designs, such as spatial reservations for water retention, flood-proof buildings, and water-sensitive neighborhoods (Brown et al., 2018; Liao, 2012; C. Pahl-Wostl et al., 2013; Restemeyer et al., 2018).

However, in many countries, responsibilities to develop and implement flood risk management strategies are distributed among many different government organizations, which oftentimes strictly stay within the remit of their organization (see, e.g., (Handayani et al., 2019; Saito, 2012)). Moreover, while stakeholder inclusion and open communication are important for building trust and a shared understanding of the issues, and also for ensuring the inclusion of the interests of the most vulnerable groups (Lebel et al., 2006), such collaborative public engagement is often lacking in flood risk management processes. In the context of Southeast Asia, flood management institutions tend to concentrate on the promotion of large-scale flood protection infrastructure at the expense of local flood adaptation initiatives (Handayani et al., 2019; Marks & Elinoff, 2019). As a consequence, in order to allow the development and implementation of urban flood adaptation strategies, existing institutional capacities, particularly at the city level, need to be transformed.

International resilience programs in Southeast Asia are also paying increasingly more attention to the role of cities and their institutional capacity to initiate and deliver flood adaptation solutions for achieving sustainable and resilient urban development. For instance, the Asian Cities Climate Change Resilience Network (ACCCRN; 2008-2016) provided funding for flood adaptation micro-interventions (such as pilot projects) and the establishment of a knowledge network to support local government agencies and academics in ‘mainstreaming’ resilience policy and climate adaptation programs (Kernaghan & da Silva, 2014). As another example, the 100 Resilient Cities Programme (100RC) (2013-2019) funded a chief resilience officer for each city member and assisted the city governments to formulate and implement a comprehensive and city-wide resilience strategy (Spaans & Waterhout, 2017). A more recent program, the Water as Leverage (WaL) Program for Resilient Cities Asia (2018–present), promotes the development of local institutional capacities to co-create urban flood adaptation solutions in the vulnerable Asian coastal cities of Chennai in India, Khulna in Bangladesh, and Semarang in Indonesia (Water as Leverage, 2019a). While previous studies have mainly focused on the assessment of the outcome of these international resilience programs, i.e., the ability of such programs to operationalize, and institutionalize resilience policy changes in the national and local planning institutional contexts (Brown et al., 2012; Friend et al., 2014; Kernaghan & da Silva, 2014; Reed et al., 2014), research providing insight into whether and how these programs have succeeded in building local institutional capacities remains scarce.

This chapter aims to bridge this gap by exploring whether and how international resilience programs enable the building of local institutional capacities

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

for the development and implementation of flood adaptation strategies in Southeast Asian cities. As proposed by Cars et al. (Cars et al., 2017) and Healey (Healey, 1998, 2003), the building of institutional capacity for transformative impacts in local contexts requires the development of intellectual, social, and political capital. These three elements of institutional capital also structure our analytical framework, which integrates insights from flood resilience literature (e.g. Brown et al., 2018; Gersonius et al., 2016; Hegger et al., 2016; Liao, 2012; Restemeyer et al., 2015; Scott et al., 2013; Sörensen et al., 2016)) and institutional capacity building literature (e.g. Booher & Innes, 2002; Cars et al., 2017; Dai et al., 2017; Healey, 1998; Khakee, 2010; Pahl-Wostl et al., 2007)). By means of this framework, we can analyze whether and how programs succeed in developing local institutional capacity for urban flood adaptation. We focus on the WaL program in Semarang, Indonesia. Semarang has strong experience in international collaboration for urban resilience. The city was not only selected as one of the pilot cities of the WaL program but was also previously part of both the ACCCRN and the 100RC Programme.

The remainder of this chapter is structured as follows. Section 2 elaborates on our analytical framework and explains the three institutional capitals required for analyzing local institutional capacity building for urban flood adaptation. The research methodology and case study are explained in Section 3. Section 4 presents an empirical analysis of the process design and outlines the key activities that have thus far been part of the WaL program in Semarang. Section 5 discusses the key findings by reflecting on the institutional challenges and weaknesses that the WaL program, and also other international resilience programs in Southeast Asia and other developing countries, encounter in local institutional capacity building for urban flood adaptation. This chapter ends with conclusions and recommendations for international resilience programs aiming to create sustainable local impacts in climate and coastal vulnerable cities and regions.

4.2 Local institutional capacity building: international resilience programs for urban flood adaptation

Developing and implementing urban flood adaptation strategies requires local institutional capacities that enable the exploration of innovative ideas, collaboration and experimentation with new approaches, and the transformation of existing policy

practices (Gersonius et al., 2016; Lebel et al., 2006; Liao, 2012; Pelling et al., 2008; Sörensen et al., 2016). Urban flood adaptation strategies can incorporate new ways to stimulate inclusive stakeholder engagement and the integration of flood adaptation solutions in spatial planning and urban design (Hegger et al., 2016; Pahl-Wostl, 2009; Restemeyer et al., 2015; Sörensen et al., 2016). Currently, many Southeast Asian cities lack the institutional capacity to engage in urban flood adaptation. In general, institutional capacity is referred to as the capacity of urban governance to increase the qualities of places (Cars et al., 2017). This capacity is reflected in collective resources, the mobilization of actions from social relations, and the interaction between local stakeholders within government, private, and voluntary sectors (Healey, 1998). According to various planning scholars (Booher & Innes, 2002; Cars et al., 2017; Healey, 1998; Khakee, 2010), ‘institutional capital’ is a conceptual device that is used to link three key elements in social interaction and place-making, namely intellectual capital, social capital, and political capital. As explained by Cars et al. (Cars et al., 2017), “building ‘institutional capacity’ requires transforming, creating, and mobilizing ‘institutional capitals’ of a place in the collective effort of shaping its future” (Cars et al., 2017, p. 54).

To study how international resilience programs – in their process designs and program activities – enable the building of local institutional capacities, we continue on the distinction between intellectual, social, and political capital. Intellectual capital refers to the ability to draw insights and expertise from a wide range of knowledge resources and to organize the learning processes needed for understanding and exploring policy contexts and solutions (Khakee, 2010). Social capital refers to the ability to organize inclusive and collaborative processes to create mutual trust and build relational networks between a wide range of actors (Aldrich & Meyer, 2014). Political capital reflects the ability to mobilize resources and build shared consensus and perspectives for achieving policy outcomes (Healey, 2003). Based on insights from flood resilience literature (Dai et al., 2017; Driessen et al., 2016; Gersonius et al., 2016; Hegger et al., 2016; Liao, 2012; Restemeyer et al., 2015; Sörensen et al., 2016), we converted these three capitals into an analytical framework for examining the institutional capacity building efforts by international resilience programs, as presented in Table 4.1.

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

4.2.1 Intellectual Capital

Knowledge resources and learning are crucial to form an adequate problem definition and to develop suitable policy solutions. The following four key attributes are important in the build-up of knowledge resources and the organization of learning in international resilience programs (cf. Bergsma, 2016; Liao, 2012; Pahl-Wostl, Becker, et al., 2013; Restemeyer et al., 2015). Firstly, the program needs to integrate knowledge from various fields of expertise, such as engineering, spatial design and planning, disaster and emergency management, and environmental ecology (Driessen et al., 2016; Restemeyer et al., 2015). Bergsma (2016), for example, asserts that spatial planning knowledge is essential for reducing flood risks by defining “what measures are available to local actors to make flood-resilient location choices or to flood-proof their buildings, [and what costs are involved] with taking such measures.” In this context, Pahl-Wostl et al. (2013) highlight the informal space that is needed to support the integration of knowledge and experimentation with flood adaptation initiatives.

The program could organize ‘soft spaces’, such as in the form of technical consultation, an examination by an independent panel, and a joint working group with policy makers from multiple agencies from regional, national, and international levels, to integrate a wide range of knowledge resources and expertise in the development of flood adaptation strategies (Allmendinger & Haughton, 2009). Secondly, it is also important that international resilience programs incorporate local knowledge and insights from local communities and stakeholders regarding the local context and culture. This leads to an in-depth understanding of social vulnerabilities that are derived from environmental and climate challenges (Bergsma, 2016; Pelling & High, 2005). In addition, by integrating local insights and knowledge into the process design of the program and in its activities, it is possible to formulate and co-create flood adaptation solutions.

Thirdly, international resilience programs should enable cities to reflect on and improve existing flood risk management through single-loop learning. Single-loop learning refers to a learning process that aims at the incremental improvement of existing goals and strategies (Pahl-Wostl et al., 2013). The learning process could, for instance, focus on enhancing or building on existing flood adaptation initiatives, such as providing local communities with more resources for flood preparedness or scaling up rain harvesting projects in communities.

Table 4.1: An analytical framework for analyzing local institutional capacity building by international resilience programs.

Elements	Attributes	Activities	Key References
Intellectual capital	Knowledge integration	Combining various fields of expertise, such as spatial design and planning, disaster and emergency management, engineering, hydrology, and ecology	Restemeyer et al. (2015); Driessen et al. (2016); Bergsma (2016)
	Local knowledge	Using insights, experiences, and perspectives of local actors, especially regarding social and physical vulnerabilities	Pelling and High (2005); Bergsma (2016)
	Single-loop learning	Improving policy implementation and monitoring processes to realize existing policy goals and strategies	Gupta et al. (2010); Pahl-Wostl et al. (2013)
	Double-loop learning	Reflecting on and adjusting existing policy goals and strategies, allowing exploration and experimentation with innovative approaches and new ideas	Pahl-Wostl et al. (2013); Folke et al. (2010); Gersonius et al. (2016)
Social capital	Inclusiveness	Stimulating collaborative processes between diverse stakeholders at different levels and supporting close engagement with communities	Wesselink (2016); Restemeyer et al. (2015); Gersonius et al. (2016)
	Shared values	Creating shared values on holistic and social dimensions in the design of flood adaptation solutions	Cars et al. (2017); Liao (2012); Lebel et al. (2010); Pelling and High (2005)
	Network integration	Integrating wider climate resilience and flood risk management networks	Cars et al. (2017); Pahl-Wostl (2009); Khakee (2010)
Political capital	Local ownership	Supporting dialog and shared responsibilities by local actors to adopt and develop flood adaptation solutions	Booher and Innes (2002); Bergsma (2016)
	Resources mobilization	Drawing essential financial and human resources, and technical capacities, to develop and implement flood adaptation solutions	Healey (1998); Cars et al. (2017); Khakee (2010); Restemeyer et al. (2015)
	Policy alignment	Embedding flood adaptation solutions in formal administrative and decision-making processes	Breukers and Wolsink (2007); Wesselink (2016)

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

Elements	Attributes	Activities	Key References
	Building a narrative	Create aspiring agendas to attract funding and influence decision making for transforming flood adaptation practices	Davoudi et al. (2012); Restemeyer et al. (2018)
	Change-agents	Stimulating leadership roles of front-runners, initiators, and local champions to influence and sustain policy efforts	Healey (1998); Khakee (2010); Restemeyer et al. (2015); Meijerink et al. (2010)

Fourthly and finally, intellectual capital for urban flood adaptation also requires double-loop learning, which, in the context of international resilience programs, refers to the organization of a more critical and reflexive learning process aimed at the existing problem framing, the strategic goals, and the policy formulation process. Double-loop learning, therefore, entails the continuous exploration of innovative approaches that have resulted in the development and experimentation of new measures (Pahl-Wostl et al., 2013; Claudia Pahl-Wostl, 2009). As explained by Restemeyer et al. (2015), flood adaptation requires a mindset among policy makers and stakeholders that not only emphasizes urban flood safety but also includes added values, such as spatial quality and the natural environment. For long-term flood adaptation, after the program has ended, the city itself should be able to initiate and organize the learning process for building intellectual capital.

4.2.2 Social Capital

Social capital involves forging and maintaining social relations and interactions between a wide range of actors. This will build relational resources that enable coalition building and the development of shared values for influencing decision-making in the policy process (Pelling & High, 2005). Firstly, in building social capital for flood adaptation, inclusiveness is necessary regarding the collaboration between various stakeholders, both individuals and institutions within government, private, NGO, academic, finance, and other sectors in society, as this creates network power from diverse participants (Booher & Innes, 2002). Diverse participation and open communication in international resilience programs can create trust and a shared understanding of promoting local collective actions to reduce flood risks (Lebel et al., 2006). Secondly, international resilience programs could encourage the development

of shared values among policy makers and stakeholders to promote an inclusive flood adaptation approach, which aims to reduce vulnerabilities to floods among disadvantaged communities, particularly in the context of developing countries. The consideration of social vulnerabilities and the adoption of a holistic perspective, which takes into account social, ecological, and economic dimensions of urban and water systems, are important for coalition-building towards and policy change for flood adaptation (Hegger et al., 2016; Lebel et al., 2006; Restemeyer et al., 2015; Sørensen et al., 2016). Thirdly, building social capital requires network integration to connect various policy networks and social groups (e.g., connecting local-based networks to international organizations) in order to increase mutual understanding and strengthen collaboration to tackle the issue of flood adaptation (Cars et al., 2017; Pahl-Wostl, 2009). International resilience programs could stimulate and improve the connection between networks established at the city level within the program with other and wider networks at regional, national, and international levels. The establishment of new and improved connections relates to the mobilization of resources, which we discuss in more depth in the following sub-section on political capital.

4.2.3 Political Capital

Political capital reflects the ability to obtain essential public and private resources and to formalize the developed flood adaptation strategies in legal, administrative, and policy frameworks (Restemeyer et al., 2015). Several studies have identified different attributes of political capital for developing and implementing new policy initiatives (Booher & Innes, 2002; Breukers & Wolsink, 2007; Khakee, 2010). The generation of political capital for urban flood adaptation firstly requires local ownership of flood adaptation ideas, solutions, and measures. Wesslink et al. (Wesslink et al., 2015), for instance, argues that adaptation strategies should be developed together with regional and municipal planning authorities. Moreover, local willingness, interests and responsibility are essential for policy change. It is therefore important that international resilience programs stimulate local ownership of the process and the developed solutions.

Secondly, the mobilization of resources, such as funding, human resources, and technical capacities, is essential in international resilience programs. This aspect also includes the ability to draw political support for local initiatives (Khakee, 2010). In this context, sharing resources and responsibilities among public and private

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

actors in reducing flood risks is becoming increasingly relevant (Restemeyer et al., 2015). International resilience programs could facilitate and coordinate resource mobilization for the city government and local NGOs, for instance, access funding for strategy development and implementation.

Thirdly, policy alignment is important to ensure the swift implementation of the developed flood adaptation solutions by embedding them in the formal policy process at the local, regional, and national governance levels (Breukers & Wolsink, 2007). The aim of international resilience programs then is to deliberately influence decision making at the political level to support flood adaptation initiatives to, for example, integrate flood adaptation in a wider planning system such as local land-use planning, transportation systems, and blue-green infrastructure development (Sörensen et al., 2016; Wesselink et al., 2015).

Fourthly, it is essential that international resilience programs build a narrative of adaptation, that is, build a political story of inspiration and aspiration that can connect, put on the agenda, activate, attract funding, convince decision makers, and strengthen collaboration across sectors and levels (Davoudi et al., 2012). For example, according to Restemeyer et al. (Restemeyer et al., 2018), a resilience narrative can transform flood risk management practices, and create an agenda that can drive change, stimulate the exploration of new pathways, set an agenda, and test the unknown. As a result, the created narrative could formalize the informal, and turn ambitious adaptation strategies into policy implementation. Fifthly and finally, the engagement of local change-agents, such as resilience front-runners, epistemic communities (experts and universities), and local champions, is important for stimulating and influencing policy change and sustaining long-term resilience policy efforts (Cars et al., 2017; Pahl-Wostl et al., 2013). By empowering these local change-agents, international resilience programs could enhance the overall local institutional capacities by facilitating the exploration of innovative policy processes and solutions for flood adaptation (Lebel et al., 2006; Meijerink et al., 2010).

4.3 Research Methods

4.3.1 Case Study: Water as Leverage for Resilient Cities Asia in Semarang

We used the Water as Leverage (WaL) for Resilient Cities Asia program in Semarang, Indonesia, as a central case study for analyzing local institutional capacity building for urban flood adaptation. Building on the experience of the Rebuild by Design

(RBD) program that was set up after Hurricane Sandy hit New York and New Jersey (Lochhead, 2017; Trogrlić et al., 2018), the WaL program introduced a resilience by design approach in the context of developing countries in Southeast Asia. Resilience by design was modeled as: “an opportunity to innovate and develop more creative solutions and integrated strategies that could build resilience, sustainability and livability into solutions” (Lochhead, 2017, p. 8). The former principal of rebuild by design, who is currently the Special Envoy for International Water Affairs for the Netherlands, initiated the Water as Leverage program in collaboration with the 100 Resilient Cities program created by the Rockefeller’s Foundation, the Asian Infrastructure Investment Bank, UN-Habitat, and various international partners (International Architecture Biennale Rotterdam, Architecture Workroom Brussels, the Global Centre on Adaptation, the Dutch Environmental Assessment Agency, Deltares, Fabrications, the OECD, WWF, FMO, the World Bank Group, the Islamic Development Bank, the Green Climate Fund, the Asian Development Bank, and the German Development Bank (KFW)). The WaL program is the first experiment and application of a ‘resilience by design’ approach in other countries, especially in developing countries.

The development and implementation of the WaL program were funded by the Dutch government, i.e., the Ministry of Foreign Affairs, and was executed by the Netherlands Enterprise & Development Agency (RVO). The Water as Leverage program in Semarang had four main goals to address flood and climate risks in Asian cities (Government of the Netherlands, 2019). The first was to identify and develop holistic and integrated climate solutions with the opportunity to scale-up and replicate these solutions (for an overview of the developed climate resilience proposals in Semarang see Figure 4.1). The second goal was to build stakeholder coalitions for the co-creation of climate solutions (see Figure 4.2). The third main goal was to introduce and broker innovative financial arrangements together with financial and governmental partners, and thereby institutionalize the developed climate solutions in practice. Finally, the fourth goal was to use these first projects as opportunities to replicate and scale-up to catalyze sustainable development and climate action across Asia and the world (Government of the Netherlands, 2019; Water as Leverage, 2019a, 2019b). It should be noted that one of the co-authors of this chapter is also the initiator of the program and the Special Envoy for International Water Affairs for the Netherlands. His contribution was twofold: he firstly provided access to data in the shape of program workshops, initial sets of interviews, and program documents, and, secondly, after the data collection and

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

analysis were completed, he reflected and validated the findings based on his personal experience in the program.

4.3.2 Data collection and analysis

This chapter is based on qualitative data obtained from participatory observations, semi-structured interviews, and the analysis of policy documents and reports. The fieldwork in Semarang was conducted during March and April of 2019. During the fieldwork, several meetings, workshops, and field visits were attended and arranged (see Appendix Table A2). These included field visits to potential program pilot sites, three meetings with academics and experts in Indonesia, a meeting in the Netherlands between the Cascading Semarang team and the University of Diponegoro (UNDIP), and three discussions with community leaders and villagers in Semarang.

In total, 23 in-depth semi-structured interviews were conducted with participants and local, national, and international partners of the WaL program, the WaL program team, members of the multidisciplinary design teams, local policy officials, local academics, and local NGOs (see Appendix Table A3). The interviewees were asked to explain and reflect on local flood problems, the ongoing flood resilience policies and initiatives in Semarang, and the implementation of the WaL program, that is, the institutional capacity building process for the development and implementation of the climate solutions

Each interview was audio-recorded and fully transcribed. All research participants, organizers, and interviewees were informed of the purpose of this research and consented to the use of audio-recording and the interpretation of the data for this research. With the help of a local research assistance team at UNDIP, some meetings and interviews were conducted in the local language, Bahasa Indonesia, and later translated into English. Key policy documents and reports were also used to analyze local institutional capacity building for Semarang's flood adaptation. In total, 16 documents were used for this research, including program documents, seminar materials, and relevant resilience policy documents of the city of Semarang, such as its resilience strategy and the governmental spatial mid-term plan of the city of Semarang (see Appendix Table A1).

Figure 4.1: Conceptual design of the climate resilience proposals developed in the Water as Leverage program in Semarang (Source: Water as Leverage 2019 – image produced by the two design teams One Resilient Semarang and Cascading Semarang).

Our analysis consisted of three main steps. The first step entailed exploring the local context, including the flood risks, and past and ongoing flood adaptation initiatives and programs in Semarang. In this step, we encapsulated the city's experience in international flood resilience programs, such as the ACCCRN and the 100RC Programme. The second step was the explorative analysis of the process of the WaL program. In this step, we identified the key actors involved, the program background, activities, and challenges. The third step was to investigate how the WaL program attempted to build on the institutional capitals described in Section 2. Code networks were developed for analyzing each type of capital – intellectual, social, and political capital – based on the analytical framework in Table 1. The documents and transcripts from the interviews, meetings, and discussions were thus deductively coded, using the computer program Atlas.ti (version 8).

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

4.4 The Water as Leverage Program in Semarang: a collaborative and design process for local institutional capacity building

The WaL program is built on the idea that the program can constitute an ‘enabling environment’ for multidisciplinary design teams to identify local challenges and co-design resilience solutions with local stakeholders. This is referred to as a ‘soft space’ to design, develop, and implement climate solutions for local partners and stakeholders. Our analysis revealed three main processes that occurred within this soft space and can be seen as geared towards building different elements of institutional capital: (i) research and analysis of the local context (design-based research), (ii) co-creation and collaboration for design strategic climate solutions, and (iii) proposal development for finance and implementation.

THE WATER AS LEVERAGE APPROACH

- ✓ All stakeholders involved from day one
- ✓ Responsive to changing environment
- ✓ Scalable and replicable in multiple environments
- ✓ Risk of failure reduced

- People**
Combine the world's best expertise with local talent.
- R&D**
Catalyze innovative processes to understand vulnerabilities to future risks and uncertainties.
- Integration**
Co-ordinate closely with local communities and governments in an agile working environment.
- Process**
Ensure Government and community stakeholders work closely with experts from day one.
- Finance**
Source innovative project funding through public private partnerships, blended and private finance initiatives.

Water as Leverage is an initiative of the Government of the Netherlands

Water as Leverage ©2019 www.waterasleverage.org

Figure 4.2: The Water as Leverage method (Source: Dutch Special Envoy for International Water Affairs 2019).

In Table 2, we outline some key activities that the WaL program has undertaken in relation to the build-up of intellectual capital, social capital, and political capital. We then present a more detailed analysis of how these key activities were perceived and translated into institutional capacity building in practice at the city level in Semarang.

Table 4.2: Overview of key Water as Leverage (WaL) activities for local institutional capacity in Semarang, Indonesia.

Attributes	WaL Key Activities
<i>Intellectual capital</i>	
Knowledge integration	<ul style="list-style-type: none"> - A design contest for the selection of multidisciplinary design teams to engage in a local collaborative research and design process - The formulation of integrated and holistic climate solutions, based on multidisciplinary perspectives
Local knowledge	<ul style="list-style-type: none"> - Multiple rounds of local workshops in 2018, which facilitated an exchange of past experiences and reflections on successes and challenges of previous international resilience programs and water-related international development projects
Single-loop learning	<ul style="list-style-type: none"> - Discussions during local design workshops between relevant governmental agencies, NGOs, and universities to build on existing flood adaptation initiatives, such as community-based risk management, which is materialized in the Networks of Resilient Kampung program
Double-loop learning	<ul style="list-style-type: none"> - Presentation of sets of comprehensive climate resilience proposals to influence a change of perspective and local planning practice by focusing on draining the water, that is, a shift from ‘keeping the city dry’ to ‘no drop gets lost’ by reserving water resources and preventing groundwater extraction
<i>Social capital</i>	
Inclusiveness	<ul style="list-style-type: none"> - Organization of multiple rounds of local workshops and design workshops together with the Semarang Planning Agency, the city government of Semarang, and universities to gain input from local policy actors, stakeholders, and communities to identify local vulnerabilities and challenges, and to develop climate resilience proposals - Local members of the design teams and universities (WaL knowledge partner) organized and facilitated focus group discussions between the design teams and local communities

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

Attributes	WaL Key Activities
Shared values	<ul style="list-style-type: none"> - The selection criteria during the design contest, and the call for action, specify the emphasis on the holistic and social dimensions in the design of the proposals - Illustration and communication of shared values on the holistic and social dimensions to government agencies and local stakeholders in the local workshops and design workshops
Network integration	<ul style="list-style-type: none"> - The organization of multiple rounds of local workshops and design workshops was in collaboration with governmental agencies and NGOs, such as Partnership for Resilience (a network of national and local NGOs collaborating on mainstreaming resilience policy), to support the design process
<i>Political capital</i>	
Local ownership	<ul style="list-style-type: none"> - The coordination with the Semarang Planning Agency, the City Government of Semarang, and the city's resilience team for shared responsibilities in the local set-up and arrangement of the WaL activities in Semarang - Communication with local policy officials for translation of the resilience concept in the city's government planning inspired by the conceptual design of the strategic climate resilience proposals
Resources mobilization	<ul style="list-style-type: none"> - The organization of sessions on climate financing such as the Regional Workshop in Singapore 2019, where the design teams could present their proposed climate resilience proposals and to discuss the financial project feasibility and implementation with financial institutions and international development partners - The organization of sessions during local consultation workshops between the design teams, local partners and international financial institutions
Policy alignment	<ul style="list-style-type: none"> - The organization of interactions between the program and the Delegated Representative Water Netherlands-Indonesia responsible so as to embed the WaL program in the memorandum of understanding (MOU) bilateral water cooperation between the Netherlands and Indonesia - Establishment of a local WaL taskforce by the local program partners and local members of the design teams for the coordination and communication about the proposed strategic climate resilience proposals at the regional and national government

Attributes	WaL Key Activities
Building narratives	- Development and presentation of a narrative for changing the city's flood risk management and water management to create a shared vision on integrating spatial flood adaptation
Change-agents	- Partnership with Semarang city's resilience team, which includes a network of the city's governmental agencies such as the Semarang Planning Agency, local NGOs, and universities for the set-up, initiation, and implementation of the WaL program

4.4.1 Intellectual capital

The WaL program created opportunities for the involved multidisciplinary design teams to co-create water and climate solutions with local stakeholders in Semarang (Government of the Netherlands, 2019). With respect to knowledge integration, the program launched a 'Call for Action' for designers around the world to participate in a climate resilience design competition. The selected multidisciplinary design teams in Semarang, One Semarang and Cascading Semarang, included team members from a wide range of fields such as engineering, spatial design, urban planning, urban design, hydrology, and ecology (Water as Leverage, 2019b). The design teams were tasked with conducting design-based research, for which each team had to produce an in-depth research and analysis report in which they outlined interconnected environmental and urban risks, connected different flood risk management initiatives, and identified potential flood and climate resilience solutions for Semarang (Cascading Semarang, 2018; One Resilient Semarang, 2018). Both teams conducted the research and analysis to identify existing water and climate challenges and to explore potential holistic and integrated water and climate solutions for the city (Cascading Semarang, 2018; One Resilient Semarang, 2018). As a team member from One Semarang explained: "If all of the five proposals were implemented simultaneously, I think the impact on the city would be good in the sense that it's comprehensive and holistic." Initially, the two design teams worked separately on the design-based research and each performed their community engagement and focus-group discussions. However, over time, the two teams decided that it worked best to integrate their proposed resilience solutions and collaborations with local stakeholders. In the end, the two teams also jointly presented their city's flood and climate solutions. The design teams thus combined their solutions into six strategic water climate resilience proposals, which were presented as a coherent programmatic

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

approach for improving Semarang's flood and climate resilience (Water as Leverage, 2019b). This integrated approach and the related six strategic proposals are outlined in Table 2, and present a combination of spatial adaptation measures, ecological and nature-based solutions, canal revitalization, and community flood preparedness.

With regard to local knowledge, the program organized several rounds of discussions during a local workshop in 2018. These discussions were meant to integrate Semarang's experience of previous resilience programs (such as ACCCRN and the 100RC Programme) with Water as Leverage program. Program documents also emphasized the need for the integration of a broad range of knowledge, expertise, and the consideration of local insights, perspectives, and experience in order to deliver climate resilience proposals (see Table 4.3). However, at the same time, the program was perhaps too instrumental in its approach to doing so. Local stakeholders, such as the Partnership for Resilience (PFR), NGOs working on climate change and ecosystem management, and restoration programs that are supported by the Dutch Ministry of Foreign Affairs, felt there was still room to strengthen the integration of local insights especially regarding the inclusion of context-specific knowledge of local NGOs into the design of the resilience solutions. As the resources mobilization director of the Indonesia Science fund, who coordinated WaL activities with the local government, argued:

From my observation, I guess this involvement of this PFR (Partnership for Resilience) is not as much as it should be, but again I understand. Because, initially, the focus was mostly on the technical aspects and only thereafter on the design perspective.

The co-creation of strategic climate solutions has also stimulated both single-loop and double-loop learning processes among local partners and stakeholders. In relation to single-loop learning, the formulation of the six strategic climate resilience proposals was built from existing initiatives and ongoing projects, such as community-based risk management, with an attempt to improve, modify, and integrate these with other flood adaptation solutions. A local team member from One Semarang mentioned a particular initiative from the proposals:

One of our concepts is 'Networks of Resilient Kampung' that is working for the community on the ground. It involves the modification of existing initiatives [the village level Disaster Preparedness Group (KSB)]. I mean it is good to work with them to learn from previous experiences and what can be modified and improved.

With regard to double-loop learning, the designed climate resilience solutions required the city's water planning and flood risk management approach to change focus from mainly "keeping the city dry" to "tapping into the water abundance and its possibilities" (Water as Leverage, 2019b). Against this backdrop, the Cascading Semarang team proposed effective storing and utilizing water resources to prevent groundwater usage in order to reduce urban flooding risks from land-subsidence. The corresponding strategic climate resilience proposals combine different flood adaptation measures to also instigate policy change in Semarang's planning and water management agencies. Learning and exchanging ideas on flood adaptation solutions were central in this learning process (Cascading Semarang, 2018). As Semarang's chief resilience technical coordinator of the city's resilience team stated: "We cannot rely on the government budget to solve all the water problems. From Water as Leverage, we learned how to innovate by expanding our work with international partners and international donors.' In this context, Semarang's chief resilience officer, also part of the city's resilience team, referred to the 'Feeding the industry' concept:

We learned a lot from the Water as Leverage process on how to retain the water. The other [strategic climate resilience proposal] concept was 'Feeding industries'. They [the design teams] have that concept to make the water resource allocation to industries. Just like that, we can learn from international experts.

The challenge now is to keep the continuation of research and analysis for the design of climate solutions in the local planning process.

Table 4.3: An overview of the WaL multidisciplinary design teams and the proposed strategic climate solutions for Semarang.

Teams	Design Consortium Members	Strategic Climate Resilience Proposals
One Resilient Semarang	One Architecture & Urbanism, Deltares, Wetlands International, Kota Kita, Sherwood Design Engineers, Hysteria Grobak, Iqbal Reza, UNDIP	<ol style="list-style-type: none"> 1. Water-Neutral industry (Demand) 2. Networks of resilient kampungs 3. Integrated protective coastal zone

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

Cascading Semarang	MLA+, Deltares, Fabrications, PT Witteveen+Bos Indonesia, UNDIP, UNISSULA, IDN Livable Cities	4. Feeding the industry (Supply) 5. Spongy Mountain Terraces 6. Rechanneling the city
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4.4.2 Social capital

To enable the co-creation of climate solutions, the program organized several local workshops and design workshops in Semarang (Government of the Netherlands, 2019). In parallel, the design teams also conducted smaller stakeholder consultation activities, such as focus-group discussions and informal meetings with local communities. These activities are not only related to building intellectual capital, as discussed above but also to building social capital at the local level. In relation to inclusiveness, the WaL local workshops and design workshops were organized to ensure that the design teams engaged with local stakeholders and partners at the city level for thinking along with the key challenges and priorities in the design process (see Figure 4.2). As a team member from One Semarang stated: “The process is trying to get everyone aligned with the same vision.... It just needs some effort to organize this process [of local engagement and collaboration] on the ground [bottom-up process].” However, there are some challenges in the inclusive collaboration process during the design of the adaptation strategies. For instance, a local team member who supported the community engagement of Cascading Semarang argued that local communities were more than interested in the concrete outcomes of projects but at the same time were less willing to engage or give input in the conceptual design process. The design teams experienced that the community members, who participated in the focus-group discussions, were reluctant to participate in the process since they were uncertain whether and how the project would be implemented. In addition, it was perceived as more challenging for local NGOs with limited resources to invest in the design contest. A local knowledge partner asserted that the program could have involved more local NGOs in the process: “They (the WaL program) needed to invite a wider range of participants, not only from the government but also from local NGOs. Semarang has a lot of NGOs and environmental NGOs. They have a lot of experience.” The involvement of more local NGOs could have been rather valuable for inclusive collaboration and the embeddedness of the program in the local context.

With regard to shared values, the WaL program promoted holistic flood adaptation measures and social outcomes for the design and implementation of the climate resilience program. The program emphasized the holistic and social dimensions in the ‘Water as Leverage Guidelines’ for the selection and evaluation of the proposals from the design teams. A team member from ‘Cascading Semarang’ stressed the social components in the proposed solutions as follows: “We took these by heart and I think that’s why we now have the [strategic climate resilience proposals].” The shared values are also illustrated in the design of the strategic climate resilience solutions and the communication with the local governmental agencies and NGOs during the local workshops.

In relation to network integration, the WaL program connected the multidisciplinary design teams with a network of NGOs such as Partnership for Resilience (PFR). In this context, a coordinator of PFR in Indonesia said: “We are connected to the Global Team in the Netherlands and we agreed to be a knowledge partner in the Water as Leverage [program].” Accordingly, representatives from the PFR participated in the local workshops and design workshops to give their input to the design teams especially regarding the alignment of the design of the solutions with existing water and flood resilience programs. The city (city government, city’s resilience team, and local NGOs) itself was also open to collaboration with new partners from other cities or countries. As a local knowledge partner from Bintari Foundation (the Indonesia Association for Sustainable Development), a Semarang-based NGO, said: “Semarang is famous. I heard that the innovation of Semarang is [that the city is] open and open-minded and that they (the local government and NGOs) are also very open for collaboration.” Based on their experience with international collaborations for flood and climate resilience, Semarang thus built extensive social capital to organize knowledge exchange and for international collaboration. The program was able to capitalize and further contribute to this capital by connecting local stakeholders with several international experts such as urban designers and landscape architects. However, the limited timeframe of the program constrained the community engagement process and in-depth consultation with local NGOs. The limited presence of the Semarang-based NGOs and the fact that the members of the teams were not based in the city were perceived as challenges to the local engagement process.

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

4.4.3 Political capital

The building of political capital at the local level is important for the WaL program and for the design teams to bring the strategic climate resilience proposals to implementation. This involves communication and coordination at the local, national, and international levels. The co-creation of the strategic climate resilience proposals and engagement with key local government agencies promoted local ownership of the solutions. The initial set-up of the WaL program and the arrangement of its activities were executed by the close coordination between the RVO, the Semarang Planning Agency, and local partners, especially the city's resilience team. The co-creation of climate solutions promoted a local translation of the resilience concept and integrated resilience design into the city's planning process. As the research and development department head of Semarang's Planning Agency explained: "[Firstly,] we need to interpret the [resilience] concept and then we discuss. This is what we need to discuss and revise this part and then so on. This is a two-way [communication] process."

In relation to resource mobilization, the WaL program involved international financial organizations, such as the Asian Development Bank (ADB) and the World Bank, in the initial set-up of the program, the local workshop (during 2018-2019), regional workshops and the Singapore workshop (in 2019) to develop the conceptual design for financing and implementation. As a local knowledge partner of the WaL program stated:

The purpose [the meetings with the international financial institutions] is to approach and get input from the World Bank and the Asian Development Bank and others. ... This is to make a proposal really bankable and submittable to financial institutions. There are a good chance and sufficient support to ensure that we can convince these financial institutions to finance this project.

Although the program was designed to involve the financial institutions at an early stage and during the regional workshops, the Semarang chief resilience technical coordinator of the city's resilience team indicated that the active involvement of international financial organizations in the design process and proposal development was limited. Nevertheless, at the time of writing, there are possibilities that the proposals may receive funding from Dutch government programs, such as Develop2Build, the World Bank program and the National Urban Development Project (Government of the Netherlands, 2020).

Regarding policy alignment, the WaL program utilized the bilateral agreement on water cooperation between the Netherlands and Indonesia, namely the 'Memorandum of understanding (MOU) Water Indonesia-the Netherlands.' As the Dutch government representative for the bilateral water cooperation stated at the beginning of the program: "Let's try to bring Water as Leverage under the MOU because only then I can coordinate properly. In the meantime, all the (existing) projects that are in Semarang or around Semarang have some overlap or are complementary." The knowledge partner from the Indonesia Science fund mentioned how the program organized workshops with governmental agencies that looked at ways to embed the strategic proposals in the policy plans: "They have been [trying to] tied up with the program that's already designed, or that's already decided, that's already been planned before. So, we have to make sure that this is not just another burden for the government." A team member from One Semarang commented on the potential alignment of a strategic program with the city plan by stating:

I think we are working on it in terms of, let's say, for the Resilient Kampung, we are trying to engage them. The city government, BAPPEDA, says that they are and that they can commit. They are interested in taking that proposal into the city government program.

To support the continuation of the WaL activities and stimulate the proposal development process, the city's resilience team and local members of the design team formed the Water as Leverage Taskforce, which was responsible for policy alignment and maintaining relationships with the regional and national government. As the chief resilience technical coordinator explained: "The role of this taskforce is to establish connections with the provincial and national government. We should make an integrated claim and promote the Water as Leverage strategies there very well." However, despite these efforts, policy alignment at the regional and national levels was considered the main challenge confronted by the teams to move forward to the implementation process. The implementation of the strategic climate resilience proposals, such as the Integrated Protective Coastal Zone program, required coordination across governmental agencies at the local and regional levels.

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

As a knowledge partner from the Initiative for Urban Climate Change and Environment (IUCCE) stated:

It is important (to) work closely with the provincial and national level government because some areas, rivers, and solutions [within the strategic climate resilience proposals] do not fall under the authority of the city but under the authority of the national and provincial governments.

The six proposed strategic climate resilience proposals were supported by the Semarang city government. During a local workshop, namely the International Seminar Water as Leverage Semarang, the MOU to put forward these proposals was signed by the mayor of Semarang, the Dutch water envoy and the Dutch ambassador to Indonesia (Water as Leverage, 2019b). The interviewees also commented that the WaL program stimulated the involvement of the design team members in giving input to the development of Semarang's upcoming spatial mid-term plan. However, the challenge is that the potential funding from international financial organizations requires the approval from and should be mandated by the national government. As a team member of the One Semarang team stated:

They [international financial organizations] always have to have the national government involved. Deciding on whether it was going to be a loan, grant, or extra budget from the national government, all those things have to be done through the national government.

The coordination with and approval from the national government was thus required for the mobilization of resources, especially funding in the proposal development and implementation. The presentation of the resilience proposals was accompanied by the following narrative of adaptation:

Semarang's future is secured through a combination of ecological restoration, economic growth, improved land governance and fostering of social capital within communities. This will be a paradigm shift that will break the vicious circle and propel Semarang into a resilient future. (Water as Leverage, 2019b, p. 1)

The built narrative of adaptation consists of phrasings like “breaking the vicious circle”, “taps into the abundance of water and possibilities” and “no-drop gets lost”, which are used to characterize the urban flood and water solutions from the WaL program. It still requires considerable work to translate the overall narrative into the

operational planning process and procedures of the city. However, this narrative is used as a communication tool and storyline for influencing policy change in the city's flood risk and water management to focus more on different types of spatial adaptation measures, such as Spongy Mountain Terrace.

Although it took more work than anticipated to embed the strategic proposals in the regional and national governments' plans for the implementation of the solutions, the role of the city's resilience team was important, as it turned out to be the change-agent for the city's resilience policy and collaboration with international partners. The city's resilience team consists of a network of local government agencies such as the Semarang Development Planning Agency, local NGOs such as the Initiative for Urban Climate Change and Environment (an NGO supporting the various flood adaptation initiatives), BINTARI (local environmental NGOs), and UNDIP. Their continual efforts have played a large part in evoking changes in the city's flood adaptation. The WaL knowledge partner from the Future Cities Laboratory Singapore (a project initiated by ETH Zurich) commented on the involvement of the University (UNDIP) as a change-agent stating, "I think the involvement of academics like the university is really good. They have students that enable the continuation. The involvement of students assists to help to communicate with the local people in Kampung (community) and improve their capacity." Their support and close engagement with the design teams are essential for the implementation of proposals in the strategic climate resilience proposals, as their position further strengthens the bond between local institutions, local policy officials, and NGOs.

4.5 Discussion

4.5.1 Institutional strengths and weaknesses

The WaL program introduced a design and collaborative process, also referred to as 'resilience by design', in the context of Semarang. Our results showed that this process stimulated the building of local institutional capacity, and thus strengthened the three elements of institutional capital: intellectual, social, and political capital. The program was able to integrate multidisciplinary knowledge, build coalitions and relations between the design teams and local stakeholders, and create shared ownership of the program's activities and ambitions with the city. However, the following institutional weaknesses could be identified. First, there is a lack of

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

institutionalization of the resilience by design approach, which could lead to discontinuity of reflexive learning activities such as design-based research. Second, there is a lack of active engagement of city-based NGOs in the resilience by design process regarding their entering into the design contest. Third, there has been a lack of formal links with the national government at the initial stage of the program, and, consequently, there was little integration of the proposals in the existing institutional context. We have summarized these institutional strengths and weaknesses in Table 4.4.

Table 4.4: Institutional strengths and weaknesses of the WaL program in building local institutional capacity in Semarang.

Elements	Institutional Strengths	Institutional Weaknesses
Intellectual capital	Integration of multidisciplinary knowledge for co-creating flood adaptation solutions	Lack of institutionalization of the resilience by design approach and, therefore, the risk of discontinuity
Social capital	Coalition and relation building between the design teams and local stakeholders	Lack of active engagement of city-based NGOs in the resilience by design process
Political capital	Ownership and support of the local government and the city's change-agents to uptake flood adaptation solutions	Lack of formal links with the national government and, consequently, little integration of the proposals in the existing institutional context

In the remainder of this section, we explain how these institutional strengths and weaknesses can be translated into three key challenges that the WaL program, and also other international resilience programs in Southeast Asia, encounter in the process of building local institutional capacities for long-term urban flood adaptation.

4.5.2 Challenge 1: sustaining momentum for the reflexive learning process

The first challenge concerns the intellectual capital building and then, in particular, the reflexive learning process for exploring and experimenting with new flood adaptation solutions. The findings show that a strong element of the WaL program was the ability to build intellectual capital for the integration of knowledge, in terms of diverse insights and expertise. The consideration of local knowledge was also evident in the process of identifying social and climate vulnerabilities among local communities during the design-based research. Thus, an important strength of the program was the integration of knowledge to reframe flood and water problems and the way in which it succeeded in envisioning new climate solutions. Despite this strength, planning towards long-term flood adaptation requires capacities of the city to sustain and enhance momentum for the learning process (Pahl-Wostl et al., 2007; Pelling et al., 2008), that is, for the development of new strategies and solutions. For long-term urban flood adaptation, it remains unclear whether the local government in Semarang and other local actors will be able to organize a similar type of resilience by design process by themselves, if and when the program has ended. According to Liao (2012) and Pahl-Wostl et al. (2013), a continuous learning process, for instance, which informs to experimenting with new ideas and learning by doing, is essential for the policy change towards flood adaptation. Our results showed that the program still needs to transfer and embed WaL's design-based research and co-creation process at the city level.

4.5.3 Challenge 2: involving local NGOs

A second challenge relates to social capital building and in particular the inclusive engagement of local NGOs. There has proved to be a limited presence of Semarang-based NGOs in the WaL program. When we compare WaL to the previous international resilience programs in Semarang, such as ACCCRN and 100RC (Brown et al., 2012; Reed et al., 2014; Spaans & Waterhout, 2017), the major strength of the WaL program, through the design process, was its ability to bring various international and local spatial designers, academics, urban planners, social scientists, international and national NGOs, international financial institutions, and water experts into the local context. This process resulted in the materialization of the resilience concept into various design proposals. However, critical attention should be paid to opportunities for local NGOs, especially local NGOs with limited

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

resources, to take part in the resilience by design process. The involvement of Semarang-based NGOs and the local representation in the design teams would be beneficial in bringing the design of flood adaptation solutions into a formal institutional context, especially to sustain the program's ambitions in the city and country. This process is essential for generating social capital to stimulate new planning practices that could enhance policy responses to climate stresses (Driessen et al., 2016; Pelling & High, 2005).

4.5.4. Challenge 3: establishing policy alignment and formal links with decision makers

The third challenge relates to political capital building and the need for policy alignment in order to develop project proposals for implementation. Our results indicate that in Semarang, the national government was not involved at the essential early stage of the WaL program, such as during the design of the strategic climate resilience proposals. Formal coordination with the national government, which is necessary to ensure political buy-in of the design teams' proposals, did not occur at this early stage. This missing link with the national government hindered proposal development, financing, and implementation, as the proposals required different sources of funding, national government budget, and international loans. This challenge in the development from conceptual design to financing and implementation was similarly evidenced in the Rebuild by Design program (Lochhead, 2017). Rebuild by Design in the United States also experienced implementation barriers such as the limited timeframe of the program to engage and establish relations with official decision makers, the incompatibilities of designed solutions with existing plans and regulations, and the reliance on large investments from various external financial sources (i.e., private investment or international financial assistance) (Lochhead, 2017; Trogrlić et al., 2018). However, at the same, it is also important to consider that alignment in the top-down process right at the beginning could potentially limit the innovative process and proactive role of the local government.

4.6 Conclusion

This chapter aimed to understand how international resilience programs, by promoting a resilience by design approach after the example of the Rebuild by Design program in the US, enabled the building of local institutional capacities for the development and implementation of flood adaptation strategies in Southeast Asian cities. To this end, we developed an institutional capacity-building framework, focusing on three elements of institutional capital: intellectual, social, and political capital. This framework proved to be a useful analytical lens to capture the complex process of building institutional capacities and to highlight the key activities in this context of international resilience programs.

This chapter concludes that the WaL program introduced an innovative approach for relationship building and network integration between the multidisciplinary design teams (consisting of international experts and urban designers) and local stakeholders to co-create flood adaptation solutions. However, proposal development for financing and project implementation of these solutions remains challenging. We find that the program still needs to address the challenges related to the continuous and reflexive learning process, greater involvement of city-based NGOs, and policy alignment of the proposals including political support from national-level decision makers for further development of the conceptual design to project implementation.

Consequently, based on our analysis, there are three main recommendations for international resilience programs. These recommendations are focused on resilience programs in Southeast Asia but are also relevant for resilience programs in other parts of the world. First, this chapter suggests such programs to begin with an in-depth analysis of the local institutional context in the early set-up and formulation of the program. The program should have insight into existing institutional challenges; thereby, it can identify key elements in institutional capital that are essential for the design, proposal development, and project implementation of flood adaptation solutions. In Semarang, for instance, local policy actors, knowledge institutions, and NGOs had limited political capital for project financing and implementation; therefore, the city required approval and support from the national government. Second, international resilience programs need to create opportunities for local organizations and governmental agencies to be actively involved in the resilience by design process (e.g. design contest and design-based research). It is useful for such programs to have a local-based office and

Chapter 4 Building Local Institutional Capacities for Urban Flood Adaptation

representation of the design teams on the ground. Strong local ownership among stakeholders and involvement of local official decision makers throughout the process are crucial for the translation of innovative concepts into practice. Third and last, the consideration of existing local knowledge, culture, and experience is important to build local coalitions, create shared aspirations, and engage with and empower local communities. International resilience programs therefore should be built on and integrated with existing knowledge, social coalitions, and ambitions of the city's resilience front-runners. For this reason, such programs should be tailor-made to local conditions in order to capitalize on existing resources, knowledge, and experience in the city.

This research showed that the resilience by design process, which was developed by the WaL program, provided opportunities for local stakeholders to strengthen various aspects of their institutional capacities. Research about resilience planning processes and international resilience programs should thus not be limited to the exploration and assessment of the outcome of novel and integrated programs. This study showed that it is essential to understand whether and how such programs can contribute to the building of long-term local institutional capacities. Accordingly, this chapter contributes to the development of an analytical framework for understanding how international resilience programs enable local institutional capacity building by strengthening intellectual, social, and political capital for the development and implementation of flood adaptation strategies. Our findings add to the knowledge and understanding regarding the institutional strengths and weaknesses of international resilience programs in planning processes for urban flood adaptation in a developing country context. Insights and recommendations from this chapter may support governments and international institutions as well as local policy makers and planners to enhance local institutional capacities and address related institutional challenges to cope with flooding and climate impacts. These capacities are pivotal to the uptake of international lessons and examples and to drive local collective actions for urban flood adaptation.

Finally, for this chapter, we used a single case study to examine the relationships between the resilience by design process and local institutional capacity building and to discuss the key challenges in the context of a city in a developing country. Future research could consider using multiple case studies of international resilience programs to compare and explore the potential of or constraints in cross-border learning, collaboration, and international aid and development for inclusive urban flood resilience in different institutional contexts.

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Chapter 5

Institutional Conditions for Inclusive, Flood Resilient Urban Deltas: A Comparative Institutional Analysis of Two International Resilience Programs in Southeast Asia

This chapter was published as:

Laeni, N., van den Brink, M., & Arts, J. (2021). Institutional Conditions for Inclusive, Flood Resilient Urban Deltas: A Comparative Institutional Analysis of Two International Resilience Programs in Southeast Asia. *Water*, 13(18), 2478.
<https://doi.org/10.3390/w13182478>

Abstract

Policy makers in Southeast Asian flood vulnerable regions are confronted with various institutional challenges when planning for inclusive flood resilience. This chapter focuses on the role of international resilience programs and investigates how these programs can enable institutional transformation. The key question is which institutional conditions promote the development and implementation of inclusive flood resilience strategies by international resilience programs. The Mekong Delta Plan in Vietnam (MDP) and the Water as Leverage Program for Resilient Cities Asia (WaL) program in Semarang, Indonesia, are selected as the cases for a comparative analysis. To structure the comparative analysis of these programs, the Institutional Analysis and Development (IAD) framework is adopted and operationalized for the institutional analysis of inclusive flood resilience planning. The findings illustrate that whereas the MDP was able to involve decision makers from the national government and international financial institutions for mobilizing funding and technical support, the strength of the WaL program was its enabling environment for the co-creation of context-specific flood resilience proposals. Overall, this study concludes that the institutional conditions – that enable project financing and the implementation of long-term and integrated flood resilience solutions – are determined by engagement with national governments and by ownership of the solutions at both the national and local levels.

Keywords: Flood resilience, inclusive flood resilience, institutional analysis, institutional conditions, rules, international programs, Southeast Asia

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

5.1 Introduction

Urbanized regions in Southeast Asia are primarily located in flood-prone areas. Economic growth, rapid urbanization, ecological degradation, and urban migration are major forces of change that intensify the water-related challenges in these regions (Vinke et al., 2017). Policy makers and planners from national and local governments and experts are engaging in global policy networks for adopting flood resilience concepts in their planning practices (Dai et al., 2017; Driessen et al., 2018; Handayani et al., 2019; Hegger et al., 2016; Kuang & Liao, 2020; Liao, 2012; Restemeyer et al., 2015; Wesselink et al., 2015). Existing flood risk management approaches usually focus on the capacity to resist flooding, such as the construction of flood protection infrastructure. These approaches are currently being criticized for disregarding the social and ecological impacts of flood protection and for becoming less effective to cope with the current rapid changes in environmental and climate conditions (Dai et al., 2017; Driessen et al., 2018; Rosenzweig et al., 2018). The construction of flood protection measures could also lead to transferring flood risks to unprotected areas where the negative impacts are distributed to less advantaged communities (Alexander et al., 2016; Marks, 2015). Recent literature has therefore emphasized planning for flood resilience by diversifying flood risk management strategies, and thus investing in other types of measures including spatial flood adaptation, community preparedness, and emergency flood responsiveness (Driessen et al., 2018; Rosenzweig et al., 2018). In this context, there is also a growing recognition that planning for flood resilience should not neglect the inclusive dimensions of resilience building efforts, such as issues of justice, fairness, and equity (Alexander et al., 2018; Lebel et al., 2006; Marks & Elinoff, 2019). As a result, there is increased attention in both literature and policy practice in addressing social inclusiveness issues in flood resilience building efforts (Alexander et al., 2016; Driessen et al., 2018; Lebel et al., 2006; Molenveld & van Buuren, 2019).

Therefore, this study aims to examine which institutional conditions promote the development and implementation of inclusive flood resilience strategies by international resilience programs. To this end, this chapter presents a comparative institutional analysis of how two international resilience programs approached building inclusive flood resilience institutionally: the Mekong Delta Plan (MDP) in Vietnam and the Water as Leverage for Resilient Cities Asia (WaL) program in Semarang, Indonesia. To analyze the specific institutional arrangement of these programs, we adopted the Institutional Analysis and Development (IAD) framework

developed by Ostrom (2010). The IAD framework provides an analytical tool to systematically examine the operational rules that govern the interaction among various actors in a multi-level governance setting (Clement, 2009; Ostrom, 2011), and facilitates the analysis of the interaction and the conditions that are essential for institutional transformation (Anderies, 2013; Molenveld & van Buuren, 2019; Vitale et al., 2020). Moreover, the IAD framework was selected because it was adopted to analyze the relational structure and negotiation process affecting the sustainable outcomes of international development assistance in developing countries. Drawing on a theoretical exploration of the various ‘rules-in-use’ of the IAD framework (Ostrom, 2010, 2011; Ostrom et al., 2002), flood resilience literature (Anderies, 2013; Gersonius et al., 2016; Hegger et al., 2016; Molenveld & van Buuren, 2019; Wiering et al., 2017) and theoretical insights from Political Ecology literature (Furedi, 2008; Keil, 2005; Marks, 2015; Mullenite, 2016), we developed a comparative framework for analyzing institutional conditions for improving inclusive flood resilience planning. We used this framework to examine the two selected international resilience programs in Southeast Asia.

The remainder of this chapter is organized as follows. The next section explains the Institutional Analysis and Development (IAD) framework, with a particular focus on rules-in-use. Section 3 presents the operationalization of the IAD framework for analyzing institutional conditions for inclusive flood resilience. Section 4 outlines the cases studied, the methods, and the developed analytical approach used. Section 5 provides a comparative institutional analysis of the MDP in Vietnam and the WaL program in Semarang, and presents the similarities and differences between these two international resilience programs. In Section 6, we provide an overview of the institutional strengths and weaknesses of the two programs. Based on this overview, we also present key recommendations for the future development of the structure and organization of international resilience programs. This chapter ends with the conclusions of the key findings and suggestions for future research.

5.2 An institutional approach: rules-in-use

The IAD framework has been applied widely in policy, governance, and institutional studies (Andersson, 2009; Clement, 2009; Hijdra et al., 2015; Ostrom et al., 2002; Spijkerboer et al., 2019; van den Hurk et al., 2014; van Geet et al., 2019; Vitale et al.,

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

2020). The framework was initially developed to analyze the structure and process of interactions between policy actors to achieve efficient and sustainable use of common-pool resources in multi-level and polycentric governance settings (Ostrom, 1999). According to Ostrom (2011), the aim was to develop a systematic approach that contains a set of variables that reflect the complexity of policy interaction – the action-situation. The IAD framework thus provides “a set of building blocks that social scientists can use in efforts to understand human interactions and outcomes across diverse settings” (Ostrom, 2010, p. 646). The core analytical concept of the IAD framework is the action-situation, which is used to explain and predict the patterns, actions and interactions that determine policy outcomes (Ostrom & Basurto, 2010). Action-situations are “social spaces where individuals interact, exchange goods and services, solve problems, dominate one another, or fight (among the many things that individuals do in action situations)” (Ostrom, 2011, p. 11). These action-situations can be affected by rules-in-use (Ostrom, 2011). According to Clement (2009), a key assumption of the IAD framework is that the behavior of actors can be modified, in particular by changing the rules-in-use, thereby enabling or constraining the structure of interaction (see Figure 5.1).

Figure 5.1: Rules-in-use affecting the structure and elements in an action-situation as developed by Ostrom (2010).

Rules-in-use are important in an institutional analysis as they specify a common understanding of which actions actors must, must not or may take (Ostrom & Basurto, 2010). Ostrom et al. (2002) initially used rules-in-use as a general guide to analyze how the negotiation process and the relationship between donor and recipient countries affect agreement upon the feasibility and sustainability of an international development project, which is quite similar to the focus of our study. To understand the institutional arrangement of an international resilience program, we analyzed the structure of the action-situation based on the seven rules-in-use defined by Ostrom (2011), as shown in Figure 5.1.

Boundary rules specify which actors are involved in the action arena and how they enter and leave the action arena, thus concern how these actors are invited or selected to be part of an action-situation. These rules also set the number and characteristics of participants in an action situation. Position rules identify the sets of positions that are being assigned to the actors involved. These rules reflect the capabilities and responsibilities of the actors in the assigned positions, defining who can act as a regulator, promoter or supporter in the action situation. Choice rules specify the possible actions that actors are allowed, obliged or prohibited to take. These rules thus concern the choices of allowable actions for actors to take according to their roles and tasks. Scope rules determine the intended outcome that may, must, or must not occur. These rules can be related to framing and clarifying the policy goals in the planning process, such as water safety and spatial and ecological quality. Aggregation rules affect how decisions about actions and activities can jointly be made by actors. These rules also determine where the decisions come from – for example, national government or local government – and whether there will be opportunities for ‘marginalized’ groups to take part in decision-making. Information rules specify the essential conditions of how the information is made available to, sent to and received by the actors. These rules also reflect how information facilities and activities such as meetings, seminars, events, and workshops could be organized. Finally, Payoff rules determine the benefits and costs that have to be distributed, paid and received by the actors involved. The payoff rules consider the important question of how funding is guaranteed, mobilized, and activated.

5.3 Operationalizing rules-in-use for the institutional analysis of inclusive flood resilience planning

In this section, we operationalize the rules-in-use that are part of the IAD framework (Ostrom, 2010, 2011) for the analysis of essential institutional conditions set or induced by international programs for the development and implementation of inclusive flood resilience strategies. We thus draw on insights from flood resilience literature (Davoudi, 2012; Driessen et al., 2016; Gersonius et al., 2016; Hegger et al., 2016; Liao, 2012; Restemeyer et al., 2015; Rosenzweig et al., 2018; Sörensen et al., 2016; Vitale et al., 2020) to further operationalize the seven rules-in-use for analyzing the institutional conditions introduced by international programs to build inclusive flood resilience (See table 5.1).

Boundary rules specify which actors can enter and participate in the international resilience programs. The default condition of boundary rules is that anyone can enter into an action-situation (Ostrom & Basurto, 2010). As addressed by various authors (Lebel et al., 2006; Molenveld & van Buuren, 2019; Sörensen et al., 2016; Wiering et al., 2017), building flood resilience requires a broad engagement and consultation among various actors from different professions, organizations, and interests to jointly develop flood resilience solutions. The first essential institutional condition for inclusive flood resilience is therefore connecting diverse experts and policy makers; for instance, in water management, spatial planning, ecology, and urban design. Restemeyer et al. (2015) highlight the importance of collaboration between water experts and spatial planners for specific spatial adaptation projects such as creating more space for water. The second essential condition is involving local stakeholders such as local communities, universities, and NGOs and to facilitate social acceptance in decision-making (Alexander et al., 2016; Driessen et al., 2018). The third and last essential condition is engaging with financial institutions and decision-makers from governmental agencies across sectors and administrative levels. The involvement of official decision-makers proves an important consideration in the structuring and organizing of international resilience programs as this often determines the translation of preferable solutions to proposal development and project implementation (Laeni et al., 2020a).

Position rules identify the important capacities and possible roles of involved actors needed for institutional transformation. The default condition of these rules is that no formal positions exist in the action situation. Various authors

(Anderies, 2013; Gersonius et al., 2016; Lebel et al., 2006; Molenveld & van Buuren, 2019) who have discussed flood resilience have stressed the importance of networks of actors with capacities to contribute ideas and to develop flood resilience strategies. In this context, there are different roles important when building inclusive flood resilience, which can be translated into essential conditions. Promoter is the first essential role. It stresses the ability of actors to support the reframing of flood problems and to develop proactive and integrated flood risk management strategies (Alexander et al., 2018; Molenveld & van Buuren, 2019). The second role is that of the connector, which places emphasis on the ability of actors to link the developed inclusive and integrated solutions to the formal planning and policy making process. The connecting role thus includes the development of visions and strategies together with decision-makers and exploits opportunities to embed the solutions in different issues and agendas across policy boundaries (van den Brink et al., 2019). Gersonius et al. (2016) also stressed the importance of the position of involved actors to influence policy change in a formal institutional context such as supporting the implementation of flood resilience strategies in practice. The third and last role is the facilitator role that emphasizes the importance of the ability of actors to support collaboration across multiple stakeholders from the government, private sectors, knowledge institutions and local communities. Participants in international resilience programs should, therefore, be able to communicate with a wide range of stakeholders to enable the adoption of new policy initiatives and stimulate long-term institutional change (Restemeyer et al., 2015; Rosenzweig et al., 2018; Sørensen et al., 2016).

Choice rules describe the allowable actions and opportunities of the participants to take action in the international resilience programs. According to Ostrom and Basurto (2010), the default condition regarding the choice rules is that any actor can take possible actions in the action-situation. For planning for inclusive flood resilience, international resilience programs need to create an enabling environment for participants to support, develop and implement proactive and integrated flood resilience solutions (Driessen et al., 2016; Gersonius et al., 2016). The first essential condition is supporting the learning process and experimentation with new solutions. As Hegger et al. (2016) argue, the flood resilience approach calls for diversifying strategies in flood risk management, including flood prevention, flood defense, flood mitigation, flood preparation and flood recovery. Promoting such strategies requires the joint commitment of international resilience programs and local policy makers to support the development of these strategies, to improve the planning process and to foster institutional change by learning about and

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

experimenting with the new flood solutions. The second essential condition is developing proactive and long-term flood risk management strategies and measures. According to Handayani et al. (2019), the translation of flood resilience into planning practices should enable local policy makers to develop proactive measures rather than relying on short-term reactive responses. In this context, the diverse flood resilience strategies should take into account the strengths and weaknesses of the specific physical and institutional contexts (Gersonius et al., 2016; Keil, 2005; Lebel et al., 2006; Liao, 2012; Rosenzweig et al., 2018). The third and last essential condition is integrating the implementation of the developed flood resilience strategies in broader spatial visions and strategies. The alignment of short-term actionable initiatives with broader and integrated spatial visions must be taken into consideration (Driessen et al., 2018; Handayani et al., 2019).

Scope rules determine the anticipated outcomes from the actions of the involved actors in international resilience programs. The default condition of these rules is that any actor can affect the state of outcomes and interaction (Ostrom & Basurto, 2010). The translation of the resilience concept to planning practice, as developed by Davoudi (2012), emphasized robustness, adaptability, and transformability as important outcomes when planning for flood resilience (Folke et al., 2010; Restemeyer et al., 2015). The first essential condition, robustness, is therefore to achieve flood safety and protection (Hegger et al., 2016). While protection and safety from increasing flood risks generally appear to be dominant in flood risk management, planning for inclusive flood resilience calls for strategies to also strengthen the capacities for flood adaptation and recovery and for promoting societal learning and innovation (Gersonius et al., 2016; van den Hurk et al., 2014). Therefore, the second essential condition, adaptability, is realizing flood adaptation and flood recovery (Restemeyer et al., 2015). The third essential condition, transformability, is to promote societal learning based on local and international experience and for fostering institutional change and innovation (Kuang & Liao, 2020; Pahl-Wostl et al., 2013).

Aggregation rules affect the modes of decision-making for reaching an agreement and the selection of courses of action. These rules determine which actions or activities are to be taken and in what ways these options can be implemented. The default condition of these rules is that each actor can have a different effect on the outcome of interaction and action. In the context of international development programs, Ostrom et al. (2002) highlighted that the local commitment and sustainability of an international development program are higher when the beneficiary country is a real owner of the program and has an active role in the

process. It is therefore important that the decision-making process includes the interests of and creates opportunities to co-create solutions with local partners and involved communities (Alexander et al., 2016; Lebel et al., 2006). The first essential condition, therefore, is involving the relevant parties, including the policy makers and local communities in decision-making. Decisions in setting up, structuring, and implementing the international development programs should be made collaboratively with local actors. The second essential condition is enabling co-creation processes to stimulate local ownership of flood resilience solutions. In this context, Anderies (2013) emphasizes that building flood resilience is more effective when decision-makers and independent actors can interact with and learn from each other. The third essential condition is identifying opportunities to integrate flood resilience solutions in the formal institutional context. The decision-makers should be well informed and continuously involved in the decision-making for identifying, selecting, and formulating flood resilience strategies (Laeni et al., 2020a). According to Gersonius et al. (2016), flood resilience strategies could not be realized without the ability to integrate flood resilience in various policy domains and across administrative levels.

Information rules are essential to specify the information needed for participants to achieve inclusive outcomes from flood resilience planning. The default condition for information rules is that each actor can communicate freely via any channel available to them. Open communication and interaction between stakeholders are important to build trust and shared-understanding for mobilizing resources (Lebel et al., 2006; Molenveld & van Buuren, 2019). The first essential condition for information rules is therefore open communication and continuous dialogue between participants and stakeholders throughout the planning process. The second condition is adopting and integrating scientific insights, local knowledge and innovative ideas, as the integration of interdisciplinary knowledge and local insights could help to foster innovative ideas and long-term solutions (Kuang & Liao, 2020; Restemeyer et al., 2015). It is important for participants to have access to information about problems and solutions, and to use scientific insights and new knowledge to address flood problems (Driessen et al., 2016). The third essential condition is raising flood awareness by increasing understanding about the physical, social and, environmental vulnerabilities of the local context (Furedi, 2008). Here, international resilience programs could play a key role in sharing different types of knowledge and insights for raising awareness on flood risks and climate impacts among decision-makers and stakeholders.

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

Payoff rules determine the distribution of costs and benefits of the actions and outcomes from the building of inclusive flood resilience. Ostrom and Basurto (2010) explained that the default condition for payoff rules is when any actor can obtain and defend outcomes from their actions. In building flood resilience, Driessen et al. (2018) stressed that the assurance of financial and other resources for the development and implementation of flood risk management strategies is an essential precondition. The first essential condition regarding the distribution of benefits and costs is therefore identifying and communicating about funding availabilities and opportunities for realizing inclusive flood resilience strategies. The second condition is supporting the mobilization of funding for proposal development and project financing, including how the various sources of funding could be identified, such as from the national government, international financial institutions, and international development assistance. The third and last essential condition is ensuring social and ecological outcomes and the benefit of communities in the project implementation. Various authors have indicated that inclusive and integrated dimensions – such as social, ecological, and cultural benefits for communities – should be addressed along with achieving flood safety and protection (Liao, 2012; Marks, 2015; Marks & Elinoff, 2019; Sörensen et al., 2016; Vitale et al., 2020). The payoff rules also concern who will benefit from the international resilience programs. Ostrom et al. (2002) illustrated that several actors, such as contractors, civil society organizations, aid and governmental agencies, and local communities, can potentially benefit from the financing and implementation of international development programs. International resilience programs should therefore facilitate the financial investment in holistic and integrated flood resilience initiatives to respond to flood and ecological risks in the local context.

Table 5.1: Operationalizing rules-in-use for the institutional analysis of inclusive flood resilience planning.

Rules-in-use	Default condition		Rules-in-use	Key References
1. Boundary rules	Anyone can enter	-	Connecting diverse experts and policy makers from various disciplines and sectors including water management, spatial planning, ecology and, urban design	Molenveld and van Buuren (2019); Sörensen et al. (2016); Driessen et al. (2016); Restemeyer et al. (2015); Lebel et al. (2006); Laeni et al. (2021); Wiering et al. (2017); Alexander et al. (2016)
		-	Involving local stakeholders such as communities, universities, NGOs, and interest groups	
		-	Engaging financial institutions, international organizations, and decision-makers from governmental agencies across sectors and administrative levels	
2. Position rules	No formal positions exist	-	Promoting the reframing of flood problems and identifying integrated and proactive long-term flood risk management strategies	Anderies (2013); Driessen et al. (2016); Gersonius et al. (2016); Alexander et al. (2016);
		-	Connecting integrated and proactive long-term solutions to formal policy, planning, and implementation	Rosenzweig et al. (2018); Lebel et al. (2006); Molenveld and van Buuren (2019); van den Brink et al. (2019);
		-	Facilitating collaboration across multiple stakeholders from government, private sectors, knowledge institutions, and local communities	Restemeyer et al. (2015); Sörensen et al. (2016)
3. Choice rules	Any actor can take any possible action	-	Supporting learning about and experimentation with new, and more diversified, flood risk management solutions	Molenveld and van Buuren (2019); Alexander et al. (2016); Gersonius et al. (2016); Driessen

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

Rules-in-use	Default condition	Rules-in-use	Key References
		<ul style="list-style-type: none"> - Developing integrated and proactive long-term flood risk management strategies - Integrating flood resilience strategies in broader spatial visions and strategies 	et al. (2016); Hegger et al. (2016); Handayani et al. (2019); Liao (2012); Rosenzweig et al. (2018); Keil (2005)
4. Scope rules	Each actor can differently affect the outcome of interaction and action	<ul style="list-style-type: none"> - Achieving flood safety and protection ('robustness') - Striving for flood adaptation and recovery ('adaptability') - Promoting societal learning and long-term capacity building for fostering institutional change and innovation ('transformability') 	Davoudi (2012); Alexander et al. (2016); Restemeyer et al. (2015); Lebel et al. (2010); Folke et al. (2010); Hegger et al. (2016); Gersonius et al. (2016); van den Hurk et al. (2014); Kuang and Liao (2020); Pahl-Wostl et al. (2013)
5. Aggregation rules	Actors act independently	<ul style="list-style-type: none"> - Involving participants, policy makers, and local communities in decision-making about goals and activities - Enabling co-creation processes to stimulate local ownership of flood resilience solutions - Identifying opportunities to integrate flood resilience solutions in formal planning practice 	Ostrom et al. (2002); Alexander et al. (2016); Lebel et al. (2006); Anderies (2013); Gersonius et al. (2016)
6. Information rules	Each actor can communicate any information via any channel available to the actor	<ul style="list-style-type: none"> - Enabling open communication and continuous dialogue for building trust and shared-understanding - Integrating scientific insights, local knowledge, and innovative ideas 	Lebel et al. (2006); Molenveld and van Buuren (2019); Kuang and Liao (2020); Restemeyer et al. (2015); Driessen

Rules-in-use	Default condition	Rules-in-use	Key References
		- Raising flood awareness among decision-makers and stakeholders	et al. (2016); Furedi (2008)
7. Payoff rules	Each actor can retain any possible costs and benefits	<ul style="list-style-type: none"> - Identifying funding availabilities and opportunities - Supporting the mobilization of funding for proposal development and project financing - Ensuring social, ecological, and cultural benefits for communities in the project implementation 	Driessen et al. (2018); Ostrom et al. (2002); Liao (2012); Sörensen et al. (2016); Vitale et al. (2020); Marks (2015); Marks and Elinoff (2019)

5.4 Research Design

5.4.1 Cases

5.4.1.1 Mekong Delta Plan (MDP)

This study focuses on two international resilience programs as action-situations for the translation of and cross-border learning in water policy: the Mekong Delta Plan (MDP) in Vietnam and the Water as Leverage for Resilient Cities Asia (WaL) program as applied in the city of Semarang in Indonesia. The formulation of the MDP was completed in 2013, which was the result of the bilateral water cooperation between the Vietnamese and Dutch governments (Government of the Netherlands and Government of Vietnam, 2013). The MDP was developed by a group of Dutch experts and consultants and Vietnamese former civil servants and experts (Hasan et al., 2019). The MDP serves as a strategic recommendation, which sets socio-economic scenarios and recommends strategic delta measures, under the motto ‘towards a resilient urban delta’, in Vietnamese delta and water management suggesting the transitioning towards the ‘agro-business industrialization scenario’ (see Figure 5.2). Although the document was not formalized in the Vietnamese administrative systems, the strategic recommendations from the MDP resonated among international development parties and provided a reference for the upcoming delta

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

development projects with international funding (such as Government Resolution 120 on Climate-Resilient Mekong Delta). This study focuses on the development and implementation of the MDP as the action-situation for the policy transformation to resilient delta management. The MDP is the first Delta Plan developed outside the Netherlands and is based on the Dutch Delta Program 2008.

5.4.1.2 Water as Leverage for Resilient Cities Asia Program

The second case study is the WaL program. The WaL program focused on the design and co-creation of proactive and integrated climate resilience solutions (see Figure 5.3) and can be considered the first application of a design-led planning approach in the context of Asian cities (Laeni et al., 2021; Laeni et al., 2020a). While the program was initiated and funded by the Dutch government, its implementation was in collaboration with several international development partners such as UN-Habitat, the 100 Resilience Cities Program, AIIB, ADB and WWF.

Figure 5.2: Strategic recommendation towards agro-business industrialization in the MDP 2013 (Source: www.mekongdeltaplan.com).

The main aims of the program included: identifying catalytic and innovative urban climate resilience solutions; stimulating collaboration and capacity-building processes; and creating opportunities for integrated climate financing (Government of the Netherlands, 2019). The program was implemented in three pilot cities in Asia: Chennai, India; Khulna, Bangladesh; and Semarang, Indonesia. This study focuses on the development of the WaL program in Semarang. In this city, two multi-disciplinary design teams were selected to participate in the resilience-by-design process, namely ‘One Resilient Semarang’ and ‘Cascading Semarang’ (Water as Leverage, 2019). The teams engaged in design-based research on the local context and development of climate solutions with local stakeholders (Cascading Semarang, 2018; One Resilient Semarang, 2018), and presented strategic climate resilience proposals: 6 diverse programmatic approaches or solutions for addressing flood risks and water challenges in Semarang. The proposals were (1) Water-Neutral Industry, (2) Feeding Industry, (3) Network of Resilience Kampung, (4) Integrated Protective Coastal Zone, (5) Spongy Mountain Terraces, and (6) Rechanneling the City. At the time this study was written, the WaL program teams and the multidisciplinary design teams were working on translating the conceptual program designs into proposal developments for implementation.

THE WATER AS LEVERAGE APPROACH

- ✓ All stakeholders involved from day one
- ✓ Responsive to changing environment
- ✓ Scalable and replicable in multiple environments
- ✓ Risk of failure reduced

People

Combine the world's best expertise with local talent.

R&D

Catalyze innovative processes to understand vulnerabilities to future risks and uncertainties.

Integration

Co-ordinate closely with local communities and governments in an agile working environment.

Process

Ensure Government and community stakeholders work closely with experts from day one.

Finance

Source innovative project funding through public private partnerships, blended and private finance initiatives.

Water as Leverage is an initiative of the Government of the Netherlands

Water as Leverage ©2019 www.waterasleverage.org

Figure 5.3: Water as Leverage Approach (Source: Water as Leverage program 2019).

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

5.4.2 Data collection and analysis

We used the operationalization of the rules-in-use for building inclusive, urban flood resilience, as presented in Table 5.1, for the comparative institutional analysis of the MDP and the WaL program. The empirical data collection was based on a combination of document analysis and in-depth interviews for both case studies. For the MDP case, we used policy documents, reports and official plans related to the formulation and implementation of the MDP 2013. We conducted a total of 10 in-depth semi-structured interviews with policy officials, diplomats, academics and consultants who were directly involved in the development of the MDP (see Table 5.2). For the WaL case, we analyzed various program reports, pamphlets and guidelines developed and produced by the WaL program. During the fieldwork data collection in Semarang, we also conducted 12 in-depth semi-structured interviews with the WaL program teams, local policy officials, local and international urban designers and planners, government representatives, local NGOs, and community leaders (see Table 5.2). For both cases, the interviews were structured with three main focuses: the organization of the programs, the involvement of various parties, and how the programs were perceived by local stakeholders (challenges and opportunities).

For the analysis, we used Atlas.ti 8, a textual analysis software, to compile the documents, to develop a deductive coding scheme based on the analytical framework (see the code network in the Appendix E), and to code all the primary data from both the documents and the interviews. We used two separate hermeneutic units of the Atlas.ti files for each case study. We first used the coding scheme to analyze the data set (interviews and documents) for the MDP case and the WaL case. We then exported the coding reports from each case study for the comparative analysis of each rule based on our operationalization of the rules-in-use (Table 5.1). For both cases, we also used key insights and findings relevant to recently published literature (such as Hasan et al., 2019; Korbee et al., 2019; Seijger et al., 2019; Vo et al., 2019; Laeni et al., 2020a, b) to strengthen our analysis.

Table 5.2: Overview of documents and interviews for the data collection.

Primary data for MDP case	
Documents	Interviews
<ol style="list-style-type: none"> 1. The Delta Program (2008) 2. Converging Streams – An International Water Ambition, Dutch Framework Co-operation (2016) 3. The Mekong Delta Plan (2013) 4. Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project (2016) 5. Project Appraisal Document for Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project (2016) 6. Resolution 120 on Sustainable and Climate Resilient Development of the Mekong Delta Vietnam (2017) 	<ol style="list-style-type: none"> 1. Senior Project Manager Rivers and Coast (Royal HaskoningDHV) 2. Strategic Advisor at the Dutch Ministry of Infrastructure and Water Management (Former First Secretary Water and Climate, Dutch Embassy in Vietnam) 3. Delta Coordinator for International Water Policy unit (Dutch Ministry of Infrastructure and Water Management) 4. Professor of Coastal Engineering (TU Delft) 5. Post-doctoral researcher (Water System and Global Change, Wageningen University and Research) 6. Water Secretary at Dutch Embassy Hanoi 7. Climate Change expert and Director (Climatesense.eu) 8. Independent Urban Delta Researcher and Journalist 9. Manager Water Resources Department (Royal HaskoningDHV Vietnam) 7. Deputy Director of Environmental and Natural Resources (Research Institute for Climate Change, Can Tho University)
Primary data for WAL case	
Documents	Interviews
<ol style="list-style-type: none"> 1. Factsheet Water as Leverage (2019) 2. Water as Leverage for Transformative Impact (2017) 3. Water as Leverage Semarang – One page two teams (2019) 4. WAL Call for Action Guideline (2018) 	<ol style="list-style-type: none"> 1. UN-Habitat Urban Design Lead 2. Technical advisor for Chief Resilience Officer Semarang and Lecturer (Diponegoro University) 3. Program Director and member of One Resilient team (Kota Kita - Our City Foundation)

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

Primary data for MDP case	
5. Setting the Scene For a Call For Action (2015)	4. Landscape Architect and consortium design lead of Cascading Semarang Team (MLA+)
6. A Table of Netherlands-Indonesia MOU Water Cooperation (2019)	5. Landscape Architect and consortium design lead of One Semarang Team (One Architecture and Urbanism)
	6. Program Advisor Global Public Goods (Netherlands Enterprise Agency)
	7. Head of Infrastructure and Environment Research and Development (Semarang Planning Agency)
	8. Dutch International Water Envoy (Ministry of Infrastructure and Water Management)
	9. Program Manager (The Indonesia Association for Sustainable Development – Bintari Foundation)
	10. Dutch government representative for Water Cooperation Netherlands-Indonesia
	11. Resource Mobilization Director (Indonesia Science Fund)
	12. Senior Project Manager and member of the Cascading team (Deltares)

5.5 Comparative institutional analysis of the MDP and the WaL program

This section presents the comparison between the rules-in-use in the two selected case studies: the MDP in Vietnam and the WaL program in Semarang, Indonesia. For each rule, we first explain the similarities in institutional conditions between the two programs. We then discuss the differences in institutional conditions for enabling inclusive flood resilience. This section is concluded with an overview of the essential conditions that resulted from each program (see Table 5.3).

5.5.1 Boundary rules

To begin with, both the MDP and the WaL program were initiated by the Dutch government in collaboration with the government of the beneficiary countries, international development organizations, and international financial institutions. This is an important similarity in the boundary rules between both programs, relating to the essential condition to engage with international organizations and governmental decision-makers. The development and the implementation of the MDP involved Dutch experts and consultants, Dutch diplomats at the Dutch Embassy in Hanoi, Dutch policy officials at the Ministry of Infrastructure and Water Management, Vietnamese academics, and retired civil servants and representatives from the Vietnamese ministries including the Ministry of Natural Resources and Environment (MONROE) and the Ministry of Agriculture and Rural Development (MARD). In Semarang, the WaL program was initiated and organized by the Dutch government (the Netherlands Enterprise Agency, RVO) in collaboration with the city government of Semarang and Semarang Planning Agency (Government of the Netherlands, 2019). Another similarity was that both programs also involved international organizations in the set up and implementation of the programs. To give an example, the formalization and implementation of MDP were supported by the World Bank and other international development organizations such as UNDP, the World Bank, the Asian Development Bank (ADB), the German Development Agency (GIZ), and the International Union for Conservation of Nature (IUCN). The WaL program was initiated in collaboration with several international organizations such as WWF, UN-Habitat, Green Climate Fund and Asian Development Bank. These international organizations were involved in the WaL design workshops, local workshops, and regional workshops and gave feedback to the design teams in the development of the strategic climate resilience proposals (Government of the Netherlands, 2019).

Regarding the differences in the boundary rules, the WaL program connected a wide range of policy actors and experts from more diverse sectors and disciplines through the resilience-by-design process. During the design contest, the two selected design teams, ‘One Semarang’ and ‘Cascading Semarang’, were formed by a diverse group of professions and backgrounds including urban designers, landscape architects, engineers, water experts, and urban planners from both local and international organizations (Water as Leverage, 2019b). The WaL program also engaged with various international financial institutions in an earlier stage of the program. The World Bank was involved in the MDP after the plan was launched.

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

Furthermore, the WaL program engaged more local actors while the policy makers involved in the MDP were mainly policy officials and representatives from the water management and agricultural sectors at the national level. In the WaL program, the local members of the design teams and the city government, such as the Semarang Planning Agency, played an important role in the translation of the conceptual design to the set-up of local meetings and organization of community engagement. This is related to the essential condition to involve local stakeholders such as local communities, NGOs, universities, and different interest groups in the co-creation of flood resilience solutions. However, the results indicated that the involvement of local-based NGOs was limited. This is partly due to their limited capacities to take part in the design contest and to give input for the climate resilience conceptual design process (Laeni et al., 2020a). There was also a lack of participation from local parties representing the financial and private sectors during the resilience-by-design process.

5.5.2 Position rules

Both the MDP and the WaL program were similar in enabling the involved actors to assert the ‘promoter’ and the ‘facilitator’ roles for planning for inclusive flood resilience. The first similarity is that both programs promoted the reframing of flood problems and the development of proactive and integrated flood risk management strategies. In Vietnam, the Dutch consultants and Vietnamese academics and retired civil servants helped to create new solutions and to reframe the existing flood and climate challenges of the Mekong Delta. In this context, the MDP working group leader, Royal HaskoningDHV, stated: “Some of them are already retired which for them is an advantage because they are freer to say what they want and what they think.” In the case of the WaL program, both the international and the local design members delivered the analysis of vulnerabilities in the local context and presented flood resilience strategies including nature-based measures, ecological restoration, community preparedness, and rainwater harvesting and retention (Water as Leverage, 2019b). The second similarity is that both international resilience programs enabled the participants to facilitate the collaboration process together with international development partners and organizations. In the case of the MDP, the program promoted the organization of the Mekong Delta Forum, a communication platform between the Vietnamese government, international donors, financial institutions, and development organizations, which encourage these actors to

collectively adopt the recommendations from the MDP (The World Bank, 2015). The Water Secretary at the Dutch Embassy in Hanoi explained: “The development partners had been in the driver’s seat for the Delta Forum in 2015 and 2016, but now suddenly the [Vietnamese] government took that position and further elaborated it with the input from the development partners.” The WaL program enabled the design teams to facilitate the collaboration between the local design members with the international design team members; particularly, the design lead played a crucial role in facilitating the relations within the teams and with international partners. As the design lead of the ‘One Semarang’ team stated: “There is a really strong social component. I think that's what's great about the Water as Leverage program is that you also building of social relation.”

A difference is that the MDP created an essential condition for connecting the integrated solutions to the planning and policy-making process, while the WaL program focused more on facilitating the collaboration with local policy actors and stakeholders. Based on this, the participants in the MDP had more ‘connector’ roles and capacities to also implement the developed flood solutions. The Ministry of Agriculture and Rural Development (MARD), which is responsible for developing and executing the water resources and agriculture planning projects in Vietnam, oversaw the realization of the MDP. As the MDP working group leader stated: “MARD is way more powerful [than other ministries and government agencies] because they are responsible for agriculture, which in Vietnam means food security, and for the water management system, irrigation, flood protection, river works, and salinization issues.” This was different in the WaL program. The local government in the WaL program had fewer connecting roles with regard to the actual policy implementation. The mobilization of funding for the implementation of the strategic climate resilience proposals required engagement with the national government. As a local member of ‘One Semarang’ said: “What the design teams produce required national government support because unfortunately in Indonesia, city governments don't have a lot to say.” The local members of the design teams and the local government partners involved in the WaL program in Semarang created the local ‘WaL Taskforce’ to strengthen their connecting roles. The role of this local WaL taskforce was to ensure the continuation of the program and to organize communication with the national and regional governmental decision-makers for the implementation of the design proposals (Laeni et al., 2021).

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

5.5.3 Choice rules

The similarity with regard to the choice rules was that both the MDP and the WaL program supported conditions for stimulating the learning process among the participants related to the development and implementation of inclusive flood resilience strategies. The MDP created the condition for Vietnamese policy makers to adopt and experiment with a new flood resilience strategy that was based on the ‘agro-industry’ strategic recommendation. This recommendation stimulated policy actors to diversify and develop flexible adaptation approaches, such as no-regret measures, (short-term) priority measures and mid- to long-term measures based on scenario planning and analysis (Government of the Netherlands and Government of Vietnam, 2013). Similarly, the WaL program promoted the co-creation of transformative and inclusive flood resilience visions and solutions, which materialized in six strategic climate resilience proposals. As a local member of the ‘Cascading Semarang’ team explained: "The initial idea came from the international experts of the design teams and the local partner needs to interpret and translate the ideas fitting with particularities of Indonesian context." In addition, the WaL program created conditions for capacity building within the local governmental agencies and stakeholders during the design-based research and the conceptual design of the strategic climate resilience proposals. A local member of the ‘Cascading Semarang’ stressed: "It is also important to improve the capacity of the stakeholders because, at the end of the day, they (the local stakeholders) will run or implement or contribute to the process. It's not the international persons."

The major difference between how these two programs approached the choice rules relates to the development of integrated and proactive long-term flood risk management measures. The MDP did not indicate specific measures regarding the flood resilience strategies. The output of the MDP was strategic recommendations supported by a scenario analysis of the Mekong delta. It thus provided broad strategic choices and various policy paths towards resilience delta management. These recommendations were adopted by regional and provincial governments to develop more concrete resilient flood risk management measures. For instance, Tra Vinh Province’s rain and floodwater harvesting and storage proposal to reduce groundwater exploitation was developed based on the alignment of local initiatives with the MDP’s recommendations. By contrast, the WaL program delivered more concrete resilience proposals visualizing specific types of flood resilience strategies. The WaL program therefore provided clearer and more specific solutions for the development and implementation of flood resilience initiatives for the city. This is

evidenced in the development of the climate resilience solutions such as the proposals for ‘Spongy Mountain Terrace’ and ‘Rechanneling the City’, thereby focusing on integrating spatial measures in the city’s flood resilience management (Water as Leverage, 2019b).

5.5.4 Scope rules

With regard to the scope rules, a key similarity between the MDP and the WaL program was the two main anticipated outcomes in adaptability and transformability envisioned by both international resilience programs. Firstly, both programs promoted initiatives and solutions for flood adaptation and recovery, and, secondly, they promoted societal learning and fostering change and innovation. To achieve adaptability to climate risks, the MDP suggested the transition from agricultural development to accommodating saltwater intrusion, and supporting investments in aquaculture and nature-based flood storage, which would have multiple social and ecological benefits (Government of the Netherlands and Government of Vietnam, 2013). The World Bank’s appraisal document for the funding of the MDP implementation stated: “The MDP calls for policy change of avoiding, and, where possible, in the long run, reversing the embankment of the floodplains” (The World Bank, 2016, p. 79).

The strategic climate resilience proposals from the WaL program are aimed at capacity-building for the adaptation of the city and among vulnerable communities. The ‘Spongy Mountain Terrace’, ‘Water-Neutral Industry’, and ‘Feeding Industry’ proposals focused on the spatial measures for mitigating flood risks and increasing water supply. As the design team lead of ‘Cascading Semarang’ stated: “In my mind, it is almost impossible not to address that in an inclusive, and a holistic kind of viewpoint or approach.” With regard to the transformability, the MDP promoted the integrated approach in the institutional conditions for flood adaptation. An involved academic from Can Tho University said: “It’s rather sectoral planning [fragmentation of agencies in delta management] whilst the Mekong Delta Plan is integrated planning combining different fields (in water management and flood risk management).” To achieve the transformative outcome in flood resilience planning process, the WaL program induced societal learning through a coalition of designers and design teams, local government, universities and NGOs. The WaL program, for instance, promoted critical discussions on the existing water challenges

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

and climate vulnerabilities and created a narrative of flood adaptation for driving the collective efforts for inclusive flood resilience (Laeni et al., 2020a).

Firstly, the WaL program differed from the MDP because it emphasized robustness in flood protection, along with adaptability and transformability as essential conditions in the development of climate resilience proposals; therefore, the strategic climate resilience proposals also specifically addressed flood safety and protection. To give an example, the strategic climate resilience proposal includes the 'Rechanneling the City' program, which focuses on the prevention of water discharges while improving the spatial quality of the inner-city waterfront (Water as Leverage, 2019b). Secondly, the WaL program highlighted the inclusive dimension in transformability, especially among vulnerable communities. Proposals such as 'Network of resilient Kampung' for instance aimed to enhance local community engagement and to increase flood awareness among the community members. This proposal, developed by 'One Semarang', was based on consultation and engagement with local communities, and introduced community participatory tools and guidelines for community involvement in the development and implementation of resilience solutions (Water as Leverage, 2019b). Therefore, inclusive outcomes are more evidenced in the WaL case due to the essential condition to engage local communities openly and collaboratively.

5.5.5 Aggregation rules

Both the MDP and the WaL program similarly attempted to enable a co-creation process for stimulating local ownership of flood resilience solutions. The formulation of the MDP was a modification of the Dutch delta management approach, which was translated to the Vietnamese interests and ambitions in delta management. Therefore, the focus of the plan shifted from water and climate risk to agriculture and economic development (Hasan et al., 2019; Laeni et al., 2020b; Van Staveren et al., 2018). The WaL program also enabled the co-creation of solutions between the multidisciplinary design teams and local stakeholders. In addition, both programs also attempted to integrate the develop flood resilience solutions in the formal planning process. The integration of the MDP in formal policy plans was particularly evidenced in Government Resolution 120 on 'Sustainable and climate-resilient development of the Mekong Delta' (Government of Vietnam, 2017; Vo et al., 2019). For the WaL program, members of the design teams were also involved in embedding the concepts and solutions from the strategic climate resilience proposals in

Semarang's mid-term spatial plan. As a member of the 'Cascading Semarang' team explained: "We are now actually strengthening the capacities the province on the water-related issues of industries and trying to involve them [the provincial governments] in the acceptance of the ideas of Water as Leverage."

An important difference in the aggregation rules was that of the condition to involve participants, policy makers and local communities in decision-making. The development and implementation of the MDP was an expert-driven and top-down processes based on the strategic interests of the Vietnamese national government and international experts. As the former Water Secretary at the Dutch Embassy in Hanoi stated: "You have got to realize that in Vietnam if you don't involve the top-level, nothing is going to happen. So, it is very simple that you have to work with the official government especially at the ministry level." As a result, the MDP was able to influence the national, provincial, and local water planning projects, which led to a change of mind among policy makers (Seijger et al., 2019). In contrast, the WaL program promoted the importance of a bottom-up process and local coalition building, based on consultation with local communities, the city government, and NGOs (Government of the Netherlands, 2019). As the design lead of 'Cascading Semarang' stated: "We as designers are very much used to working with a lot of stakeholders. We are very much used to working with a lot of different stakeholders, and understanding them and trying to integrate them." At the same time, the community members were reluctant to participate in the consultation process because of the uncertainties and dynamics of the process.

5.5.6 Information rules

The similarity between how the MDP and the WaL program approached the information rules are related to the essential conditions for integrating scientific insights and innovative ideas in resilience building efforts and raising flood awareness. Both programs presented new solutions to address the flood vulnerabilities and to raise awareness of the complex environmental and water challenges of the local context. The MDP offered the framing of the climate-induced problems of the Mekong Delta and recommended a strategic vision for delta management based on scientific insights and expert analysis. These insights and information were relayed to the participants in the Mekong Delta Forum (Korbee et al., 2019). The Mekong Delta Forum also helped to translate and advocate the MDP insights among regional and provincial government officials, such as the need for

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

collaboration beyond their administrative boundaries (Lebel et al., 2006; Seijger et al., 2019). The WaL program supported the design team in conducting design-based research to explore the vulnerabilities of the urban context and to identify possible proactive and integrated resilience solutions. Whilst conducting our research, we found, however, that both programs were less focused on integrating local insights and knowledge into the flood solutions. The essential condition to the integration of local knowledge and existing experience in both programs should be strengthened.

There are two main differences in the approaches of both programs with regard to the information rules. The first difference relates to the essential condition of open communication and local dialogues. In this context, the WaL program focused more on direct communication and interaction with communities for building trust and shared-understanding with local stakeholders, especially at the city level. As the coordinator of the WaL program stated: “The starting point was the development of the solutions together (with the local stakeholders) instead of a solution that was defined by us.” The design lead of ‘One Semarang’ added: “That is a constant process of iteration and feedback. You start with trying to understand what's going on, and then try to ask around.” The key activities for collaboration and communication between the local stakeholders were the design-based research and the co-creation of solutions. A local member of ‘One Semarang’ stated: “I think we value a lot in being able to be quite thorough in our engagement with our stakeholders and communities and getting the information, but also in being able to translate this to what it means for a bigger picture, conceptualizing these things in design terms.” The second difference relates to integrating new knowledge and ideas, in particular the translation and communication of Dutch delta management knowledge, which are more evident in the MDP case. The recommendations regarding ‘integrated delta management’ and ‘living with the floods’ for restoring the natural flood dynamic were influenced by Dutch delta management (Van Staveren et al., 2018; Weger, 2019). In the WaL case, despite the many design team members from Dutch design firms, consultancy companies and other agencies that participated in the WaL program, the design of the strategic climate solutions was less focused on the knowledge translation or adaptation of Dutch delta management as new knowledge and policy ideas.

5.5.7 Payoff rules

The inclusive flood resilience solutions from the MDP and WaL program similarly required external funding. Both the MDP and the WaL program, however, were

unable to secure the required funding for the project implementation. The programs only financed the initial planning process and the development of innovative concepts and solutions. The focus of both programs was to create the essential conditions for identifying and supporting the mobilization of funding for project financing and implementation. To this end, the programs helped local participants develop the financial proposals and linked the local stakeholders with international development organizations and international financial institutions for acquiring international funding. In the MDP case, the program involved the World Bank to stimulate the Vietnamese government to adopt the insights and recommendations of the plan. As a result, MARD was able to acquire the international funding through international development financial loans, the Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project (ICRSL), 376 million USD from the World Bank (Ministry of Agriculture and Rural Development, 2017). The set-up of the WaL program was to provide opportunities for international financial institutions to engage in the resilience by design process by giving the design teams insight into the financial criteria.

Furthermore, both programs tried to ensure social and ecological outcomes from the project implementation. In the MDP case, the funding from the World Bank created conditions to ensure the social and environmental outcomes such as requiring consultation with international experts for the development and implementation of the delta and water management projects (The World Bank, 2016). The Government Resolution 120, for instance, specifically stated the strategic partnership with the Netherlands for technological assistance and investment in the sustainable development of the Mekong Delta (Government of Vietnam, 2017). In the WaL program, multidisciplinary design teams were granted Intellectual Property Rights (IPR) by the program to ensure their continuing role in the further development of the solutions (Laeni et al., 2021). This condition aims to ensure continuous design team roles that could incentivize the design firms, consultants, and organizations to secure the integrated social, ecological, and economic outcomes of the project implementation.

The major difference in the payoff rules was the current state of funding opportunities and mobilization. The MDP, which began earlier than the WaL program, received international loans from the World Bank in 2017 after the plan was launched in 2013. The Mekong Delta Coordinator at the Dutch Ministry of Infrastructure and Water Management stated: “The World Bank and the Asian Development Bank were committed. They had their targets on putting money in the market, and then the money should be spent according to the [MDP] delta

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

principles.” At the time of writing, the funding was yet to be determined for the project implementation for the WaL program. The design teams still have to work with the national government for approval and support regarding the climate resilience proposals. As the UN-Habitat Design Lab lead, one of the international partners of the WaL program, stated: “In Semarang, it took a long time to engage the local authorities because, in Indonesia, everything needs to be negotiated at the national level too, so these two processes were not in sync.” The design team and the city government were also working on project proposals to access different financial sources such as the Dutch government program Develop2Build and the World Bank’s National Urban Development Project in Indonesia (Water as Leverage, 2019a). The materialization of the various design proposals in the project planning and implementation, that is, embedding the solutions in the local and national institutional contexts, is yet to be seen.

Table 5.3: The essential institutional conditions based on the rules-in-use derived from the MDP and the WaL program.

Rules	Mekong Delta Plan (MDP)	Water as a Leverage program (WaL)
1. Boundary rules	The involvement of participants from Dutch experts, policy makers from national levels, and various international development organizations and financial institutions.	The involvement of multidisciplinary design teams from various professional backgrounds, academics, NGOs, and government.
2. Position rules	The participants have a strong role as ‘connectors’ to translate strategic recommendations into the formal policy making process.	The participants were assumed a ‘facilitator’ role in building the social relation and local coalition between the international experts and local design team members and stakeholders.
3. Choice rules	The MDP provided strategic recommendations based on scenario analysis and expert insights for adapting current agricultural practice by focusing on aquaculture and saline-based agriculture.	The WaL program developed strategic climate resilience proposals – six conceptual designs – with specific flood resilience measures at the city scale.

Rules	Mekong Delta Plan (MDP)	Water as a Leverage program (WaL)
4. Scope rules	The MDP aimed to strengthen adaptability and transformability by introducing new agricultural practices that adapt to salination and promote integrated flood risk management through scenario planning and coordination between agencies.	The WaL program aimed to introduce resilience-by-design and develop the resilience solutions for achieving shared visions anticipating robustness, adaptability, and transformability outcomes.
5. Aggregation rules	Decisions in the formulation and implementation of the MDP were driven by experts, academics, and policy officials from the ministries. The plan was enforced and coordinated by the national government.	The decision-making in the WaL program is based on a bottom-up co-creation process that emphasizes building social coalition and participation of local communities.
6. Information rules	The identification of problems and solutions created by the MDP was based on integrating expert insights, analysis, and strategic recommendations from the Dutch delta management.	The identification of problems and solutions creation from the WaL program was based on sharing insight and knowledge from international examples and experience, open dialogue and communication with local stakeholders.
7. Payoff rules	The MDP national government partners secured financial loans from the World Bank with conditions to ensure the social and ecological benefits from the consultation with international experts	The local coalition of the WaL program still needs to acquire a political buy-in of the flood resilience proposals at the national government to activate the implementation process.

5.6 Discussion: strengths, weaknesses, and ways forward

Using the IAD framework to structure the comparative analysis enabled us to specify the essential conditions for the in-depth analysis of the institutional conditions required for inclusive flood resilience planning (see Table 5.2). According to our analysis of the rules-in-use, several institutional strengths and weaknesses were identified in the institutional arrangements of both the MDP and the WaL program. With regard to institutional strengths, we found that the MDP had stimulated essential conditions, particularly relating to the position rules, the aggregation rules and the payoff rules. The MDP was able to involve the national government and international financial institutions in securing and enabling project financing and implementation. The program also stimulated international cooperation for mobilizing both funding and technical support, which would be essential for the implementation of the MDP's strategic resilience recommendations.

In comparison to the MDP, the implementation of the WaL program demonstrated institutional strengths in the boundary rules, the choice rules, and the scope rules. The WaL program introduced a resilience-by-design process as an essential condition to connect a wide range of experts, designers, and consultants with local policy makers, academics, and other stakeholders. In this way, the program created an enabling environment for the co-creation of context-specific flood resilience proposals, thereby addressing the anticipated robustness, adaptability, and transformability outcomes in flood risk management. Moreover, the developed strategic climate resilience proposals communicated a shared vision and commitment of the coalition between international experts and designers and local stakeholders for planning towards inclusive flood resilience. The results also showed that both programs emphasized the use of scientific analysis and expert knowledge as an essential condition in the information rules, that is, related to Dutch delta management (for the MDP) and international examples and experience (in the case of the WaL program).

By comparing the two cases, also several institutional weaknesses in each case were identified. For the MDP case, we found that, like the institutional strengths, the institutional weaknesses related in particular to the position rules, the aggregation rules, and the payoff rules. There was limited consultation with local stakeholders in identifying potential flood strategies and solutions. The decision-making was mainly based on communication and involvement with the national government and international organizations. There was thus a lack of willingness and capacities at the

regional and provincial levels to implement the recommendations of the MDP in the local planning practice; this was also found by previous authors (Korbee et al., 2019; Vo et al., 2019). Despite the ability to secure funding for the MDP, there were uncertainty and ambiguity in funding determinants and arrangements to support the implementation of the MDP. Consequently, it took several years for the involved participants to adopt the ideas from the MDP, and this process had to be supported by international development partners. For the WaL program, the institutional weaknesses could also be identified in the position rules, the aggregation rules, and the payoff rules. The WaL program did not approach the national government in the early planning phase or the co-creation of resilience solutions. As a result, the WaL program partners were mainly the city government and city planning agencies. However, the created solutions required integrating flood resilience policy making at different regional and national administrative levels, and the coordination and approval of the national government. Furthermore, the results show that in the institutional arrangements of both programs there was little integration of local knowledge and existing resilience initiatives. The integration of local knowledge is however relevant for stimulating local ownership and willingness to adopt the flood resilience solutions in local planning practice.

Based on our comparative institutional analysis and the overview of institutional strengths and weaknesses, several general recommendations can be formulated for international resilience programs. These recommendations link to the development of inclusive flood resilience solutions, the integration of the solutions in the formal policy context, and project financing and implementation. Firstly, regarding the solutions, the recommendations could be drawn from our analysis of the boundary rules, scope rules and information rules. The inclusive engagement of diverse actors with willingness and interest to engage in international policy lessons, ideas and solutions from both existing resilience networks and other new policy networks are important. International resilience programs should inclusively involve local actors in developing the program to tailor it to the specific institutional conditions. The international resilience programs should enable the actors with fewer resources and capacities to engage in the resilience planning, policy learning, and international collaboration. In relation to the scope roles, the solutions should not only aim for initiatives to strengthen robustness and adaptability. The enabling environment should also allow for transformability. The structure of the program should therefore promote capacity building among policy makers and practitioners and continuous learning for societal change and innovation. Finally, in relation to the information rules, an essential condition is to enable open communication and

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

dialogue between local participants and partners to integrate local knowledge, insights, and experience in the solution co-creation process.

Secondly, the importance of aligning resilience solutions with the formal institutional context can be explained on the basis of the position rules, choice rules, and aggregation rules. Based on the position rules, this alignment requires the participants taking up the connector role as an essential institutional condition. This regards especially the engagement between the participants and the local and national decision-makers. Based on the choice rules, an essential institutional condition is to integrate the inclusive flood resilience strategies in a broader policy agenda, especially for addressing the socioecological vulnerabilities among low-income communities. These conditions link to the aggregation rules suggesting that international resilience programs should identify different policy windows for alignment of the resilience solutions; for instance, in the city's resilience strategy and global agenda including the United Nations Sustainable Development Goals.

Lastly, recommendations for implementation include the essential conditions relating to the payoff rules and the choice rules. With regard to the payoff rules, we found that explicit communication and certainty in funding determinants could strengthen the willingness and motivation among policy makers to develop and implement flood resilience proposals. Likewise, uncertainty of funding and formalization of resilience proposals could demotivate participants to contribute to the process. While international funding was vital for the implementation of the flood resilience solutions in our case studies, other modes of funding mobilization, such as partnerships with and contributions of private sectors, should also be promoted. In line with the choice rules, our analysis also suggests that it is relevant to stimulate the local ownership, acceptance, and the willingness to approach local and national funders. Although engagement with international programs and experts could foster new ideas and solutions, the continuity and sustainability of the flood resilience ambitions rely on shared local ownership and willingness to take up, finance, and implement solutions by local and national policy actors.

5.7 Conclusion

This study analyzed the institutional conditions that enabled the development and implementation of inclusive flood resilience strategies and studied how international resilience programs could promote these conditions. To this end, we developed an

analytical framework based on the rules-in-use that are part of the IAD framework. Our findings showed that the international resilience programs, which were initiated by the Netherlands, created opportunities to enable various essential institutional conditions in the national and local planning context. It is evident that inclusive engagement with policy actors, open dialogue and communication about the prospects and funding conditions, the integration of scientific analysis for problem reframing and exploration, and the design and co-creation of solutions, are key factors for success. The ability to translate these solutions into formal plans and project implementation relies heavily on the formal positions of the involved actors and the involvement of international funders and development organizations.

With this study, we contribute to a better understanding of essential institutional conditions for supporting national and local flood resilience planning processes in a developing country context. The combination of institutional conditions based on rules-in-use is important for the co-creation of solutions, the alignment of these solutions in the institutional contexts, and the activation of the implementation process. Recognizing the potential of further development and replication of similar types of resilience programs in other developing countries, such as the replication of the resilience by design process in Africa and other parts of the world (Lochhead, 2017), this study suggests that local policy actors should be engaged in setting up the program and adapting the program to the local specific context. This chapter further highlights the inclusiveness dimension in the characterization of the essential conditions, such as the inclusive involvement of actors in the decision-making and co-creation process, ensuring socially equitable outcomes and fairness in flood resilience building and recognizing local interests, knowledge, and experience. To conclude, this study calls for greater attention to the institutional dimension of international resilience programs, particularly the interaction for co-creating solutions and the translation of international solutions to the local implementation process. We suggest that future research could explore different governance strategies for combining international experience with local knowledge, different types of collaborative learning programs among countries in the same region, and shared institutional frameworks for the transition to inclusive flood resilience financing and implementation at both the international and local scales.

Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

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Chapter 5 Institutional Conditions for Inclusive, Flood Resilient Urban Deltas

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The background of the page is a dark gray field filled with numerous overlapping, wavy white lines of varying thickness. These lines create a sense of movement and depth, resembling stylized waves or abstract topographical features. A semi-transparent light gray rectangular box is positioned in the upper left quadrant, serving as a container for the chapter title and subtitle.

Chapter 6

Conclusion and Reflection: Planning for Inclusive
Flood Resilience in the Context of Southeast Asia

6.1 Introduction

Consequences of climate change are making the cities in Southeast Asia the most vulnerable to social and economic impacts from flood risk. Many large cities, such as Bangkok, Ho Chi Minh City, and Jakarta, have experienced several major flood disaster events in the past 10 years. The distribution of the negative impacts of these flood events in the urban context is often unjust. These impacts have led the rural population to migrate to large cities and to inhabit the informal settlement areas, which are often low-lying flood vulnerable locations. They are mostly the low-income populations with limited resources and capacities to cope with flood impacts, and at the same time, they have limited access to government support and opportunities to be involved in formal planning processes. Consequently, these low-income communities are highly likely to face greater negative consequences from flooding and other climate-related risks. To address this issue of increasing flood risk and climate-related challenges, many cities and countries in the region have been engaged in global cooperation platforms and international resilience programs, with their overall aim to improve urban flood resilience, especially in urbanized regions in developing countries.

To date, there has been limited research that examines the required enabling institutional design for building long-term and inclusive flood resilience in developing countries. In addition, the contribution of international resilience programs to transform the existing institutional conditions toward inclusive flood resilience planning is understudied. By taking the evolutionary resilience interpretation as the starting point, this study aimed to understand how institutional transformation for inclusive, urban flood resilience planning can be organized, and how international resilience programs can contribute to this transformation. In particular, the political, dynamic and inclusive dimensions of resilience planning were examined, such as open stakeholder engagement and the role of language in meaning making processes for addressing local water challenges. This study also specifically addressed the enabling institutional design dimension in relation to local institutional capacity building and institutional conditions for facilitating inclusive flood resilience planning.

Chapter 6 Conclusion and Reflection

Following the research aim, the main research question for this study was formulated as follows:

How can institutional transformation for inclusive flood resilience planning in urbanized regions in Southeast Asia be enabled, and how can international resilience programs contribute to this transformation?

To address the main research question, this study developed a critical perspective to examine the inclusiveness of the planning process, the role of language and meaning-making in the formulation of resilience strategies, and the development of enabling institutional conditions and capacities for inclusive flood resilience planning. The first part of this study therefore focused on the interpretation of water policy ideas and the resilience concept in local planning practice. The study started with the analysis of resilience policy development for addressing urban flood risks in a Southeast Asian city (sub research-question 1, Chapter 2). Recognizing the importance of international resilience programs for cross-border learning and collaboration, this study then focused on the translation of water policy ideas from the Netherlands for addressing the local water challenges in Southeast Asia (sub research-question 2, Chapter 3). Consequently, the second part of this study examined the required enabling institutional design for facilitating local inclusive flood resilience planning. In this second part, this study focused on how a specific international resilience program aims to stimulate local institutional capacity building (sub research-question 2, Chapter 4). Local institutional capacities are essential for the development and implementation of flood resilience solutions. Additionally, this study investigated the essential institutional conditions for enhancing local flood resilience planning processes (sub research-question 4, Chapter 5). This analysis was based on the comparative perspective of two international resilience programs in Southeast Asia.

This concluding chapter draws together and discusses the major findings from this study in order to answer the sub research-questions and main research question. Following Section 6.2, this chapter then discusses these findings and their implications in the context of flood resilience literature. The following sections in this chapter include contributions to flood resilience research and a reflection on the research process. This chapter ends with recommendations for future research and lessons for planning practice.

6.2 Main findings: addressing flood vulnerabilities by inclusive flood resilience planning

6.2.1 Conceptualization of inclusive flood resilience planning

How can we understand resilience policy development for addressing flood vulnerabilities in a city in a developing country?

To answer the first sub research-question, inclusive flood resilience planning was conceptualized in terms of strategy, process, and outcome. As part of the critical perspective developed in this research, policy framing was adopted as an analytical approach to analyze the way in which both ‘insiders’ and ‘outsiders’ interpreted the flood resilience concept in local planning practice. The findings from in particular Chapter 2 provided insight into the power dimension and the political processes involved in the development and implementation of the Bangkok Resilience Strategy where the resilience concept was introduced to improve the urban flood risk management. In addition to the main findings from the analysis of the Bangkok Resilience Strategy, relevant findings from other chapters are also used in answering this sub research-question.

The empirical analysis in Chapter 2 indicated that structural flood protection remains dominant in the urban flood risk management strategies in Bangkok. The analysis of the Bangkok Resilience Strategy however also showed that city governments in developing countries nowadays attempt to move away from this reliance on structural flood protection and try to incorporate more diverse and holistic flood risk management strategies in their resilience plans. The resilience policy development in Bangkok indicated in particular the inclusion of flood adaptation strategies. The development of spatial adaptation measures was similarly evidenced in Chapter 4 in which strategic climate resilience proposals promoted long-term and integrated solutions for reducing the urban flood risks in Semarang. Despite the attempt to move away from depending on structural flood protection strategies, the implementation of these flood adaptation strategies for both Bangkok and Semarang, in practice, remains challenging. In the case of Bangkok, for instance, an economic growth frame was dominant in the development of the resilience policy; thereby, reinforcing the existing structural flood protection strategies including increasing the height of dikes, constructing drainage tunnels, and increasing urban drainage capacities.

Chapter 6 Conclusion and Reflection

Regarding the flood resilience planning process, inclusive and open stakeholder collaboration is important for developing inclusive flood resilience strategies. The development of Bangkok's resilience policy involved the negotiation of meaning among various policy actors for interpreting resilience into the strategy, process, and anticipated outcomes. This study showed that international experts and policy actors are predominantly involved in the development of resilience policies in the local context of the developing countries. The findings from Chapter 2 indicated that resilience policy development often mainly involves these 'insiders', while there are limited opportunities for other stakeholders – 'outsiders' such as local communities and civil society organizations – to engage in resilience policy development, such as in the development of Bangkok Resilience Strategy. In the case of the WaL program in Semarang, in particular the role of international experts and designers was evidenced in the design and co-creation of the flood adaption solutions (Chapter 4). In both cases, this study suggests that there should be greater opportunities for local NGOs from these cities to engage in proposal development to define specific measures and interventions. It is essential to integrate local voices, interests, and perspectives in the making of urban flood resilience policy. Insights from the outsiders point out that a top-down government approach is not effective to motivate community members to work together (Chapter 2). A greater emphasis should therefore be placed on engaging local communities in sharing knowledge and training for flood preparedness, emergency response, and evacuation.

With regard to the anticipated outcome from flood resilience planning, findings in this study indicated that the economic-oriented outcome is dominant in the interpretation of resilience and water policy ideas in the local planning practice. However, this study argued that pursuing only economic growth in urban flood risk management without considering other ongoing and increasing physical and social vulnerabilities will make it more difficult for urbanized regions to cope with and to anticipate flood challenges. In the development of Bangkok's resilience policy, the interpretation of resilience focused on protecting the city and safeguarding the economic development from the potential impacts of flood and climate-related risks (Chapter 2). Consequently, this economic growth frame supported the continued implementation of structural flood protection and drainage infrastructure rather than leading to more adaptative and evolutionary ways of dealing with the flood risks. Similarly, in Chapter 3 the economic interest was also found to be dominant in the formulation of the local-specific strategic recommendations for the Mekong Delta, which resulted in recommendations for promoting in particular specialized agricultural production in the face of climate change. Hence, the implementation of

resilience policies in practice still emphasized investment in technical and engineering strategies for flood protection with limited attention to addressing the complex interrelated social challenges arising from flood and climate risks.

This study showed the importance of an increasing awareness of current and potential societal impacts in the development of flood resilience policies, proposals, and interventions. This included the social impacts from the relocation of informal settlement communities. The organization of local community engagement and the integration of societal outcomes in flood resilience planning are therefore needed to prevent the unjust distribution of current and potential flood impacts. In this context, the findings from Chapter 2, as well as Chapter 4, also highlighted the important roles and engagement of local governments and other stakeholders to ensure inclusive outcomes of flood resilience policies.

6.2.2 Water policy translation from a developed to a developing country

How do international water policy ideas travel across borders and how can these ideas contribute to the development of water solutions to address local water challenges?

To address the second sub research-question, Chapter 3 focused on water policy translation from the Netherlands to Southeast Asia. In line with the critical perspective developed for this study, a framing perspective was adopted to reconstruct, on the one hand, how water policy ideas are created and mobilized as global water solutions, and on the other hand, how the meaning of global water solutions is interpreted in local water planning practice. Apart from the main findings from Chapter 3, insights from other chapters are also used to highlight the strategic and political processes in this cross-border traveling of water policy ideas.

Water policy translation is an inherently complex, dynamic, and political process. By connecting a framing perspective to policy translation, four key dimensions in the translation of global water solutions were distinguished in Chapter 3. The first dimension highlighted the role of water policy experts in strategically and politically framing global water solutions, thus the creation of an international water policy frame. In the Vietnamese Mekong Delta Plan case, the water policy translation of the Dutch delta management approach, thus the travel of water policy ideas, began with Dutch water policy experts, consultants, and academics defining the meaning of global water challenges and promoting particular ideas as global water solutions. As a result, the Netherlands defined rising sea levels, land-subsidence, and coastal

Chapter 6 Conclusion and Reflection

degradation as common and urgent global water challenges. The developed global solutions specifically focused on enhancing water security and improving sustainable delta management. The internationalization of Dutch water management thus resulted in the development of the Dutch delta management frame.

A second dimension that could be distinguished was the mobilization of the developed global water solutions, in this case the Dutch delta management frame, in other countries through knowledge transfer and delta diplomacy. The framing analysis in Chapter 3 portrayed the strategic partnership between the Dutch consultants, experts, and diplomats and international organizations such as the World Bank, which was significant in the promoting of the international water policy ideas. The creation of global resilience policy platforms, such as the Global Delta coalition, and the initiation of international resilience programs promoted opportunities for the Dutch water experts to position the Dutch delta management frame in global water policy agendas.

The third policy translation dimension that was distinguished was the adaptation of the international water policy ideas for local-specific water solutions – that is, the creation of a local-specific water policy frame. The travel of resilience and water policy ideas, and the translation of these concepts in local water planning practice, always involves the adaptation of meaning. In Chapter 3, the empirical analysis illustrated this adaptation of meaning in terms of a shifting narrative from addressing water and climate challenges to strategic planning for promoting in particular a transition in the agricultural sector. As a result of dominant economic interests, the Mekong Delta management frame focused on the economic development of the agro-business industrialization in the delta region. As explained earlier, economic interests were similarly dominant in the analysis of flood resilience policy development in Chapter 2.

The fourth and last dimension was the embedding of the developed local-specific water policy frame, and the solutions that are promoted by this frame, in local water planning practice. This study showed that local willingness, acceptance, and shared understanding at the local level are crucial in translating new ideas into local practice. The analysis of Chapter 3 indicated that there were challenges in embedding the key concepts of the Dutch delta management frame, such as ‘collaborative governance’, ‘scenario planning’, and ‘agro-industry’, in local water planning practice. These key concepts were not developed together with the local stakeholders (Chapter 3). This resulted in a lack of willingness and acceptance of the recommendations of the Dutch as well as the Mekong delta management frame. In addition, this study revealed that some water policy ideas, such as ‘long-term

scenarios' and 'preferred solutions' which were based on 'scenario planning', were used to justify or strengthen existing strategies rather than promote other flexible and adaptative strategies. To avoid the misuse of policy ideas, an inclusive process for creating a shared understanding of new possibilities among local actors is essential. Chapter 4 and 5 also emphasized the importance of continuous learning and long-term engagement for local capacity building in the translation of international water policy ideas for addressing local water challenges.

Based on the findings of this study, it can be argued that the travel of water policy ideas helps beneficiary countries to address local water challenges in three major ways. Firstly, the water policy translation process can help local policy makers to identify and highlight local water challenges. In the Vietnamese Mekong delta, the collaboration between Dutch water experts and local academics and policy makers was an important step in defining the specific local water challenges. The problem analysis of the MDP pointed towards the limited availability of freshwater supply, salt-water intrusion, and the high land-subsidence rate as the climate threats to the future of the agriculture sector.

Secondly, the travel of water policy ideas can support the development of long-term solutions to address local water challenges instead of using a short-term and reactive approach (see also Chapter 5). In the case of the MDP, the formulation of the local specific water policy frame was based on scenario planning and long-term policy changes in agriculture and water management.

Thirdly, the engagement of policy actors in the water policy translation process can support policy actors in beneficiary countries in proposal development and project implementation. The strategic partnership between the Netherlands and various international development organizations was significant in the mobilization of funding for further development and implementation of the projects and solutions of the local Mekong delta management frame. The implementation of the MDP received strong support from many intranational development partners, including financial loans from the World Bank (Chapter 3). However, the analysis of the WaL program in Semarang (Chapter 4) indicated that the local government and stakeholders encountered institutional challenges when attempting to initiate and activate the financial proposals for project implementation. Apart from stressing the role of language and meaning-making, the critical perspective developed in this study also emphasizes the need for understanding local institutional capacities and enabling institutional conditions by international resilience programs for the advancement and realization of water policy ideas and flood resilience solutions in local contexts.

Chapter 6 Conclusion and Reflection

6.2.3 Local institutional capacity building for flood adaptation

How can international resilience programs enable the building of local institutional capacities for the development and implementation of flood adaptation strategies?

Proactive and integrated flood resilience strategies are often difficult to realize in practice. An enabling institutional design is therefore required for inclusive flood resilience planning. Sub research-question 3 therefore focused on the different ways in which international resilience programs can enable institutional capacity building for the development and implementation of such strategies. To this end, this study developed an institutional capacity-building framework that focuses on three elements of institutional capital: intellectual capital, social capital, and political capital. The findings of in particular Chapter 4 revealed how an international resilience program such as Water as Leverage (WaL) for Resilient Cities Asia could stimulate the building of local institutional capacities by mobilizing and strengthening these three capitals. In addition, findings from other chapters are also used to illustrate the local institutional capacity building for inclusive flood resilience.

For intellectual capacity-building, this study found that international resilience programs often enable the introduction of new ideas and insights for the formulation of flood resilience solutions. At the city level, the WaL program in Semarang facilitated a learning process for the sharing and the co-creation of flood resilience ideas and solutions by, for instance, creating a 'soft space' for stakeholder interaction. Such a soft space could support the informal interaction to introduce new ideas and perspectives by integrating insights from actors across boundaries of governance and disciplines. This study revealed that the organization of a 'resilience by design' process by the WaL program was able to mobilize knowledge resources among the members of the involved multidisciplinary design teams in Semarang (Chapter 4). Similar to the policy translation of water policy ideas in Chapter 3, this process was important for strengthening local institutional capacities for the identification of local flood and climate vulnerabilities and the formulation of new solutions. The results of the resilience by design process were the conceptual design and proposals, which contain multiple integrated flood and water resilience programs for addressing the urban flood and climate risks of Semarang. However, the challenge was how to sustain the momentum of this learning process. This study found that the resilience by design process, including a design contest, design-based research, and design workshops, was not embedded in the local planning context by

Semarang's planning agencies. This was also not the primary objective of the program. However, this study argued that this embedding is essential to strengthen reflexive and double-loop learning for the continuous adjustment of planning practice in urban flood risk management. In the case of Semarang, localizing and embedding the resilience by design process in the local planning context is highly relevant to support the city in dealing with current and future flood challenges.

In terms of social capital, this study found that international resilience programs often provide opportunities to connect various actors for the building of local resilience coalitions and creating shared resilience visions. However, this study also showed that there was limited attention in international resilience programs for long-term engagement to enhance the social capital among the policy makers and stakeholders. The strengthening of social capital is essential because it promotes the development of shared values for long-term flood resilience solutions. This is important for transforming existing water planning practices. With its resilience by design process, the WaL program was able to bring together international and local spatial designers, academics, urban planners, water experts, social workers, international and local NGOs, and international and local financial institutions (Chapter 4). This knowledge interaction in the WaL program also contributed to the building of social connections between the design team members to continuously exchange their insights and experiences. The findings from Chapter 4 and Chapter 5, however, called for a greater representation of city-based NGOs and other civil society organizations, such as the organizations that are based in Semarang, in the multidisciplinary design teams, and the resilience by design process. This study also suggested providing opportunities for the local NGOs with limited resources to engage in this planning and design process. In addition, a strong connection to the local context and the representation of local organizations could significantly contribute to local institutional capacities sustaining their resilience ambitions and planning efforts.

Regarding political capital, this study showed that the engagement in international resilience programs provides opportunities for mobilizing political support and acquiring funding for flood resilience project financing and implementation. Both Chapters 3 and 4 illustrated that an international resilience program can support policy makers from national and local governments in developing financial proposals and acquiring funding from international sources. In this regard, the strengthening of political capital is especially needed for obtaining essential resources including funding for activating the implementation of the flood adaptation strategies. The insights from Chapter 4 showed that in Semarang the

Chapter 6 Conclusion and Reflection

ownership and support of the local government and the active contribution of the city's change agents, including the local resilience team, were significant for the uptake of the flood adaptation strategies in the further implementation phase. However, specifically in the case of Semarang, the missing formal link with the policy makers from the national government hindered the advancement of the flood adaptation solutions into proposal development, financing, and implementation. This study, therefore, highlighted that the formal link with the national government is required along with the empowerment and leadership of local change agents, such as Semarang's resilience team and the local WaL task force (see also Chapter 5).

The analysis of local institutional capacity building could add to the understanding of the institutional strengths and weaknesses of international resilience programs for supporting urban flood adaptation. Despite the abilities of international resilience programs to enhance the local capacities to develop flood adaptation strategies, the capacities for transforming these strategies into project implementation were limited. In-depth insights into specific institutional conditions are therefore needed to enable policy makers and other stakeholders to not only develop and also implement flood resilience strategies.

6.2.4 Institutional conditions for enabling inclusive flood resilience planning

Which institutional conditions promote the development and implementation of inclusive flood resilience strategies by international resilience programs?

Additional to institutional capacity building, enabling institutional conditions is another important element for facilitating inclusive flood resilience planning in this study. Enabling institutional design is therefore also an important part of the critical perspective developed in this study. To answer sub research-question 4, Chapter 5 looked specifically at how international resilience programs promote essential conditions for institutional transformation by using the IAD framework. The MDP in Vietnam and the WaL program in Semarang were selected as the cases for the comparative analysis. Based on the main findings from Chapter 5 and the combination of the main findings from other chapters, four main institutional conditions were identified as essential for inclusive flood resilience planning.

The first condition relates to the local willingness and ownership of both the developed flood resilience solutions and the inclusive flood resilience planning and design process. This condition is directly linked to the boundary rules for allowing

diverse policy makers and experts from various disciplines and sectors to jointly develop flood resilience solutions. Together, they could draw lessons from each other for the development of more inclusive flood resilience solutions. As previously mentioned, it proved to be important to not only engage a broad range of policy actors but also various local stakeholders, financial institutions and international organizations for enabling the introduction of holistic and integrated flood resilience strategies (Chapter 4 and Chapter 5). Especially vulnerable communities need to be involved in an open and inclusive process in the designing of flood adaptation solutions (see also Chapter 2). The case analysis in Chapter 4 highlighted the need for greater involvement and representation of the local-based NGOs and stakeholders in the design process. The studies in Chapters 3–5 indicated the importance of local ownership for realizing the solution in practice. This process is not only essential for realizing new solutions but also for raising awareness of long-term policy change. This is a major challenge to the resilience by design process when moving from the design process to the implementation phase (Chapter 3). The implementation of flood resilience solutions relies on ownership and strong political will of the government agencies at local and national levels – thus not only on the capacities of the multidisciplinary design teams. Next to the boundary rules, it is therefore also important to consider the information rules to enable open communication and continuous dialogue for shared-ownership and understanding of the flood resilience strategy development and implementation among the international policy actors, multi-disciplinary teams, city resilience networks, local and national governments, and local communities.

The second condition concerns the alignment between flood resilience solutions and formal planning and policy-making processes. The position rules are important to consider for international resilience programs when approaching key policy makers. This study pointed out that international resilience programs need to engage with policy makers that have the position to connect proactive and integrated flood resilience solutions to formal policy, planning and implementation (Chapter 5). The local resilience front-runners, such as Semarang's resilience team and Chief Resilience Officers, could also function as links that enable this formal policy alignment. However, Chapter 4 indicated that this is not enough if there is a lack of political support from national authorities. The findings from Chapters 4 and 5 illustrated that it is important to involve the decision makers, especially from the national government, at the early start of the programs. The missing link with the national government could limit capacities and willingness to support local governments and stakeholders to initiate a financial proposal for flood resilience

Chapter 6 Conclusion and Reflection

financing and implementation. The findings in Chapter 5 demonstrated that one of the key strengths of the MDP, when compared to the WaL program, was the ability to involve the national government and international financial organizations in embedding the local water policy solutions in the local water planning practice. Policy alignment is also related to the aggregation rules that identify policy windows to integrate flood resilience solutions in concrete local policy and planning processes. Chapter 5 suggested integrating the flood resilience proposals in the existing city's resilience policy, such as in this case, the Bangkok Resilience Strategy and the Resilient Semarang Strategy, and, at a national and global scale, the Sustainable Development Goals. It is also important to consider the alignment of new flood resilience proposals with previous and ongoing resilience initiatives.

The third condition focuses on the prospect of funding and implementation. The analysis in Chapters 4 and 5 revealed that the uncertainty with regard to the project implementation and the prospect of project funding could hinder the effectiveness of community engagement during the design of the solutions. This condition relates to the payoff rules that focus on identifying and mobilizing funding for realizing the flood resilience solutions in practice. Chapter 5 suggested open and clear communication about funding opportunities and constraints. The results of Chapter 3 showed that unclear communication about the sources of funding for financing the recommendations from the MDP resulted in a long delay in the materialization of the MDP. The insights from Chapter 5 highlighted the exploration of shared local responsibilities and willingness to take up, finance, and implement solutions by local and national policy actors. Other modes of funding, including partnerships with and contributions of private sectors, should also be explored.

The fourth and last condition involves learning for transformative change. This study highlighted the concept of 'soft space' for enabling creative and collaborative resilience planning processes (see Chapter 4). Soft spaces could enable transformative change for reframing existing policy goals and envisioning the new planning process. The aspiration of this long-term policy change links to the fostering of institutional change and innovation, particularly the scope rules – it is thus important that these processes address not only robustness and adaptability, but also transformability. Chapters 3 and 5 indicated the need for continuous learning for transforming existing planning practice. A resilience by design process, as discussed in Chapter 4, could encourage the learning and experimentation with new solutions and ideas. The findings from Chapters 2 and 5 also revealed that the integration of local knowledge, experiences, and insights are key in stimulating a sense of local ownership and willingness to adopt and take on flood resilience solutions in practice.

This study suggested that long-term policy change should be considered when engaging local actors in both knowledge transfer and local capacity building in the local context.

6.2.5 Enabling institutional transformation for inclusive flood resilience

Building on the main findings from Chapters 2–5 presented in the previous sub-sections, the aim of this sub-section is to address the main research question of this study by firstly highlighting the importance of institutional transformation, and secondly by reflecting on the possibilities of international resilience programs to contribute to this transformation. To address the main research question, four main findings in relation to the enabling institutional design for inclusive flood resilience planning in urbanized regions in Southeast Asia were highlighted in this study.

The first is the importance of an open and true inclusive process for community engagement and stakeholder consultation. This study argued that the development and implementation of flood resilience policies need to integrate local voices from both outsiders and insiders. The analysis of the cases in this study revealed that outsiders of resilience policy making, especially the vulnerable communities, called for more space for their voices, thus suggesting a greater local engagement in urban flood risk management policies. Inclusive stakeholder engagement was also central in the resilience by design process for the co-creation of integrated and holistic urban flood resilience strategies. This study also confirms that an inclusive process is important to stimulate local ownership and willingness to support flood resilience initiatives. The second main finding relates to the building of long-term local institutional capacities for inclusive flood resilience planning. These capacities, which are based on intellectual, social, and political capitals, are essential for initiating, adopting, and sustaining flood resilience efforts. The organization of a soft-space, for instance, could stimulate the envisioning of and experimentation with concrete and local-specific urban flood resilience solutions. The third main finding of this research highlights the indigenization of international water policy ideas in local water planning practices. The adoption of the resilience concept and other international water policy ideas should enable the introduction of a new approach to reducing flood and climate risks rather than reinforcing existing strategies. To this end, resilience policy makers need to reflect on the social impacts of existing flood protection infrastructures and strategies and explore new and more diverse policy options for improving urban flood resilience. The fourth and final

Chapter 6 Conclusion and Reflection

main finding relates to the formation of new policy networks and local resilience coalitions. This study pointed out that the establishment of local resilience networks and coalitions is essential for the continuity of flood resilience initiatives. They served as the front-runner for the urban flood resilience policy development and for bridging the social connection between the international experts and local stakeholders. The building of local resilience coalitions is therefore important for long-term policy development to address complex local water-related challenges.

The findings in this study also demonstrated different possibilities for international resilience programs to contribute to this institutional transformation. Firstly, international resilience programs can enable the strengthening of learning and collaboration processes. Translating the flood adaptation solutions into policy implementation asks for a collaborative process that draws on diverse insights and knowledge across disciplines and practices. This study showed that the organization of a resilience by design process could enable the sharing of knowledge between international resilience experts and designers and the local government, the local resilience team, and other stakeholders involved. It is equally important for international resilience programs to embed this local learning environment in the formal planning process to increase the capacities of stakeholders for enhancing reflexive learning and ensuring continuous adjustment of urban flood risk management solutions. Secondly, international resilience programs can provide opportunities to translate new ideas (e.g. global water solutions) for enabling the long-term policy change. This study highlighted the long-term engagement and social relation between countries in cross-border learning as an opportunity for addressing local water challenges. While previous studies stated that the existing water-planning practices tend to concentrate on short-term and reactive responses, bringing new ideas into the local context could stimulate the creation of long-term resilience visions to respond to current and future climate risks. Thirdly, it is significant for international resilience programs to empower local resilience policy makers. International resilience programs can provide access to local resilience policy makers in global resilience collaboration platforms. It could be relevant to provide resources and to integrate the local resilience coalitions and resilience offices in the wider national and international networks of policy officials and experts. Lastly, international resilience programs are pertinent for increasing opportunities to acquire funding for local flood resilience projects. This study suggests international resilience programs engage political decision makers, at the national level, for activating the proposed flood resilience strategies. Collaboration between national policy makers and international financial institutions, such as the World Bank and

Asian Development Bank, is important for the prospect of funding and implementation.

6.3 Discussion: towards inclusive flood resilience planning

To address the main aim of this study, this section will discuss the following four major elements primary to inclusive flood resilience planning: social justice in flood resilience planning, the application of a resilience by design process, the travel of global water solutions, and transformative change by international resilience programs.

6.3.1 Social justice in flood resilience planning

From the start, this study emphasized the social justice dimension of urban flood resilience. As argued in previous literature (Cannon & Müller-Mahn, 2010; Davoudi, 2018; Keil, 2005; Mullenite, 2016), the issue of social justice in urban flood resilience policy should not be overlooked. Adopting a critical perspective, this study introduced policy framing as an analytical approach to explore the power dimension and the political processes involved in resilience policy development, thereby reconstructing the negotiation of meaning during the development of urban flood resilience policy and integrating insights from ‘insiders’ as well as ‘outsiders’. The analysis in this study revealed that official policy actors and experts, the ‘insiders’, are dominant in the interpretation of resilience in the local context. The role of ‘outsiders’, especially the vulnerable communities and civil society organizations, was limited in the studied resilience policy development processes. This finding is consistent with previous literature arguing that resilience building processes tend to exclude local communities, which often results in the reinforcement of technical and engineering measures (Cannon & Müller-Mahn, 2010; Davoudi, 2018; White & O'Hare, 2014). Especially in the urban context, resilience interventions can reinforce socioeconomic vulnerability and inequality (Anguelovski et al., 2016; Kaika, 2017). In the context of developed countries, there was resentment among the affected communities towards the techno-managerial approach that was imposed– for the case of Hurricane Katrina post-disaster recovery plans (Kaika, 2017). In developing countries, resilience policy is still in the making. The social justice issue and inclusive

Chapter 6 Conclusion and Reflection

dimension in flood resilience planning should therefore be anticipated by the city's resilience policy makers to prevent the deepening of unequal flood vulnerabilities among local communities. To address this concern, this study suggests a greater emphasis on organizing an inclusive process to integrate the voices of a broader range of stakeholders and to allow various actors to develop ideas contributing to the planning of inclusive, urban flood resilience.

Furthermore, this study revealed that the formulation of resilience policy, such as the Bangkok Resilience Strategy, generally does not directly lead to the introduction of a new planning approach to urban flood risks. There is a need for exploring the interpretation of resilience into policy formulation, the planning process, and the anticipated outcomes in urban flood risk management. In this study, the analysis of resilience policy framing indicated that the economic policy frame is dominant in the resilience interpretation for urban flood risk management. As a consequence, instead of exploring and experimenting with new flood resilience solutions (Hegger et al., 2016; Zevenbergen et al., 2008), resilience policy may well reinforce existing measures for flood protection. This study stresses that the development of resilience policy should promote new types of long-term solutions that address the increasing and ongoing flood risks of the city (Driessen et al., 2016; Liao, 2012; Rosenzweig et al., 2018; Sörensen et al., 2016). This argument is in line with other resilience policy studies arguing that resilience policies should promote forward-looking and transformative change rather than reactive and short-term responses in managing urban flood risks (Handayani et al., 2019; Spaans & Waterhout, 2017). Recent flood resilience literature also emphasizes the importance of integrated spatial strategies for designing urban infrastructure, open spaces, urban parks, and river systems to reduce urban flood risks (Brown et al., 2018; Dai et al., 2018b; Nilubon, 2021; Rosenzweig et al., 2018; van den Brink et al., 2019). Despite the rising attention on developing and promoting integrated flood resilience strategies, this study showed that these types of flood resilience strategies for enhancing flood adaptation and raising risk awareness were hardly introduced in practice. This study therefore suggests that urban flood resilience policies should promote the adoption of flood adaptation strategies to ensure long-term and societal outcomes in urban flood risk management.

Finally, an important insight arising from this study is the need for an inclusive approach to dealing with urban informal settlement communities. In many cities, informal settlement communities are perceived as a complex challenge to flood risk management in particular, and to urban management in general (Dahiya, 2012; Hugo & Bardsley, 2014). This study put forward the consideration of an inclusive

approach for addressing this issue. Instead of focusing on technical measures and legal enforcement, broader social, economic, and cultural measures should be integrated into urban flood resilience policy development. For short-term solutions, the insights from this study suggest that it is important for governments to provide fair compensation along with other economic support for their social and job security if the communities will be relocated. Regarding the long-term perspective, this study recommends the reframing of the informal settlement issues in broader sustainable urban management terms and also policies. In this context, it is important to stimulate the awareness that the economic outcome could become dominant when framing the informal settlement issue in broader urban and public policy terms. To prevent this from happening, the social inclusive frame should be considered when developing urban management policies. This means that the focus of city governments should be broader than reinforcing flood protection. Other societal outcomes, relating to addressing economic equality and the improvement of social housing, should also be considered along with reducing urban flood risks and restoring the urban water system.

6.3.2 Application of a ‘resilience by design’ process

Recognizing the significant roles of local policy actors, this study highlights the application and potential of a ‘resilience by design’ process to ensure inclusive outcomes in flood resilience planning. As outlined in earlier studies, ‘resilience by design’ was recognized as a novel and creative approach to enable cities to formulate more proactive and integrated flood resilience strategies (Lochhead, 2017; Nillesen et al., 2021; Trogrlić et al., 2018). In line with previous research, this study has demonstrated the contribution of resilience by design in the building of institutional capacities among local governments and stakeholders. This study combined theoretical insights from institutional capacity building literature (Booher & Innes, 2002; Cars et al., 2017; Healey, 1998) and flood resilience literature (Gersonius et al., 2016; Hegger et al., 2016; Liao, 2012; Restemeyer et al., 2015; Zevenbergen et al., 2008) to provide a deeper understanding of the institutional strengths and weaknesses of the application of a resilience by design approach in a developing country context. The focus was on the application of a resilience by design approach in the context of the developing countries – the focus was specifically on the WaL program in Semarang. WaL is the only program in Southeast Asia that adopted a resilience by design approach (next to Semarang, also in the two other WaL pilot cities, Chennai

Chapter 6 Conclusion and Reflection

in India and Khulna in Bangladesh, a resilience by design approach was adopted). In this context, the resilience by design process was centered on multiple engagement activities, including a series of design workshops between the multidisciplinary design teams and local stakeholders. This created a soft space (Allmendinger & Haughton, 2009) for learning, strengthening social relations, and establishing the local coalition for the creation of flood resilience solutions and the identification of opportunities to formalize and implement the developed flood resilience strategies. This study confirms similar findings as Nillesen et al. (2021), namely that the application of a resilience by design process in Semarang enabled the construction of integrated flood and climate resilience strategies innovatively and inclusively.

Despite its potential application for local capacity building, this study further substantiated the institutional challenges related to the implementation of a design-led planning process. In line with previous findings regarding the implementation challenges of the resilience proposals from the Rebuild by Design program in New York (Lochhead, 2017; Trogrlić et al., 2018), similar institutional challenges could be identified in the case of the WaL program. The first challenge relates to the funding for proposal development and the implementation of flood resilience solutions. The integrated flood resilience proposals resulting from a resilience by design process often require large-scale funding, usually from multiple sources (Lochhead, 2017). Acquiring funding from different sources, such as the local and national governments and international funders, could mean that proposals become fragmented, resulting in smaller programs and projects. It thus remains challenging to retain the integrated character of the flood resilience proposals while mobilizing different sources of funding.

Embedding the developed resilience solutions in the local and national institutional contexts, thus the actual implementation process, is the second challenge. The possibility for flood resilience project implementation is determined by actual ownership of flood resilience solutions by government actors. In both Semarang and New York, this proved to be a challenge because the creation of the solutions was led by multi-disciplinary teams or 'resilience designers' with support from international resilience programs and international development organizations (Ovink et al., 2021). The smooth transfer of ownership or the shared ownership of urban flood resilience solutions is crucial. This study therefore suggested that the active involvement of local governments in the design of the solutions is important to ensure the practicality and compatibility of the flood resilience proposals in the formal administrative context. Relating closely to the active engagement of the local government, the third and last challenge concerns the political buy-in and continuity

of political support for this creative process. A resilience by design approach requires an investment of time in the creative process including design-based research, the design contest, the co-creation and design of solutions, and the development of flood resilience proposals. These processes require continuous political support from official decision makers in the beneficiary countries. The changes of leadership in local government agencies and community and municipality boards could be a risk to discontinuation of this creative and collaborative process.

In contrast to previous literature, this study highlighted that the building of social relations and leadership of local actors is essential for the long-term and transformative impacts (Few et al., 2017) of the resilience by design process to take effect. Based on insights from the evolutionary interpretation of the resilience concept, the establishment of new networks and coalitions between stakeholders is an important element of institutional transformation (Hegger et al., 2016; Restemeyer et al., 2015). In this context, this study illustrated the importance of a city's resilience team, consisting of local academics, NGOs workers, and policy officials, as 'change-agents' (Meijerink et al., 2010) who supported the local application of a resilience by design process. These local academics, for instance, played an important role in facilitating the engagement with local governments and communities.

At the same time, these knowledge actors also supported the translation and localization of new ideas and solutions in the local context. The empowerment of and engagement with these local resilience networks and knowledge institutions is thus an important part of the resilience by design process. This could ensure the continuity of the flood resilience planning efforts and improvement of the local resilience planning capacities in the local context. This study also presented the significance of building social relations for building trust, increasing understanding, and creating a common vision (Alexander et al., 2016; Booher & Innes, 2002). Informal interaction and continuous engagement between resilience designers and local stakeholders should be considered as an important part of resilience by design types of programs and initiatives. These considerations are necessary for a better understanding of the application of a resilience by design process in the planning context and to provide recommendations for the future application of such a process elsewhere.

Chapter 6 Conclusion and Reflection

6.3.3 The travel of global water solutions

As discussed in the previous section, this study reflected the cross-border learning and translation of global water policy ideas for addressing the water challenges in the context of urbanized delta regions in developing countries. The translation of the Dutch delta management approach, especially in the Vietnamese Mekong Delta Plan, provided a prime example. In this context, this study examined the strategic framing of the Dutch delta management approach and its internationalization. The Netherlands highlighted the major aspects of its global water solutions by referring to the application of delta technology, the improvement of delta governance and planning processes, and the adoption of the Adaptive Delta Management approach. The case of the Netherlands is relevant, as the country has positioned itself as a global ‘partner for water solutions’ by promoting the Dutch delta management approach in other parts of the world including in Southeast Asia. By using the development of the MDP in Vietnam as a case study, this study showed that the global Dutch water solutions were strategically constructed to increase the involvement of Dutch water agencies, including government and private parties, in flood resilience projects abroad.

In line with other research, this study thus reflected the strategic engagement of Dutch policy officials, diplomats, the Water Envoy, experts and consultants with decision makers, academics, and local stakeholders in the developing countries (Hasan et al., 2019; Minkman & van Buuren, 2019; Weger, 2019; Zevenbergen et al., 2012). They played significant roles in the process to create a success story about the application of global water solutions, and, by doing so, increased the economic opportunities of Dutch companies in the private water sector of the Netherlands. What is different in this study is – thereby contributing to the discussion on the politics of water policy and knowledge – that this study stresses the importance of unpacking language use in water policy translation. By adopting this critical perspective to water policy translation research, this study thus highlights the importance of the reconstruction of meaning in international water policy frames as they travel across contexts and borders.

There are both opportunities and risks in regard to the use of global water solutions in cross-border learning for addressing local water challenges. In terms of opportunities, the creation of global water solutions could stimulate the transfer of knowledge and the organization of a collaborative learning process. These are required for developing a shared understanding of potential solutions, examples, and concepts in water policy and urban flood risk management. As explained previously

in Section 6.2, such a collaborative learning process could influence the identification of common visions and the formulation of flood resilience and water management solutions. The framing and promotion of global water solutions could also attract the attention of policy makers from counterpart countries, which is in line with recent insights relating to the marketization and branding of the Dutch Delta Approach (Minkman & van Buuren, 2019).

In terms of risks, the focus only on mobilizing global water solutions without explicit consideration of the translation and communication process could lose meaningful social connections on the ground. Promoting 'packaged' and 'ready-made' solutions may disregard the local context and the need for a social process for stimulating the understanding and adaptation of global water policy ideas. This could lead to top-down knowledge transferring and unequal relations, for instance, between the developed and developing country, the donor and recipient country, and between experts and users. Hasan et al. (2019) also highlighted this frequent hierarchical and asymmetrical relation between the origin and destination of policy ideas. Building on this observation and other studies (Seijger et al., 2019; Vo et al., 2019; Weger, 2019), this study suggests the consideration of a social and inclusive process in the travel of global water solutions that focus on building shared understanding and jointly identifying local risks and potential solutions based on a policy translation approach (Lendvai & Stubbs, 2009; McCann, 2008; Mukhtarov & Daniell, 2014). This study also highlighted the concept of indigenization (Stone, 2017), that is, the adaptation of water policy ideas in the local context. To understand this process, this study proposed an analytical approach based on the framing perspective to analyze the strategic use of language in cross-border learning for promoting global water solutions.

Despite the growing interest to incorporate global water solutions in local planning contexts, this study highlighted three major challenges to translating global water solutions in the developing countries. The first challenge is related to the mobilization of funding to implement the developed solutions in practice. The case analysis showed that the Dutch government only supported funding for knowledge collaboration, the formulation of strategic recommendations, and the creation of a plan. The actual implementation of the solutions in local planning practice thus depends significantly on the capacities of the government in the recipient country to mobilize funding, in many cases, from international financial sources. This dependence on investment by international donors and financial institutions for project financing and implementation is also stressed by Korbee et al. (2019) and Hasan et al. (2019). Different from previous studies (Korbee et al., 2019; Seijger et al.,

Chapter 6 Conclusion and Reflection

2019; Vo et al., 2019), the second challenge, therefore, relates to the lack of shared understanding among local government agencies because they were not involved in the local interpretation of the international water policy ideas. This study also highlighted the loss in translation of the key concepts and metaphors of the global water policy solutions in embedding the solutions in local water planning practice. The third challenge is the limited roles and capacities of local governments to translate water policy ideas and solutions into actual project financing and implementation. In addition to existing literature, this study illustrated that many of the concepts, such as collaborative planning and local partnerships, require specific capacities of local governments and also the involvement of local communities. This is in line with the main finding highlighted in Section 6.2.3, which emphasized the roles of local governments and stakeholders. The sectoral planning tradition and associated top-down approach limit the capacities of local policy actors to translate resilience solutions into practice. Consequently, this study suggests the exploration of the required enabling environment and institutional conditions in the recipient countries for enhancing the role of local actors for the local adaptation of international water policy ideas.

6.3.4 Towards transformative change by international resilience programs

This study calls for the need to address the long-term flood risks and societal impacts from water and climate challenges. Achieving inclusive and long-term outcomes in flood resilience planning however requires institutional transformation. The use of systematic institutional analysis (Ostrom, 2011) for this study helped to provide a richer understanding of the required institutional conditions that could be promoted by international resilience programs to induce transformative and long-term policy change. To acquire transformative change in a local context, this study firstly suggests the consideration of the local-specific context and culture in the development and set-up of international resilience programs. Findings in this study pointed out that international resilience programs need to have an in-depth understanding of both institutional context and culture. This includes a better understanding of existing capacities of the local government and the political willingness of national and local leaders. This study also highlighted the opportunities for international programs to capitalize on existing local experience and knowledge and to strengthen and build on local resilience networks and initiatives (see also Ovink et al., 2021). This relates closely to the information rules which state that international resilience programs

should integrate local insights and perspectives and enable open communication and dialogue at the same time (Alexander et al., 2016; Driessen et al., 2018; Kuang & Liao, 2020). The consideration and in-depth understanding of the local institutional, planning and cultural context are important to tailor the process and approach of international resilience programs to local circumstances and specificities.

Moreover, this study illustrated the importance of the inclusive dimension in the institutional arrangements of the international resilience programs. This includes institutional conditions that enable open and broad participation of local actors in these programs. International resilience programs should therefore enable local NGOs with fewer resources and capacities to also become actively engaged in the process. Also, diverse professional backgrounds and disciplines need to be recognized in the co-creation of holistic and proactive flood resilience strategies (Liao, 2012; Nillesen et al., 2021; van den Brink et al., 2019). Open and broad participation is important for setting the aggregation rules that determine that the planning process requires a wide range of policy makers, experts, and other stakeholders to influence the design and determination of flood resilience outcomes and strategies (Lebel et al., 2006). As discussed earlier, social capacity-building (Khakee, 2010) is an important part of developing inclusive flood resilience. This inclusive dimension is therefore important for building trust among local stakeholders and creating a sense of shared ownership (Aldrich & Meyer, 2014). While there is much attention on renowned global examples and solutions, the promotion and integration of local knowledge and experience are often neglected (Driessen et al., 2016). The considerations on the inclusive dimension, including acknowledging local knowledge and culture, should be carefully addressed in the development and up-scaling of international resilience programs in different contexts.

Finally, this study highlighted the importance of long-term engagement with the local actors for building trust and social connections on the ground. The findings suggest that continuous engagement in knowledge transfer and capacity building is important for local institutional design. This process is important for creating a conducive and enabling environment to translate proactive and integrated solutions in the formal policy context (Pahl-Wostl et al., 2013). In this context, also the leadership of local resilience networks and coalitions was highlighted in this study. This dimension relates to the position rules, as the actors that are part of these networks and coalitions could connect the inclusive and long-term flood resilience solutions to the formal policy and planning system (Alexander et al., 2018; Gersonius et al., 2016). Based on the case analysis, the strength of international resilience

Chapter 6 Conclusion and Reflection

programs is the creation and empowerment of local resilience networks as local change agents in the local resilience policy environment, which is in line with previous studies (Friend et al., 2014; Handayani et al., 2019; Spaans & Waterhout, 2017). As stressed in the evolutionary resilience interpretation (Davoudi et al., 2012; Hegger et al., 2016), the empowerment and capacity building of these local resilience networks and leaders is crucial for long-term policy change and institutional transformation. It is, therefore, relevant for international resilience programs to have the local representation or local office based in the beneficiary city and country to support the transformative change in the local context. Consequently, strong partnerships and connections with local organizations should be promoted in the design and development of international resilience programs.

6.4 Contributions to flood resilience research and reflections on the research methods

6.4.1 Contributions to flood resilience research

Around the world, flood and climate resilience policies are promoted to improve urban flood risk management (Liao, 2012; Lu & Stead, 2013; Spaans & Waterhout, 2017). So far, in previous research, there is still limited focus on the power dimension and the political processes involved in flood resilience planning, especially in the context of developing countries. In addition, there is a lack of empirical studies that provide insights into this political dimension of urban flood resilience policy development and implementation. To address these research gaps, this study contributes to a better understanding of resilience policy development and implementation, by introducing a critical perspective for analyzing the urban flood resilience planning in the developing country context, such as Bangkok, Semarang and the Mekong delta. A critical perspective was, firstly, introduced to further theorize the political dimension of flood resilience planning by examining the negotiation of meaning between policy actors – both ‘insiders’ and ‘outsiders’. While previous research has mainly focused on the operationalization of resilience in flood risk management strategies, in terms of robustness, adaptability, and transformability (Brown et al., 2018; Hegger et al., 2016; Restemeyer et al., 2015; Zevenbergen et al., 2020), this study built on the evolutionary resilience interpretation to further provide an empirical analysis of the social justice and anticipated outcomes of the developed

resilience strategies, and highlighted the need for an inclusive process in urban flood resilience planning. This inclusive dimension is relevant in the making of resilience policy in developing countries where there is a large proportion of urban people living in poverty and a high number of informal settlement communities. Nevertheless, social justice and inclusive participation are also relevant themes in flood resilience planning in the developed countries, especially in the many cities with a large number of marginalized and low-income communities.

Moreover, there is an increasing amount of research on, and academic interest in, the role of global water experts and international resilience programs in cross-border learning and the mobilization of water policy ideas (Minkman & van Buuren, 2019; Weger, 2019; Zegwaard et al., 2019; Zevenbergen et al., 2018; Zevenbergen et al., 2012). At the same time, local policy makers are increasingly connected to global program platforms, facilities, and networks for promoting resilience policy development as a response to current water and climate challenges. Yet, there is still limited understanding of how proposed water policy solutions help to improve flood resilience planning especially in a developing country context. To contribute to this exploration, this study focused on the travel of water policy ideas from the developed to developing countries – from the Netherlands to Vietnam. The focus was especially on the creation and adaptation of meanings of global policy ideas, and how these can lead to the creation and implementation of local water solutions. The policy translation approach (Lendvai & Stubbs, 2009; Stone, 2017) was adopted to illuminate the complex, dynamic and political characteristics of cross-border policy travel.

As part of the critical perspective, this study used framing as the interpretative approach to delve into the meaning making of global water policy solutions for addressing local water challenges in beneficiary countries. In this way, this study responded to the call of various policy translation and policy mobility scholars to apply such an interpretative approach to better understand the communication of policy ideas and solutions across borders (Mukhtarov & Daniell, 2014; Stone, 2012, 2017). For flood resilience research, the use of framing, as part of a more critical perspective, is relevant as it helps to unpack the political and strategic process involved in the specific flood risk management strategies and resilience policy solutions in the planning process (Lendvai & Stubbs, 2009; Van Den Brink, 2009; Van Hulst & Yanow, 2016).

Lastly, to understand flood resilience planning in the context of developing countries, it is important to investigate the work of international resilience programs in improving the local flood resilience planning process (Brown et al., 2012; Friend

Chapter 6 Conclusion and Reflection

et al., 2014; Johnson & Blackburn, 2014). So far, little research has focused on understanding both the contributions and the limitations of these international resilience programs for transforming local water planning practice. Apart from investigating the role of language and meaning-making in flood resilience planning processes, the critical perspective developed in this study therefore also focused on the enabling institutional design for inclusive flood resilience planning induced and promoted by two international resilience programs in Southeast Asia, namely the MDP in Vietnam and the WaL program in Semarang, Indonesia. This was done by analyzing local institutional capacity building (Booher & Innes, 2002; Cars et al., 2017; Healey, 1998; Pahl-Wostl et al., 2013) and by examining the essential conditions for institutional transformation (Andersson, 2009; Ostrom, 2011; Ostrom et al., 2002). Insights from these two institutional approaches improved our understanding of the essential activities and process design of international resilience programs for strengthening local flood resilience planning. Such insights are important for a critical reflection on the ongoing global resilience movement and development and the organization of international resilience programs. Based on this analysis, the recommendation to improve the design and organization of international resilience programs could be formulated in this study.

6.4.2 Reflection on the research methods

In the context of this study, it is important to address the following three methodological reflections. The first is that this study is based on three different cases: the Water as Leverage program in Semarang, Indonesia, the Mekong Delta Plan in Vietnam, and the Bangkok Resilience Strategy, Thailand. The benefit of using diverse and multiple cases is that it enriched the findings of this study. However, the analysis of the cases is based on different flood resilience planning approaches in Southeast Asia. Each case is focused on a different urbanized delta region and on the engagement in a different international resilience program. Hence, limited connection could be observed between these three cases. This could be perceived as a challenge to draw shared lessons on inclusive flood resilience planning for the region. An attempt in this study was made to compare the institutional arrangement of the two international resilience programs that were initiated by the Netherlands, the MDP and the WaL program. For a more in-depth understanding of the particular approaches of these international resilience programs, it would be relevant to further analyze how one specific program unfolded in different cities. An example is to

analyze the institutional capacity building promoted by the WaL program in the other two Asian pilot cities, namely Khulna and Chennai. It would also be interesting to study the development of a resilience by design approach in two different planning and cultural contexts, for instance, to compare the WaL program in Semarang (developing country context) and the Rebuild by Design program in New York (developed country context). On the other hand, to analyze and monitor local flood resilience planning, it could also be useful to compare two different programs in one particular city, for example, to compare the development and engagement of local resilience policy actors in the 100RC Programme with the WaL program in the city of Semarang.

A second methodological reflection relates to the qualitative approach that was adopted to analyze the perspectives, insights, and perceptions of the interviewees and participants in this study. A limitation of this approach was that the interviews and discussions were conducted mainly in English. The interviews also tended to focus on the interviewees who could communicate in English, which could have resulted in other potential interviewees being overlooked. As language and the analysis of meaning-making are central in this study (especially when a framing perspective was adopted), conducting the interviews mainly in English could have limited the abilities of interviewees, who are mostly non-native English speakers, to express their feelings, opinions, and ideas. It is therefore important for qualitative researchers to inclusively involve interviewees from diverse professional and cultural backgrounds. To address this limitation, in Semarang the researcher worked together with a group of local scholars and a research assistance team, with the support of the local university, to identify, moderate, and translate some of the interviews that were conducted in Bahasa Indonesia. This study received the invaluable support of a research assistance team, which consisted of BSc students in Urban and Regional Planning at the Diponegoro University in Semarang, Indonesia, during the fieldwork there. This provided opportunities for this study to interact and gain insights from a broader group of interviewees, especially the local villagers.

The last methodological reflection concerns the data collection for some parts of this research, which was supported by the collaboration between the Faculty of Spatial Sciences, University of Groningen and the Special Envoy for International Water Affairs for the Kingdom of the Netherlands, who is also an Honorary Lecturer at the Department of Spatial Planning and Environment of the Faculty of Spatial Sciences. As the initiator of the WaL program in Semarang, the Water Envoy was mainly involved in the Semarang case study. This provided not only background information and documents but also access to the data collection and support by

Chapter 6 Conclusion and Reflection

gaining valuable insights into the setup and operation of the program. However, this arrangement also had some limitations. In the data collection process, some interviewees felt hesitant to express their views and criticism as they acknowledged the relationship between the research and the Water Envoy. To address this issue, the researcher explained at the beginning of all the interviews the clear relationship between the researcher, the supervisors, and collaborators and how this should not impact the academic freedom and independence of this study, particularly during the data analysis and interpretation. In the data analysis, the design of the research considered and allowed the examining of all negative comments and criticisms towards the program. This issue was therefore discussed during the preparation for the fieldwork to ensure that the analysis of this study would welcome both positive and negative comments in order to critically reflect on the organization of the WaL program. To gain external input to strengthen data interpretation and validation, the researcher was given the opportunity to present the preliminary findings from the fieldwork to local scholars and researchers. This opportunity proved to be helpful to better understand the local context and culture and to confirm the key findings from the interviews and discussions.

6.5 Suggestions for future research

There are three avenues of future research that are valuable for exploring. The first avenue is to conduct research into the longitudinal perspective of resilience policy development, that is from planning and design to the actual implementation process. As this study focused on the early planning and design phases in the planning for inclusive flood resilience, there is still a need to monitor the implementation of the developed resilience policies and the creation of new capacities and networks for supporting the planning process. Such a longitudinal study could be applied in future urban flood resilience research and could be used to strengthen our understanding of the aspired inclusive and transformative outcomes of resilience policies, particularly for enabling and inducing long-term institutional change. Insights from this longitudinal study could also shed light on spillover outcomes for flood resilience planning such as the creation of new networks, the formulation of a new research agenda, and the establishment of new knowledge and expert facilities. Moreover, a longitudinal analysis could improve our understanding of different conditions and

possibilities required to create an enabling environment for influencing the local enabling institutional design for inclusive flood resilience planning.

The second avenue for future research is to investigate inclusive flood resilience planning and engagement in international resilience programs in other cities and countries. This study focused on flood resilience planning in the three urbanized delta regions of three countries in Southeast Asia. In these three regions, international resilience programs contributed to the development and implementation of flood resilience policies and water management solutions. To address the methodological limitation for drawing comparative insights in this study, it could be interesting to further investigate more flood resilience planning cases where cross-border learning of policy ideas and translation of global water solutions are involved. For this matter, it could be relevant to investigate the translation of the Dutch delta management approach in other regions of developing countries including in the Middle East and Africa. Moreover, the introduction of resilience by design gained global attention as the innovative planning approach to overcome institutional challenges to designing, planning, financing, and implementing integrated and inclusive flood resilience initiatives. It could therefore be worth exploring the adoption of this type of design-led planning process in other countries in Asia, such as the World Bank-led Water as Leverage program in Vietnam, in Africa, including the Africa Urban Water Resilience Initiative, and in Latin America, which could be the program Towards a Water Sensitive Mexico City. Analyzing a greater number of cases could provide researchers with the opportunities to conduct a systematic comparative case analysis. For this systematic case analysis, next to a qualitative approach also a quantitative approach could be used to identify key variables and indicators for supporting the local and national policy actors in flood resilience planning process.

The final avenue for future research is to use the critical perspective to the analysis of other urban and environmental-related policies. This study highlighted the necessity of incorporating a critical perspective into flood resilience research to unpack the power and political dimensions, to reveal meaning making processes, and to examine enabling institutional conditions and capacity-building for urban flood risk management. The use of the critical perspective should not be limited though to flood resilience research. Further development and refinement of the critical perspective as an analytical approach for exploring the social justice and inclusive dimensions in broader urban and environmental management and water policy models and solutions is needed. For urban policies, it could be relevant to investigate the interpretation and adoption of the concepts or visions such as 'urban

Chapter 6 Conclusion and Reflection

sustainability', 'smart cities' and 'just cities'. It would also be interesting to critically examine the interpretation and negotiation of emerging international water policy frameworks including the OECD Water Governance and the Valuing Water Principles developed by the UN and the World Bank. Such analysis could also reflect the broader state of global policy learning and international development and cooperation for addressing urban and water-related challenges. Finally, in this study, the critical perspective was developed to examine the resilience policy development in the context of developing countries. It would also be relevant to investigate the issues of injustice and inequality from urban management and water management policies as well as in the context of the developed countries.

6.6 Lessons for planning practice

Although the findings of this study are specifically related to the three cases, they could provide relevant lessons for broader policy implications in the context of both developed and developing countries. In addition, the findings also provide lessons for international resilience programs for enabling institutional design for inclusive flood resilience.

6.6.1 Policy implications at the city level

The first lesson at the city level is based on the social justice and inclusive dimensions in flood resilience policy formulation and implementation. Existing research has pointed out that current resilience policy implementation in practice is often based on pursuing greater investment in structural flood protection strategies. This approach has not only neglected the socioecological impacts among disadvantaged communities by prioritizing powerful elites, which Davoudi (2018) has referred to as the 'resilience enclave', but this approach has also created uneven vulnerabilities to floods and climate risks. The interpretation of resilience in the strategy formulation, the planning process, and the anticipated outcomes of urban resilience policy should not neglect the populations at risk. In search of alternative solutions, the flood resilience policy makers should recognize broader social, ecological, and spatial considerations in urban flood risk management and not just focus on structural flood protection. To ensure inclusive outcomes of urban flood resilience policies, attention

should be paid to the quality of the public process: the objective of participation, the opening and sharing of information, when and how the process is undertaken, and access and representation of vulnerable groups. Findings in this study indicated that outsiders, especially flood vulnerable communities, call for concrete strategies to address interrelated social problems arising from floods and climate risks. Therefore, this study stressed the need for allowing and supporting the local government agencies, the district offices, to identify local vulnerabilities, hotspots, and the facilitation of inclusive community engagement (see also Nilubon, 2021). Besides the inclusive process, resilience policies to address the informal settlement communities require adopting a new perspective to reframe this challenge in a broader urban management agenda with consideration of social justice and long-term urban sustainability. According to the New Urban Agenda (United Nations, 2017), UN-Habitat proposed that the strategies to address the informal settlement communities should go beyond physical and environmental improvement. Nevertheless, the application of the international principles and recommendations to address the urban management challenge needs to consider the local context and culture. This study therefore proposed that a context-specific approach should be adopted at the city level to identify different policy options to address social justice and spatial inequality. As explained in Section 6.3.1, it is a necessity for the city government, based on the social inclusive frame, to consider short-term solutions, economic and social security of the dwellers, and long-term strategies for ensuring adequate and equitable access to social housing and quality of urban public space and infrastructure.

The second lesson relates to opportunities to explore new ways of thinking and experimenting with innovative solutions. Integrating diverse insights into urban flood risk management policies and raising awareness of increasing flood risks are important for materializing new solutions and breaking away from the business-as-usual approach. This is essential in stimulating not only learning capacities for improving current strategies but also to enable critical reflection on and the adjustment of existing policy goals and planning processes. Such double-loop learning (Pahl-Wostl et al., 2013) is crucial for destabilizing existing structural settings, which should then allow the creation of new visions and the stimulation of long-term policy change. This study suggests designing new types of learning opportunities. This could include a strong partnership between the city government and local universities to mobilize resources and ideas to enable the co-creation of new solutions. Drawing from the example of the ‘resilience by design’ planning process discussed in Section 6.3.2, it could be an opportunity to create a temporary enabling

Chapter 6 Conclusion and Reflection

environment – a ‘soft space’ for a bottom-up and creative process aimed at formulating and presenting new solutions. This study also argued that it would be relevant to embed this soft space and learning environment in the formal administrative context. City governments should therefore be able to organize this type of space for drawing insights and experiences from their city and beyond. It could be beneficial for cities to introduce an ‘urban adaptation lab’, based on the inspiration of the ‘urban living lab’ (Nesti, 2018) and dynamic co-creation processes (Rădulescu et al., 2020), to engage citizens in the experimentation of flood adaptation solutions. Another idea for creating an innovative and collaborative space is the ‘climate cafe’, which was proposed by Boogaard et al. (2020) for engaging local stakeholders in answering local climate-related questions through a learning-by-doing approach. This method could also bring an opportunity for young researchers and students to connect with experts and practitioners in generating concrete solutions. These types of processes and methods are important to demonstrate the potential of small-scale and inclusive flood adaptation initiatives (Dai et al., 2018a) and to receive feedback from citizens and wider stakeholders, thereby enhancing the local institutional capacities. Beyond the creation of new knowledge and testing new ideas, it is essential to consider the local reception and understanding of new policy ideas in frontline practices, especially the indigenization of concepts and ideas into concrete projects and actual planning practices.

Based on the evolutionary resilience interpretation, approaching inclusive flood resilience planning should not only rely on ad-hoc and short-term activities or projects. The third and last lesson at the city level therefore involves continuous efforts for sustaining flood resilience and long-term engagement with stakeholders. Climate change adaptation and urban flood risk management are complex policy issues that require constant adjustment in policy and planning in response to current problems and future changes. At the international level, cities should capitalize on this opportunity by taking on resilience policy development initiatives, by maintaining good relations with international partners and by engaging in various global policy platforms and collaborations. At the local level, continuously engaging local stakeholders in flood resilience planning contributes to building trust and willingness. This means that local actors including communities, NGOs, and academic institutions need to be constantly engaged in flood resilience planning, design and implementation. As discussed in Section 6.2.4, this open and inclusive engagement is essential for local ownership of the flood resilience solutions and planning processes. To ensure long-term engagement, the flood resilience policy makers need to also take into account the political disturbances and changes in local

leadership. In many cities such as New York and Semarang, the cities' resilience teams and offices are the major front-runners in introducing the resilience concept into practice. It would therefore be invaluable for other cities to formalize the establishment of their resilience teams and local resilience offices in city government and local planning institutions. Moreover, the academics and experts from universities are often experienced and flexible to continuously engage in and contribute to the implementation of different resilience programs and initiatives. Universities, for instance, could also support the resilience planning and policy initiation. Over time, the transformation for inclusive flood resilience planning requires long-term engagement and social awareness at the public level to transform existing practices and adopt new solutions.

6.6.2 Policy implications at the national level

The first lesson for the national level relates to the need for empowering local policy actors and stakeholders and for enhancing their required capacities in initiating and implementing integrated and inclusive flood resilience solutions. This study highlights the development of local institutional capacities for the development and implementation of flood adaptation solutions. While the bottom-up and self-governance processes at the local level are recognized, local actors, such as the city government, need support from the national government to strengthen their institutional capacities in inclusive flood resilience planning. To enable institutional design for local flood resilience planning, the national government should support open and inclusive processes by integrating local voices, needs, and interests, rather than imposing technical and top-down policy enforcement and measures. The national government should assume a coordinating role and support the knowledge and technical capacities, by, for instance, providing spatial data and water information for developing local flood risk maps. Importantly, the planning and implementation of flood resilience strategies require specific budget allocation from the national government, to determine the payoff rules for flood adaptation measures. This study therefore highlights the need for the national government to enhance local institutional capacity, which includes strengthening intellectual, social, and political capitals for long-term flood resilience planning at the local level.

Relating to the first lesson, a second lesson is creating and integrating flood and climate resilience policy frameworks at all levels of governmental institutions from the national to the regional, provincial and city levels. The findings in this study

Chapter 6 Conclusion and Reflection

suggested that greater coordination between governmental agencies is needed in flood resilience planning. A clear policy direction from the national level is therefore required to introduce flood resilience solutions in planning practice. The formulation of a policy framework by the national government is essential for the formulation and alignment of various flood resilience initiatives and solutions that address the complex and interconnected urban flood risks. The formulation of this national policy framework should be based on the consideration of changing climatic and socio-ecological conditions, and have the ambition to reflect and reframe existing policy goals and strategies. This requires the shifting of policy directions from investment mainly in persistence strategies and hard infrastructure to incorporating diverse strategies for flood adaptation. More specifically, the national policy framework should incorporate nature-based solutions and blue-infrastructure (water-sensitive urban design) as flexible and proactive strategies in dealing with increasing flood risks, especially in the urban areas. Importantly, this national policy framework should be translated into regional, provincial, and local policy guidelines and regulations based on the geographical contexts for practical planning and implementation.

6.6.3 Policy recommendations for international resilience programs

Firstly, this study recommends that an in-depth understanding of the political context, local culture, and institutional conditions needs to be obtained at the start of international resilience programs. The challenge of introducing inclusive flood resilience planning in the local context primarily concerns the governance limitations and political complexities on the ground. In an extreme case, the proposed solutions could be incompatible with the local institutional conditions. This also relates to the problem of using international guidelines, toolboxes, and frameworks, which may disregard the local socioeconomic context and institutional conditions. It is therefore important to have an in-depth understanding beforehand of the context-specific environment and conditions to tailor the program accordingly. Sensitivity to the local culture is also important to build trust and improve the communication and engagement process. It is therefore advised that international resilience programs conduct a pre-program analysis of the local institutional context and culture. Based on the main findings explained in Section 6.2.3, international resilience programs could engage local academic and knowledge partners in identifying institutional strengths and weaknesses of the local context. It is also important to draw lessons and

experiences from the city's resilience networks, policy makers, NGOs, and local communities. It is thus significant for international resilience programs, aid agencies, and philanthropists to invest in a pre-program institutional analysis and already involve the local experts and local policy makers in this process.

Secondly, building long-term social relations and inclusive engagement should be emphasized in approaching the local stakeholders. The challenge of international policy actors from international development programs and donor agencies could be related to the limited time spent in engaging and building social relations with local counterparts. The inclusive and transformative outcomes of international resilience programs require building trust and willingness among local partners – in line with the evolutionary resilience interpretation. This study shows that the building of social relations can not be done in a short period with intense working tasks. Building relational networks and local coalitions for flood resilience is a long-term process. Although time is seldom available, this capacity-building process is essential for the acceptance of new solutions and for the motivation to take on the flood resilience initiatives. In relation to the previous discussion in Section 6.3.4, this study argued that international funders, aid and donor agencies need to invest in this social and relational building and inclusive engagement process. This process should also be open for local organizations with fewer resources and capacities to engage in the programs. While the participation of the international experts and designers is valuable for drawing innovative ideas and the creation of new solutions, the role of local-based organizations is needed for the continuity of the flood resilience ambitions.

Thirdly, strategic engagement with local and national decision makers is important for translating international solutions into local planning practice. Greater attention should be paid to the multi-level governance complexity of urban flood risk management in which the flood resilience planning strategies should be aligned. Mobilizing political support from the national level decision makers is needed for policy alignment and the advancement of the flood resilience ambitions. Specifically addressed in Sections 6.2.3 and 6.2.4, the missing link with these key decision makers in the early process of an international resilience program could limit the opportunities for project financing and implementation. This is often difficult to resolve, especially when an international resilience program has already been put in motion. International resilience programs need to consider political buy-in from and effective communication with the national government. It is therefore important that such programs build on existing national and local resilience plans and initiatives. The start of a new program with little connection to existing initiatives could also

Chapter 6 Conclusion and Reflection

create extra bureaucratic burdens for the local policy officials since they have to start coordinating another new program on top of other existing programs and responsibilities. To maximize opportunities for policy alignment, this study proposes to integrate flood resilience programs in a broader urban management policy context and national and global sustainable development agendas.

Fourthly and lastly, the social justice and inclusive dimensions in flood resilience should be the basis for the development of global resilience policy frameworks and agendas. Although there are some drawbacks to interpreting and operationalizing resilience in policy guidelines, frameworks, and policy toolboxes, these policy tools are still important for the initiation of resilience policy. They could set common goals and shared understanding of the development of resilience policies. It is vital to embed notions such as inclusive flood resilience, just resilience, and equitable resilience in international resilience frameworks. Nevertheless, the translation of the inclusive dimension in resilience frameworks should concern local institutional conditions and culture. Besides referring to this aspect in the policy guidelines and frameworks, international financial institutions and philanthropists (such as the Rockefeller Foundation) should highlight the social justice and inclusive dimension as the key conditions for investment in and funding of international resilience programs. This will improve the process design and the development of the international resilience program, as it then will promote an open and inclusive process in international development assistance and cooperation.

6.7 Epilogue: inclusive flood resilience planning and cities of hope

The 2011 Thailand Floods were the second large-scale natural disaster event I witnessed in Thailand – besides the Indian Ocean Tsunami in 2004. This flooding event sent a clear wake-up call to the government and society about the threats of increasing climate risks and changing socio-ecological conditions. Studies confirm that it is likely that a similar magnitude of nationwide flooding could be anticipated in the near future. This study illustrated several hopes for new possibilities in water and environmental policy and planning. The first hope comes from the opportunity to draw lessons from a country that is situated below sea level and that is simultaneously capable of ensuring national water safety and quality of the governance strategies, public investment, and technological innovation. Another hope in this research is from acknowledging the investment and collaboration

between actors across borders and disciplines in the global resilience movement. This has led to the promotion of local resilience policy development and the improvement of urban flood resilience planning in developing countries.

However, this study showed that only having hopes is not enough. The global solutions (policy models) need to be translated and embedded in local planning practice. Local actors need to be engaged and informed. The design of collaboration and the learning process is required. For this study, having hope for flood resilient cities does not mean that we should await a new natural disaster before taking action or the next international resilience program to come. Immediate interventions can be taken to stimulate long-term change. While many cities in developed countries have introduced holistic and integrated flood resilience strategies, this study suggests that cities in developing countries – such as in Southeast Asia – should experiment with these new types of strategies that enhance urban flood adaptation and should scale up these strategies in a broader urban management agenda. City governments should begin exploring new types of partnerships and coalitions, for example, with academics, private sectors, civil society organizations, and communities. In this study, the suggestions have been made for cities to create temporary soft and safe spaces for designing and introducing new solutions and establishing local resilience networks and coalitions. Cities should formally embed these soft spaces by transforming these temporary learning and collaborative environments into permanent knowledge and capacity building facilities.

To realize a new hope, new research agendas should also be explored. This study invites future researchers to explore different possibilities of using flood resilience planning as a vehicle to stimulate planning for inclusive and just cities in the Global South and Global North – exploring new hopes amidst urban and environmental changes.

Chapter 6 Conclusion and Reflection

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Chapter 6 Conclusion and Reflection

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Appendices

Appendix A: List of key policy documents analyzed

Appendix B: List of interviewees

Appendix C: Expert focus group discussions

Appendix D: Observations

Appendix E: Code networks for data analysis

Appendix F: Topics of interviews and discussions

Appendix A: List of key policy documents analyzed

Chapter 2

Documents 1-4 were used for analysing the Bangkok Resilience Strategy case

No.	Name	Produced by	Year
1	Bangkok Resilience Strategy	Bangkok Metropolitan Administration and the Rockefeller Foundation under 100 Resilient Cities	2017
2	Annual Bangkok Water Management Report 2016	Department of Drainage and Sewerage, Bangkok Metropolitan Administration	2016
3	National Strategic Water Management Plan	National Water Resource Committee	2015
4	National Disaster Prevention and Mitigation Plan	Department of Disaster Prevention and Mitigation, Ministry of Interior	2015

Chapter 3

Documents 1-13 were used for analyzing the Mekong Delta Plan case

No.	Name	Produced by	Year
1	Strategic Watercards: International Opportunities for the Dutch Water Sector	Government of the Netherlands	2002
2	The Delta Approach: Introducing 12 building blocks	Netherlands Water Partnership	2014
3	Dutch Surge Support (DSS Water): a rapid response to water-related disasters	Government of the Netherlands	2015

Appendices

No.	Name	Produced by	Year
4	Dutch Risk Reduction Team: reducing the risk of water-related disasters	Government of the Netherlands	2011
5	Dutch Water Sector 2014-2015: Smart Water Solution for Urban Delta	Government of the Netherlands	2014
6	Water innovation in the Netherlands: A brief overview	Ministry of Infrastructure and Water Management, Rijkswaterstaat, Regional Water Authorities, Government of the Netherlands	2014
7	The Delta Program	Delta Commission	2008
8	A World to Gain, A New Agenda for Aid, Trade and Investment	Government of the Netherlands	2013
9	Converging Streams – An International Water Ambition, Dutch Framework Cooperation	Ministry of Infrastructure and Environment, Ministry of Foreign Affairs and Ministry of Economic Affairs, Government of the Netherlands	2013
10	The Mekong Delta Plan	Government of the Netherlands and Government of Vietnam	2013
11	Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project	Ministry of Agriculture and Rural Development, Government of Vietnam	2016
12	Project Appraisal Document for Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project	The World Bank	2016
13	Resolution 120 on Sustainable and Climate-Resilient Development of the Mekong Delta Vietnam	Government of Vietnam	2017

Chapter 4

Documents 1-16 were used for analyzing the WaL program Semarang case

No.	Name	Produced by	Year
1	Factsheet Water as Leverage	Government of the Netherlands	2019
2	Water as Leverage for Transformative Impact	Dutch Special Envoy for International Water Affairs, International Architecture Biennale Rotterdam and Architecture Workshop Brussels	2017
3	Setting The Scene for A Call for Action	Dutch Special Envoy for International Affairs, Netherlands Enterprise Agency, Architecture Workroom Brussels	2018
4	Water as Leverage Semarang – One page two teams	Water as Leverage Resilient Cities Asia	2019
5	One Resilient Semarang Volume I Research, Analysis and Engagement	One Architecture and Urbanism and Water as Leverage Resilient Cities Asia	2018
6	Cascading Semarang Steps to Inclusive Growth Phase One Report	Cascading Semarang and Water as Leverage Resilient Cities Asia	2018
7	Water as Leverage Process	Water as Leverage Resilient Cities Asia	2018
8	Guidelines Water as Leverage	The Netherlands Enterprise Agency	2018
9	Water as Leverage: Catalyst for Water Resilient Semarang	Dutch Special Envoy for International Affairs	2019
10	Five Strategic Programs from Upland to Coast-towards a Resilient Semarang	One Semarang and Cascading Semarang	2019
11	Comprehensive Measures for Sustainable Water Management	City Advisory Council for Development of Semarang	2019

Appendices

No.	Name	Produced by	Year
12	Roadmap: Next step for Water as Leverage leading up to Singapore	Dutch Special Envoy for International Affairs	2019
13	A Table outline the MOU Water Indonesia – the Netherlands	Delegated Representative Water Indonesia-Netherlands	2019
14	Resilient Strategy Semarang: Moving Together towards a Resilient Semarang	Semarang City Government	2019
15	Semarang 6 Years Mid-Term Plan 2016-2021	Semarang City Government	2016
16	Rebuilding with Resilience Lessons from the Rebuild by Design Competition After Hurricane Sandy	Semarang City Government	2016

Chapter 5

Documents 1-6 were used for analysing the Mekong Delta Plan case

Documents 7-12 were used for analysing the WaL program Semarang case

No.	Name	Produced by	Year
1	The Mekong Delta Plan	Government of the Netherlands and Government of Vietnam	2013
2	Converging Streams – An International Water Ambition, Dutch Framework Cooperation	Ministry of Infrastructure and Environment, Ministry of Foreign Affairs and Ministry of Economic Affairs, Government of the Netherlands	2013
3	The Delta Program	Delta Commission	2008
4	Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project	Ministry of Agriculture and Rural Development, Government of Vietnam	2016
5	Project Appraisal Document for Mekong Delta Integrated Climate Resilience and Sustainable Livelihood Project	The World Bank	2016
6	Resolution 120 on Sustainable and Climate-Resilient Development of the Mekong Delta Vietnam	Government of Vietnam	2017
7	Factsheet Water as Leverage	Government of the Netherlands	2019
8	Water as Leverage for Transformative Impact	Dutch Special Envoy for International Water Affairs, International Architecture Biennale Rotterdam and Architecture Workshop Brussels	2017
9	Setting The Scene for A Call for Action	Dutch Special Envoy for International Affairs, Netherlands Enterprise Agency, Architecture Workroom Brussels	2018

Appendices

No.	Name	Produced by	Year
10	Water as Leverage Semarang – One page two teams	Water as Leverage Resilient Cities Asia	2019
11	Guidelines Water as Leverage	The Netherlands Enterprise Agency	2018
12	A Table outline the MOU Water Indonesia – the Netherlands	Delegated Representative Water Indonesia-Netherlands	2019

Appendix B: List of interviewees

Chapter 2 is based on the interviewees 1-34.

Chapter 3 is based on the interviewees 35-57.

Chapter 4 is based on the interviewees 58-80.

Chapter 5 is based on the interviewees 48-58, 74-85.

No.	Position	Organization	Location	Date
1	Director of Water Quality Crisis Prevention Division and Mekhala Center	Department of Water Resource, Ministry of Natural Resource	Bangkok, Thailand	16-02-2017
2	Head of Water Watch and Monitoring System for Warning Center, Office of Management and Hydrology	Royal Irrigation Department, Ministry of Agriculture and Cooperatives		17-02-2017
3	Engineer Specialist			
4	Director of Water Resource Planning Division, Agriculture, Natural Resource and Environment Planning Office	Office of the National Economic and Social Development Board		24-02-2017
5	Plan and Policy Analyst Special Professional Level, Agriculture, Natural Resource and Environment Planning Office			
6	Director of Research and International Cooperation Bureau	Department of Disaster Prevention and Mitigation, Ministry of Interior		24-02-2017
7	Scientist Professional Senior Level			

Appendices

No.	Position	Organization	Location	Date
8	Director of Earthquake and Disaster Watch and Studies	Department of Public Works and Town and Country Planning, Ministry of Interior		07-03-2017
9	Department Head of Bangkok Flood Control Center	Department of Drainage and Sewerage, Bangkok Metropolitan Administration		14-02-2017
10	Professional Level Officer in Plan and Policy	Department of Fire and Rescue, Bangkok Metropolitan Administration		22-02-2017
11	Director of Human Resource and Social Strategy Division	Department of Strategy and Evaluation, Bangkok Metropolitan Administration		23-02-2017
12	City Planner, Senior Professional Level	Department of City Planning, Bangkok Metropolitan Administration		23-02-2017
13	Head of Vehicle Emission Control Sub-division Air Quality and Noise Management Division (Bangkok resilience strategy coordinator team)	Department of Environment, Bangkok Metropolitan Administration		15-03-2017
14	Environmentalism, Professional Level (Bangkok resilience strategy coordinator team)			

No.	Position	Organization	Location	Date
15	Department Head, Resilient Cities and Urban Risk Management	Asian Disaster Preparedness Center		08-02- 2017
16	Project Manager, Resilient Cities and Urban Risk Management			
17	Project Manager, Disaster Risk Management Systems			
18	Technical Consultant to UNDP Thailand	United Nations Development Program		27-02- 20 17
19	National Specialist - Institutional and Context Analysis, UNDP Thailand			28-02- 2017
20	Assistance Professor in Urban Planning and Development	Faculty of Architecture and Planning, Thammasat University		17-02- 2017
21	Executive Board of Water Institute for Sustainability	Water Institute for Sustainability, the Federation of Thai Industries		20-02- 2017
22	Distinguished Fellow, Head of Water Management Research	Thailand Development Research Institute		21-02- 2017
23	The community leader in Promsumrit	Promsumrit Community, Don-Meung District, Bangkok		18-09- 2017
24	Directory General of Seub Nakhasathien Foundation	Seub Nakhasathien Foundation (forest and natural conservation)		18-09- 2017

Appendices

No.	Position	Organization	Location	Date
25	The community leader in Khukhotpatana	Khukhotpatana Community, Khukhot District, Pathumthani Province	Pathumthani, Thailand	19-09-2017
26	Director of the Thai Water Partnership Foundation	Thai Water Partnership Foundation	Bangkok, Thailand	20-09-2017
27	Thai PBS News Editor for disaster and weather reporting	Thai PBS News channel		22-09-2017
28	Political and community activist	Stop Global Warming Association in Thailand		26-06-2017
29	The community member in Panthom	Panthom Community, Phra Nakhon District, Bangkok		26-09-2017
30	Mayor of Wat Lamut Sub-District Administration	Wat Lamut Sub-district Administration, Nakhon Chai Si District, Nakhon Pathom Province	Nakhon Pathom, Thailand	28-09-2017
31	The community leader in Wat Pho Rieng	Wat Pho Rieng Community, Bangkok Noi District, Bangkok	Bangkok, Thailand	02-10-2017
32	Member of Civil Society Network for Persons with Disabilities	Civil Society Network for Persons with Disabilities		02-10-2017
33	Director of Vocational Center for Persons with Disabilities	Vocational Center for Persons with Disabilities in Pathum Thani Province		04-10-2017
34	Mayor of Pak Kret Municipality	Pak Kret Municipality, Pak Kret District, Nonthaburi Province	Nonthaburi, Thailand	05-10-2017
35	Senior Advisor Water Way	Rijkswaterstaat, Ministry of Infrastructure and Water Management	Groningen, the Netherlands	09-03-2016

No.	Position	Organization	Location	Date
36	Senior Policy Advisor at the Director General for Spatial Development	Water of Ministry of Infrastructure and Water Management	The Hague, the Netherlands	05-04-2016
37	Program Manager	Interdepartmental Water Cluster – International Water, Government of the Netherlands		13-05-2016; 18-05-2016
38	Program Manager NWB Fund / International Policy	Dutch Water Authority		17-05-2016
39	Contact Person Partner voor Water	Netherlands Water Partnership		17-05-2016
40	Expert consultant Flood Risk Management and Asset management	Deltares	Delft, the Netherlands	12-05-2016
41	Senior Advisor Policy Analysis and Water Governance	Delft-IHE		11-05-2016
42	Engineer and Construction Specialist	Vietnam Environment, Engineering and Construction JSC	Hanoi, Vietnam	27-04-2018
43	Former country Director of the VNICZM	Royal HaskoningDHV Vietnam	The Hague, the Netherlands	18-04-2018
44	Director water resources	Can Tho University	Can Tho, Vietnam	10-05-2018
45	Former Director and Senior Lecturer	Dragon Institute, Can Tho University		10-05-2018
46	Consultant agricultural Value chain development	Agriterra	Hanoi, Vietnam	25-04-2018
48	Senior Project Manager Rivers and Coast	Royal HaskoningDHV	Amersfoort, Netherlands	12-04-2018

Appendices

No.	Position	Organization	Location	Date
49	Strategic Advisor at the Dutch Ministry of Infrastructure and Water Management (Former First Secretary Water and Climate, Dutch Embassy in Vietnam)	Ministry of Infrastructure and Water Management	The Hague, the Netherlands	18-04-2018
50	Delta Coordinator for International Water Policy unit	Ministry of Infrastructure and Water Management		18-04-2018
51	Professor of Coastal Engineering	TU Delft	Delft, the Netherlands	18-04-2018
52	Post-doctoral researcher	Water System and Global Change, Wageningen University and Research	Amsterdam, the Netherlands	18-04-2018
53	Water Secretary	Dutch Embassy Hanoi	Hanoi, Vietnam	26-04-2018
54	Climate Change expert and Director	Climatesense.eu	Hanoi, Vietnam	26-04-2018
55	Independent Urban Delta Researcher and Journalist	(Independent)	Delft, the Netherlands	12-04-2018
56	Manager Water Resources Department	Royal HaskoningDHV Vietnam	Ho Chi Minh City, Vietnam	07-05-2018
57	Deputy Director of Environmental and Natural Resources	Research Institute for Climate Change, Can Tho University	Can Tho, Vietnam	10-05-2018
58	Urban Planner and member of One Resilient team	Kota Kita – Our City Foundation	Semarang, Indonesia	05-04-2019
59	Urban Strategic Planner and member of	IDN Livable Cities		22-03-2019

No.	Position	Organization	Location	Date
60	Cascading Semarang team Urban Consultant and member of Cascading Semarang team			23-03-2019
61	Process Manager and member of cascading Semarang team	Witteveen Bos	Deventer, Netherlands	04-03-2019
62	Climate and Resilience Advisor and knowledge partner for Water as Leverage	IFRC Indonesia	Jakarta, Indonesia	11-03-2019
63	Governance Specialist and knowledge partner for Water as Leverage	Mercy Corps Indonesia	Semarang, Indonesia	19-03-2019
64	Independent Consultant and knowledge partner for Water as Leverage			19-03-2019
65	Green Policy Manager and knowledge partner for Water as Leverage	WWF – Indonesia		21-03-2019
66	Lead Water Program for Greater Mekong region	WWF Greater Mekong	Hanoi, Vietnam	21-09-2019
67	Program and Alliance Lead	Care International Indonesia	Jakarta, Indonesia	05-04-2019
68	Project Consultant	Future Cities Laboratory Singapore	Semarang, Indonesia	21-03-2019
69	Former Environmental Board and City Resilience Team of Semarang	Government of Semarang		26-03-2019
70	Public Relation Manager at City Council Secretariat of Semarang	Government of Semarang		20-03-2019

Appendices

No.	Position	Organization	Location	Date
71	Program Manager	Initiative for Urban Climate Change and Environment (IUCCE)		27-03-2019
72	Independent Journalist	Society of Indonesian Environmental Journalists		19-03-2019
73	Lecturer in Regional Development and Planning	Diponegoro University		27-03-2019
74	Dutch government representative for Water Cooperation Netherlands-Indonesia	Government of the Netherlands		04-04-2019
75	Resource Mobilization Director	Indonesia Science Fund	Semarang, Indonesia	27-03-2019
76	Senior Project Manager and member of the Cascading team	Deltares	Jakarta, Indonesia	05-04-2019
77	Technical advisor for Chief Resilience Officer Semarang and Lecturer	Diponegoro University	Semarang, Indonesia	27-03-2019; 11-06-2019
78	Program Director and member of One Resilient team	Kota Kita - Our City Foundation	Jakarta, Indonesia	05-04-2019; 09-06-2020
79	Chief Resilience Officer and Head of Infrastructure and Environment Research and Development	Semarang Resilience Office and Development Planning Agency of Semarang	Semarang, Indonesia	30-03-2019
80	Program Manager	The Indonesia Association for Sustainable Development – Bintari Foundation		02-04-2019

No.	Position	Organization	Location	Date
81	UN-Habitat Urban Design Lead	UN-Habitat		12-06-2020
82	Landscape Architect and consortium design lead of Cascading Semarang Team	MLA+	Rotterdam, the Netherlands	10-06-2020
83	Landscape Architect and consortium design lead of One Semarang Team	One Architecture and Urbanism	Amsterdam, the Netherlands	08-06-2020
84	Program Advisor Global Public Goods	Netherlands Enterprise Agency	The Hague, the Netherlands	08-06-2020
85	Dutch International Water Envoy	Ministry of Infrastructure and Water Management	The Hague, the Netherlands	07-01-2020

Appendices

Appendix C: Expert focus group discussions

Expert focus group discussion 1 (Chapter 2):

The session was co-hosted by the Centre for Mega City and City Studies in Thailand, 27 February 2017.

The following topics were discussed:

- Introduction and adoption of resilience in policy development of Thailand after the 2011 Floods
- Institutional challenges to implement flood resilience policy
- Policy direction for flood resilience policy development and transition in water management in Thailand

The list of participants

No.	Participants	Organizations
1	Secretary-General (Guest)	Vetunyu Na Thlang Foundation
2	Committee	the Centre for Mega City and City Studies
3	Researcher	the Centre for Mega City and City Studies
4	Director (Moderator)	the Centre for Mega City and City Studies
5	Research assistance	the Centre for Mega City and City Studies
6	Research assistance	the Centre for Mega City and City Studies
7	Research assistance	the Centre for Mega City and City Studies
8	Research assistance	the Centre for Mega City and City Studies
9	Research assistance	the Centre for Mega City and City Studies
10	Research assistance	Klang Panya Research Institute
11	Research assistance	Klang Panya Research Institute

Expert focus group discussion 2 (Chapter 4):

The session was co-hosted by the Research Center for Disasters Studies, Gadjah Mada University in Yogyakarta, Indonesia, 22 March 2019.

The following topics were discussed:

- On-going and increasing flood risks in Semarang, Indonesia

- Main institutional challenges to cope with increasing urban flood risks in Semarang and Indonesia
- Essential capacities to increase flood resilience in cities and communities in Indonesia

The list of participants

No.	Participants	Organizations
1	PhD Student	Gadjah Mada University
2	PhD Student	Gadjah Mada University
3	MScs student	Gadjah Mada University
4	MScs student	Gadjah Mada University
5	MScs student	Gadjah Mada University
6	MScs student	Gadjah Mada University
7	Researcher	the Research Center for Disasters Studies,
8	Director (Moderator)	the Research Center for Disasters Studies,
9	Lecturer	Gadjah Mada University

Appendices

Appendix D: Observations

The participatory observation in meeting 1 was used for Chapter 2.

The participatory observations in meetings 2-3 were used for Chapter 2.

No.	Meeting	Location	Date
1.	UNDP Regional Consultation Meeting on Strengthening Disaster Risk Management in the Budget Process – lessons from Public Expenditure and Institutional Reviews	Bangkok, Thailand	28-02-2017
2	Water as Leverage Semarang International Seminar	Semarang, Indonesia	13-03-2019 – 14- 03-2019
3	Survey locations for strategic resilience proposals of Cascading Semarang team	Semarang, Indonesia	15-03-2019
4	Public Seminar at Regional and Urban Planning Department, Diponegoro University	Semarang, Indonesia	18-03-2019
5	Filed visit and discussion with community members from Pangong Lor	Semarang, Indonesia	28-03-2019
6	Filed visit and discussion with community members from Genuk Sari	Semarang, Indonesia	28-03-2019
7	Filed visit and discussion with community members from Tangjung Mas	Semarang, Indonesia	25-03-2019
8	Water as Leverage discussion and studio presentation at Academy of Architecture Amsterdam	Semarang, Indonesia	11-06-2019

Appendix E: Code networks for the data analysis

The following code networks presented in this appendix were used for data analysis in each chapter. The computer software, Atlas.ti (version 8), was used for the analysis.

Chapter 2:

Code network 1 Strategy

Code network 2 Process

Appendices

Code network 3 Anticipated outcome

Chapter 3:

Code network 1 Dimensions of water policy translation

Appendices

Code network 2 Dutch delta management frame

Code network 3 Mekong delta management frame

Appendices

Chapter 4:

Code network 1 Intellectual capital

Code network 2 Social capital

Code network 3 Political capital

Chapter 5:

Code network 1 Boundary rules

Appendices

Code network 2 Position rules

Code network 3 Choice rules

Code network 4 Scope rules

Code network 5 Aggregation rules

Code network 6 Information rules

Code network 7 Payoff rules

Appendices

Appendix F: Topics of interviews and discussions

Case 1: Bangkok Resilience Strategy

Interview round 1 (mainly insiders)

Semi-structured interview guide

Topic 1 Resilience policy

- Resilience policy development and initiatives after the floods in 2011?
- How can we identify discursive turn and policy framing of resilience policy development?
- Key concepts in the development of the resilience policy
- Identifying the multiple interpretation of resilience

Topic 2 Institutional arrangement and planning process

- Is there any institutional arrangement to support resilience policy transition?
- The challenges and enabling conditions for the resilience policy transition?
- Identifying key actors in formalization of resilience policy

Topic 3 Flood Risk Governance (national level/ city level)

- Operationalizing resilience in planning and policy: infrastructure, spatial measures, flood risk management
- Identifying progress and opportunities for resilience development and implementation
- Identifying the governance challenges, institutional challenges, institutional traps, path dependencies and other pressing issues regarding the difficulties in resilience policy development implementation

Interview round 2 (mainly outsiders)

Semi-structured interview guide

Topic 1 Perceptions of communities on the Bangkok flood issues and current FRM

- What was your experience in 2011 Floods?
- Have you been recently impacted by other flood events in Bangkok?
- What is your perception of Bangkok flood risks?
- How do you evaluate the current flood management measures in Bangkok and metropolitan regions?

Part 2 Role of community in Bangkok FRM

- How does your community involve in Bangkok FRM?
- Do you acknowledge the recent Bangkok Resilience Strategy? If yes, how does the community involvement in the formulation and implementation of the strategy?
- How can the community involve in Bangkok FRM? And should they involve?

Expert-focus group discussion

Main discussion point

- What are the pressing issues concerning water management and flood risk governance in Thailand?

Sub-discussion points

- How can we assess policy knowledge and institutional arrangement for resilience policy development in Thailand?
- How does a wide range of sectors in Thailand involve in the interpretation of the resilience policy in practice?
- Resilience policy development after 2011 Floods?
- What are institutional challenges to implement integrated water management policy ideas and resilience flood management?
- Do key actors and institutions involve in resilience policy development?
- The major policy direction in water and flood management?
- Assessing the transition of water management and resilience flood policy initiatives governance measures in Thailand?

Appendices

Case 2: Mekong Delta Plan

Interview round 1 (mainly on creation and mobilization of Dutch delta management)

Semi-structured interview guide

- Can you explain the role of the Netherlands in global cooperation for exporting and sharing knowledge and expertise in delta and water management?
- How do you position the Netherlands in international cooperation in the field of water management?
- Since when the internalization of Dutch water management became important? What are the key events or critical points in which the Dutch water policy is being exported and internationalized? (Historical story)
- What are the aims of the government in promoting and stimulating water collaborations and solutions?
- What are the current strategies to achieve those aims? – What are the current policy of the Netherlands in international water management? (Strategy story)
- To what extent do you think the government had achieved those aims, and what are the barrier or possible challenges of this current role?
- What is your reflection in assessing the outcomes, opportunities and challenges on the policy mechanism of international Dutch water management?

Interview round 2 (main on the creation and embedding the solutions of Mekong Delta Plan)

Semi-structured interview guide

- The role of the consultant companies in internationalization/export/transfer of Dutch water management
- The role of the consultant companies in project development and institutional design for resilient urban deltas in Vietnam, namely, the development and implementation of the Mekong Delta Plan 2013
- The challenges to implement the Dutch water management/delta management in the context of Southeast Asian developing countries, especially in Vietnam

Case 3: Water as Leverage program in Semarang

Interview round 1 (reflecting Semarang's institutional capacities)

Part 1 Semarang flood risks and urban flood risk management policies

- What are the immediate problems and medium and long-term flood risk and climate vulnerabilities in Semarang?
- What are your organizational/departmental roles in flood risk management and the development of resilience policy?
- How do you/your organization cooperate with international partners for flood resilience policy? And Which organization involve?
- What are the flood risk management measures (both structural, non-structural, adaptation, awareness and others)?
- What is the key process in developing and implementing flood policies?

Part 2 Flood resilience policy and planning process

- How does resilience concept is being operationalized in the development and implementation of city's flood risk management?
- How do communities (especially vulnerable communities) involve in and benefit from current flood risk management and resilience policy development?

Part 3 International collaboration, key lessons and recommendations

- What do you think are the interesting and relevant best practices, key lessons, frontline practices and innovative programs from participating in international policy platforms and working with international partners?
- What would you recommend for current engagement of the city of Semarang in international collaboration efforts for flood resilience planning and climate adaptation?

Interview round 2 (reflecting the Water as Leverage program)

Part 1 Organization process – WaL program

- Reflection on the structure and methods for organizing the WaL collaborative and design process in Semarang (case) and at the WaL program level

Appendices

- Types of methods/approaches and their effectiveness for achieving the aim in creating enabling environment for designing the resilience solutions
- Suggestions for improvement of these methods/approaches

Part 2 Roles and activities – Multidisciplinary design team(s) Semarang

- Reflection on the organization of tasks and responsibilities within the design teams
- Key members who lead the various stages of the design process (content-oriented)
- Key members and activities for collaboration, communication and connecting various networks and professions in the co-creation process (process-oriented)
- Suggestions for improvement

Part 3 Collaboration – Semarang context

- Reflection on barriers and enabling conditions in collaboration with city's stakeholders in Semarang and on WaL program level
- Other barriers and enabling conditions encountered by policy makers and stakeholders in WaL-Semarang
- Moments of linking and connecting in the WaL-Semarang process (Who were enablers in connecting on and collaborating with?)
- What were defining moments for connection and collaboration?
- Effective methods and good lessons from the WaL collaborative approach (what works well?), and particularly in overcoming barriers
- Challenges and points for improvement in the collaboration process

Expert-focus group discussion

Main discussion points

- What do you think are the main governance and institutional challenges in coping with increasing flood risk in Indonesia and Asia?
- Which capacities are needed to address resilient cities and communities in Indonesia and Asia?

Field visit

Discussion points with local communities

- Community's flood problems, risks and impacts
- The key flood risk management measures in communities (structural, non-structural, adaptation, awareness and others)?
- Community's involvement in flood risk management policies and measures?
- Community's involvement in engagement with international partners/NGOs/experts in flood resilience projects?
- Recommendations for reducing flood risk in communities

The background of the page is composed of several overlapping, wavy, horizontal bands of different shades of gray, ranging from light to dark. A semi-transparent, light gray rectangular box is positioned in the upper left quadrant of the page. Inside this box, the word "Summary" is written in a bold, black, serif font.

Summary

Summary

Introduction

Cities in Southeast Asia are regularly impacted by increasing flood risks and the consequences of climate change. In these urbanized regions, the social and economic impacts of flooding are often unfairly distributed, with low-income communities being most affected by flood- and climate-related risks. These communities are predominantly located in areas vulnerable to flooding and, at the same time, they have the least resources to respond to and recover from flood events. Despite the urgency due to the economic and societal impacts of flood disaster in the region, little investment is made regarding proactive and long-term solutions for urban flood risk management. Many cities still rely on technical measures, such as flood protection infrastructure. However, such a technical flood protection approach has been criticized for its negative consequences for the natural environment and for low-income communities, as well as for its inability to cope with increasing and changing climate impacts. Against this background, there is increasing attention in cities in both developed and developing countries to address the complex flood- and climate-related risks and to become ‘flood-resilient cities’. Planning for inclusive urban flood resilience revolves around urban flood adaptation by introducing integrated measures and multi-functional urban design solutions, such as spatial retention, flood-proof building, and water-sensitive neighborhood design. In the context of Southeast Asian urbanized regions, these strategies are either underdeveloped or they encounter great difficulties when they are translated from planning to design and implementation. Institutional transformation is needed to enable the development and implementation of these comprehensive and integrated flood resilience strategies.

Globally, planning for urban flood resilience is strongly promoted in urban policy development and planning. Policy makers are actively engaged in the global resilience movement, for instance in various international resilience programs that introduce the resilience concept and translate global water policy ideas into urban resilience strategies and local water planning practices. International water solutions, such as the Dutch delta management, are strategically promoted to develop flood resilience and sustainable delta management in both developing and developed countries. These policy ideas are internationally mobilized and locally translated to support cities in achieving United Nations Sustainable Development Goal 11: “Make

Summary

cities and human settlements inclusive, safe, resilient and sustainable.” Notably, planning for reducing flood risks in urbanized regions in Southeast Asia requires particular attention to ecological and climatic impacts on vulnerable communities. The dimensions of ‘social justice’ and ‘inclusivity’ should therefore have a more central place in local flood resilience policy development and implementation. Therefore, this study specifically addresses the required institutional transformation for inclusive flood resilience planning and explores the role of international resilience programs in contributing to this transformation.

To date, despite its wide adoption in recent planning practice and policy formulation, the resilience concept has been criticized in ongoing academic debate. This is why this study has adopted a critical perspective in addressing the three main criticisms identified in previous research about resilience and flood risk management. The first of these criticisms relates to the limited attention to the power dimension and the political process in the interpretation of the resilience concept and water policy ideas in planning practice. In response, this study highlights the need for integrating the voices of and insights from both ‘insiders’ (e.g. policy makers, experts, and consultants) and ‘outsiders’ (the broader network of stakeholders, non-governmental organizations (NGOs), and local communities) as this is important for investigating social justice and inclusivity outcomes in urban flood resilience planning.

The second criticism refers to the difficulty to operationalize the resilience concept in strategies for reducing flood risks. In practice, the adoption of resilience tends to prioritize implementing and investing in technical flood protection measures rather than promoting proactive and flexible urban flood adaptation. A critical perspective is therefore also relevant to explicitly examine the operationalization of the resilience concept in practice, in other words the construction and negotiation of meaning in the interpretation of the resilience concept and water policy ideas.

The third and last criticism is that there has been little discussion about the planning process necessary to achieve inclusive flood resilience. There is a need for a better understanding of the planning process to allow open and inclusive engagement both at the local and the national level. Planning for inclusive flood resilience thus requires an institutional design for introducing, embedding, and implementing integrated and holistic flood risk management strategies in the local planning and governance context. By adopting such a critical perspective, this study focuses on institutional design based on institutional capacity building among local actors and

institutional conditions for long-term policy change – in other words, institutional transformation towards inclusive flood resilience.

Research Design

The overall aim of this research is, therefore, *to explore and understand institutional transformation for inclusive flood resilience planning in urbanized regions in Southeast Asia, and how international resilience programs can contribute to this transformation.*

This overall research aim is translated into the following main research question:

How can institutional transformation for inclusive flood resilience in urbanized regions in Southeast Asia be enabled, and how can international resilience programs contribute to this transformation?

This research question is divided into four main sub-research questions that structure this study:

1. Conceptualization of inclusive flood resilience planning
How can we understand resilience policy development for addressing flood vulnerabilities in a city in a developing country?
2. Water policy translation from a developed to a developing country
How do international water policy ideas travel across borders and how can these ideas contribute to the development of water solutions to address local water challenges?
3. Local institutional capacity building for flood adaptation
How can international resilience programs enable the building of local institutional capacities for the development and implementation of flood adaptation strategies?
4. Institutional conditions for enabling inclusive flood resilience planning
Which institutional conditions promote the development and implementation of inclusive flood resilience strategies by international resilience programs?

Recognizing the complexity of the flood resilience planning process, the critical perspective developed in this study emphasizes the importance of an inclusive process as well as the role of language and meaning-making in the formulation of

Summary

resilience strategies, and it stresses the development of enabling institutional capacities and conditions for inclusive flood resilience planning. This study is divided into two parts.

The first part of this study focuses on the interpretation of global water policy ideas and the resilience concept in local planning practices. Using a framing approach, the study starts by analyzing the development and implementation of resilience policies for addressing urban flood risks in Bangkok. Bangkok is part of the 100 Resilient Cities program, and the city formulated the Bangkok Resilience Strategy following a major flood event in 2011. Next, the study focuses on the translation of water policy ideas from the Netherlands to Southeast Asia by using the creation of the Mekong Delta Plan (MDP) in Vietnam as the case study. As water policy translation is in essence a meaning-making process, a framing perspective was again employed to analyze how meanings are created and adopted across borders to address local water challenges.

In the second part, the focus of this study shifts to the institutional design for inclusive flood resilience planning, and to the way in which international resilience programs could help to develop more comprehensive and integrated flood resilience strategies. On the one hand, the study addresses local institutional capacity building to develop and implement holistic and integrated flood resilience strategies. As a case study, this study uses the Water as Leverage for Resilient Cities Asia (WaL) program in Semarang, Indonesia. The WaL program was initiated by the Dutch government to introduce the 'resilience by design' process in three Asian cities including Chennai (India), Khulna (Bangladesh), and Semarang (Indonesia). An analytical framework has been developed to study local institutional capacity building by the international resilience program, especially in its process designs and program activities. On the other hand, this study analyzes the essential institutional conditions for inclusive flood resilience planning. To this end, the Institutional Analysis and Development (IAD) framework has been adopted to structure the comparative analysis of the two international resilience programs in Southeast Asia: the Mekong Delta Plan (MDP) in Vietnam and the Water as Leverage for Resilient Cities Asia (WaL) program in, Semarang, Indonesia.

Using this design, this research wishes to provide a better understanding of cross-border learning and the role of international resilience programs in these processes. It provides lessons and recommendations related to enabling institutional design to reduce flood risks in the context of developing countries, such as Thailand, Indonesia, and Vietnam. The analysis of this research has been based on three qualitative case studies of flood resilience planning in Southeast Asia, namely (1) the

formulation of the Bangkok Resilience Strategy, (2) the making of the Mekong Delta Plan (MDP) in Vietnam, and (3) the Water as Leverage for Resilient Cities Asia (WaL) program in Semarang. These three cases were selected for this research based on their geographical and socio-ecological vulnerabilities to flooding as well as their involvement and experience in international resilience programs. While the findings from these cases are specific to each context (both in terms of location and program), they are also relevant to broader policy implications for inclusive flood resilience planning in the context of both developed and developing countries. The MDP and the WaL program were both initiated by the Netherlands as part of the country's international water policy and ambitions to become the global partner for water solutions, especially in Southeast Asia.

To analyze these cases, qualitative data are used, comprising 85 in-depth interviews, 33 policy documents, 8 participatory meetings and field visits, and 2 expert focus group discussions. A summary of the main findings for addressing the four sub-research questions is presented below, with reference to the specific chapters.

Interpretation of the resilience concept and water policy ideas

Conceptualization of inclusive flood resilience planning

International resilience programs such as the 100 Resilience Cities program support cities around the world in introducing the resilience concept for improving their local urban flood risk management. As part of the critical perspective developed in this research, a policy framing is adopted as an analytical approach to analyze the way in which both 'insiders' and 'outsiders' interpret the flood resilience concept in local planning practice. In **Chapter 2**, inclusive flood resilience planning is conceptualized in terms of strategy, process, and outcome.

The analysis of the Bangkok Resilience Strategy shows that the economic growth frame has been dominant in the interpretation of resilience in urban flood risk management. In terms of strategy, the resilience policy thus reinforces existing flood protection infrastructure rather than leading to a more integrated and holistic approach in dealing with the increasing flood risks. While an open stakeholder engagement process is important for developing inclusive flood resilience strategies, the Bangkok Resilience Strategy mainly involves international experts and government officials. There are limited opportunities for other stakeholders such as

Summary

local communities and civil society organizations – the ‘outsiders’ – to engage in the city’s resilience policy making. Regarding the anticipated outcomes, economic outcomes are largely prioritized. There is little attention for interrelated societal impacts from flood risks and existing flood protection strategies. This chapter argues that only focusing on an economic outcome and flood protection for certain economically significant areas, without considering the ongoing physical and social vulnerabilities, will make it harder for cities to cope with increasing flood risks. The neglect of the social justice issue in flood resilience planning may well result in the deepening of unequal flood vulnerabilities, and this is relevant to both developing and developed countries. The consideration of an inclusive approach, by integrating local voices, should therefore be promoted in urban flood resilience policies.

Water policy translation from a developed to a developing country

The Dutch government has been actively promoting a flood resilience approach and water policy solutions in many countries, including in Southeast Asia. **Chapter 3** focuses on the water policy translation from the Netherlands to Vietnam. Water policy translation is an inherently complex, dynamic, and political process. In line with the critical perspective developed for this study, a framing perspective has been adopted to reconstruct, on the one hand, how water policy ideas are created and mobilized as global water solutions, and on the other hand, how the meaning of global water solutions is interpreted in local water planning practice. By connecting a framing perspective to policy translation, four key dimensions in the translation of the global water solutions can be distinguished.

The first dimension highlights the roles of Dutch water policy experts, consultants, and academics in defining the meaning of global water challenges and promoting particular ideas as global water solutions. This results in the development of the Dutch delta management frame in the internationalization of Dutch water policy solutions. The second dimension portrays the strategic partnership between Dutch consultants, experts, and diplomats and international organizations as well as the creation of the global resilience policy platforms for positioning the Dutch delta management frame in global water policy agendas. The third dimension illustrates the adaptation of the international water policy ideas for local-specific water solutions – in other words, the creation of a local-specific water policy frame. In this case, the Mekong Delta management frame has been created, which focuses on the economic development of the agro-business industrialization in the delta region. The

fourth and last dimension demonstrates the challenges in embedding the key concepts of the Dutch delta management frame, such as ‘collaborative governance’ and ‘scenario planning’, in local water planning practice. Chapter 3 shows that these key concepts were not developed together with the local stakeholders. Consequently, there has been a lack of local willingness and acceptance of the recommendations of both the Dutch and the Mekong delta management frame. Although the implementation of the Mekong Delta Plan has received financial and technical support from many international development partners, continuous learning and long-term engagement in local capacity building are still required for the advancement and realization of the water policy ideas, especially in the local water planning practices.

Institutional design for inclusive flood resilience planning

Local institutional capacity building for flood adaptation

Proactive and integrated flood resilience strategies are often difficult to realize in practice. An enabling institutional design is therefore required for inclusive flood resilience planning. **Chapter 4** discusses how an international resilience program such as Water as Leverage for Resilient Cities Asia (WaL) program could stimulate the building of local institutional capacities for the development and implementation of flood adaptation strategies. To this end, this study has developed an institutional capacity-building framework that focuses on three elements of institutional capital: intellectual capital, social capital, and political capital.

For intellectual capital, the WaL program in Semarang facilitates a learning process for the sharing and the co-creation of flood resilience ideas and solutions, for instance, by creating a ‘soft space’ for stakeholder interaction. This process is important for strengthening local institutional capacities for the identification of local flood and climate vulnerabilities and the formulation of new solutions. Although it is not the primary objective of the program, this chapter suggests that embedding this process – including a design contest, design-based research, and design workshops – in the local planning context could strengthen local intellectual-capacity building for the continuous adjustment of planning practice in urban flood risk management. In terms of social capital, the WaL program manages to bring together international and local spatial designers, academics, urban planners, water experts, social workers, international and local NGOs, and international and local

Summary

financial institutions. This chapter also emphasizes the need to increase opportunities for the local NGOs with limited resources to engage in this ‘resilience by design’ process. Regarding political capital, the ownership and support of the local government and the active contribution of the city’s change agents, including the local resilience team, are significant for the uptake of the flood adaptation strategies in the further implementation phase. While the international resilience program could support the local stakeholders and multidisciplinary design teams in co-creating local specific flood resilience strategies, the local capacities to transform these strategies to project implementation remains limited. Specifically in the case of Semarang, the missing formal link with policy makers from the national government hinders the advancement of the flood adaptation solutions into proposal development, financing, and implementation.

Institutional conditions for enabling inclusive flood resilience planning

In addition to institutional capacity building, enabling institutional conditions is another important element of the critical perspective developed in this study. Based on the IAD framework, **Chapter 5** looks at how international resilience programs promote essential conditions for the development and implementation of inclusive flood resilience strategies. With the comparative analysis of the MDP in Vietnam and the WaL program in Semarang, four main institutional conditions have been identified as essential for inclusive flood resilience planning.

The first condition relates to the local willingness and ownership of both the developed flood resilience solutions and the inclusive flood resilience planning and design process. The findings indicated that the implementation of flood resilience solutions relies on ownership and a strong political will of the government agencies at local and national levels. This inclusive and open engagement of a range of stakeholders is important for increasing local willingness and ownership of both flood resilience solutions and inclusive flood resilience design and planning processes. The second condition deals with the alignment between flood resilience solutions and formal planning and policy-making processes. This chapter suggests integrating the flood resilience proposals in the existing city resilience policy. The third condition focuses on the prospect of funding and implementation. Open and clear communication about funding opportunities and constraints are essential for international resilience programs. The findings also highlight the exploration of shared local responsibilities and willingness to adopt, finance, and implement

solutions by local and national policy actors. The fourth and last condition involves learning for transformative change. The aspiration of this long-term policy change requires the fostering of institutional change and innovation from learning and collaborative processes. International resilience programs can encourage learning and experimentation with new solutions and ideas. At the same time, the findings also show that the integration of local knowledge, experience, and insight are key to stimulating a sense of local ownership and willingness to adopt and implement flood resilience solutions in practice.

Conclusions and recommendations

By introducing a critical perspective to flood resilience research, this study emphasizes the social justice dimension of urban flood resilience. The issues of ‘social justice’ issue and ‘inclusivity’ in flood resilience planning should be anticipated by the city’s resilience policy makers and experts to prevent a deepening of unequal flood vulnerabilities among local communities. To prevent this from happening, this study suggests a greater emphasis on organizing an inclusive process to include the voices of a wider range of stakeholders and to allow various actors to develop ideas contributing to the planning of inclusive urban flood resilience. This study also puts forward the consideration of such an inclusive approach to addressing the issue of urban informal settlement communities. Instead of just focusing on technical measures and legal enforcement to solve this issue, the social inclusive frame should also be considered, particularly in cities in developing countries. In other words, economic equality and the improvement of social housing should be addressed alongside reducing urban flood risks and restoring the urban water system.

Recognizing the significant roles of local policy actors and their capacities, this study highlights the application and potential of a ‘resilience by design’ process to ensure integrated and inclusive outcomes in flood resilience planning. Despite its potential, such a ‘resilience by design’ process has been proved to require an investment of time in the creative process, which includes design-based research, the design contest, the co-creation and design of solutions, and the development of flood resilience proposals. Based on insights from the evolutionary interpretation of the resilience concept, the establishment of new networks and coalitions between stakeholders is an important element of institutional transformation. A city’s resilience team, consisting of local academics, NGO workers, and policy officials, can play an important role as ‘change agents’ in facilitating the engagement with local

Summary

governments and communities. In addition, the institutional challenges related to the implementation of a design-led planning process are evidenced in the case study. Continuous political support from official decision makers in the beneficiary countries is crucial for embedding the developed resilience solutions in the local and national institutional contexts and for activating the financing and implementation of the project. This is why this study suggests that the active involvement of local governments in the design of the solutions is important, so as to ensure the practicality and compatibility of the flood resilience proposals in the formal administrative context.

Furthermore, this study reflected on cross-border learning and on the translation of global water policy ideas for addressing the water challenges in the context of urbanized delta regions in developing countries. There are both opportunities and risks involved in the use of global water solutions in cross-border learning to address local water challenges. In terms of opportunities, the creation of global water solutions can help stimulate the transfer of knowledge and the organization of a collaborative learning process. In terms of risks, an exclusive focus on mobilizing global water solutions without explicitly considering the translation and communication process may lead to the loss of meaningful social connections on the ground. Promoting 'packaged' and 'ready-made' solutions may disregard the local context and the need for a social process in stimulating the understanding and adaptation of global water policy ideas. Consequently, this study proposes the consideration of a social and inclusive process of integrating global water solutions that focuses on building a shared understanding and local institutional capacities as well as on jointly identifying local risks and co-creating potential solutions.

To sum up, this study calls for an institutional transformation to address the long-term flood risks and societal impacts from water and climate challenges in the context of developing countries. For international resilience programs, this concerns the opportunities to capitalize on existing local experience and knowledge, and to strengthen and build on local resilience networks and initiatives. The consideration and in-depth understanding of the local institutional, planning, and cultural contexts are important for tailoring the process and approach of international resilience programs to local circumstances and specific characteristics. For cities in Southeast Asia, planning for inclusive flood resilience cities means exploring new possibilities and ensuring fairness in water and environmental policy and planning. Cities in this region can start by exploring new types of partnerships and collaborative platforms, including exploring and exploiting expertise and resources from different actors and stakeholders. By fostering a collaborative platform, cities can promote experimenting

with new types of strategies that will enhance urban flood adaptation, and they can identify and seek opportunities to integrate these inclusive flood resilience strategies into broader urban management agendas. This study invites future researchers to explore the various possibilities of using flood resilience planning as a vehicle to stimulate planning for cities that are fair and inclusive.

Summary

Samenvatting

Introductie

Steden in Zuidoost-Azië hebben regelmatig te maken met steeds groter wordende overstromingsrisico's en de gevolgen van klimaatverandering. In deze verstedelijkte regio's zijn de sociale en economische gevolgen van overstromingen vaak oneerlijk verdeeld, waarbij de lage inkomensgroepen het meest kampen met de negatieve gevolgen van overstromingen en andere klimaatgerelateerde risico's. De lage inkomensgroepen wonen voornamelijk in de gebieden die met name kwetsbaar zijn voor overstromingen en hebben tegelijkertijd de minste middelen om adequaat te kunnen reageren op overstromingen en hier weer van te herstellen. Ondanks de economische en maatschappelijke impact van overstromingsrampen, wordt er weinig geïnvesteerd in proactieve en langetermijnoplossingen voor stedelijk overstromingsrisicobeheer. Veel steden vertrouwen nog teveel op technische maatregelen, zoals infrastructuur die bescherming moet bieden tegen overstromingen. Er is echter kritiek op een dergelijke technische benadering, met name vanwege de negatieve effecten die deze benadering met zich meebrengt op zowel de natuurlijke omgeving als op lage inkomensgroepen. Daarnaast zou een dergelijke benadering voorbij gaan aan de toenemende en veranderende klimaateffecten.

Tegen deze achtergrond is er steeds meer aandacht in steden, in zowel ontwikkelde landen als in ontwikkelingslanden, voor de complexe overstromings- en klimaatrisico's. Ook wordt steeds vaker de ambitie geformuleerd om een 'overstromingsveerkrachtige stad' te worden. Het plannen van inclusieve stedelijke overstromingsveerkracht gaat over het implementeren van integrale maatregelen en multifunctionele stedenbouwkundige oplossingen in steden. Voorbeelden daarvan zijn overstromingsveerkrachtig bouwen en het ontwerpen van wijken met oog voor de waterhuishouding. In de context van de verstedelijkte regio's in Zuidoost-Azië zijn deze strategieën echter ofwel onderontwikkeld of moeilijk te vertalen naar concrete ontwerpen en interventies. Institutionele transformatie is noodzakelijk om de ontwikkeling en uitvoering van deze integrale strategieën voor overstromingsveerkracht mogelijk te maken.

Wereldwijd wordt de planning voor stedelijke overstromingsveerkracht sterk bevorderd tijdens het werken aan de ontwikkeling en planning van stedelijk

beleid. Beleidsmakers zijn actief betrokken bij het wereldwijde streven naar veerkracht, wat naar voren komt in verschillende internationale programma's waarin het concept overstromingsveerkracht wordt geïntroduceerd en waarin mondiale ideeën over waterbeleid worden vertaald naar stedelijke strategieën en de lokale waterplanningspraktijk. Internationale wateroplossingen, zoals de Nederlandse deltamanagement benadering, worden gestimuleerd om overstromingsveerkracht en duurzaam deltabeheer te ontwikkelen in zowel ontwikkelingslanden als ontwikkelde landen. Deze beleidsideeën worden internationaal gebundeld en vervolgens lokaal vertaald om steden te ondersteunen bij het bereiken van Duurzame Ontwikkelingsdoelstelling 11 van de Verenigde Naties: *"Maak steden en menselijke nederzettingen inclusief, veilig, veerkrachtig en duurzaam."* Met name bij de planning van het verminderen van overstromingsrisico's in verstedelijkte regio's in Zuidoost-Azië is er speciale aandacht nodig voor de ecologische en klimatologische effecten op kwetsbare groepen. De dimensies 'sociale rechtvaardigheid' en 'inclusiviteit' moeten dan ook een centralere plaats krijgen bij de ontwikkeling en uitvoering van lokaal beleid inzake overstromingsveerkracht. Daarom richt deze studie zich specifiek op de vereiste institutionele transformatie voor inclusieve planning van overstromingsveerkracht, waarbij wordt onderzocht hoe internationale programma's voor het stimuleren van veerkracht kunnen bijdragen aan deze transformatie.

Tot op heden is het concept 'veerkracht' – ondanks de brede acceptatie ervan in de planningspraktijk en beleidsformulering – bekritiseerd in het academische debat. Daarom wordt in deze studie een kritisch perspectief ingenomen ten aanzien van de drie belangrijkste punten die uit eerder onderzoek naar veerkracht en overstromingsrisicobeheer zijn gebleken. Het eerste kritiekpunt heeft betrekking op de beperkte aandacht in de planningspraktijk voor de machtsdimensie en het politieke proces bij de interpretatie van het veerkracht-concept en waterbeleidsideeën. Daarom wordt in deze studie de noodzaak van het integreren van de meningen en inzichten van zowel 'insiders' (zoals beleidsmakers, experts en consultants) als 'outsiders' (het netwerk van stakeholders, niet-gouvernementele organisaties (NGO's) en lokale gemeenschappen) benadrukt, omdat dit belangrijk is voor het onderzoeken van sociale rechtvaardigheid en inclusiviteit in de planning van stedelijke overstromingsveerkracht. Het tweede punt betreft de moeite om het concept 'veerkracht' te operationaliseren in strategieën gericht op het verminderen van overstromingsrisico's. In de praktijk is men bij het stimuleren van veerkracht geneigd om prioriteit te geven aan het uitvoeren van en investeren in technische maatregelen ter bescherming tegen overstromingen, in plaats van het bevorderen van een proactieve en flexibele aanpassing aan stedelijke overstromingen. Een kritisch

Summary

perspectief is dan ook relevant voor het onderzoeken van de operationalisering en interpretatie van veerkracht in de beleidspraktijk. Het derde en laatste kritiekpunt is dat er weinig discussie is geweest over het planningsproces dat nodig is om te komen tot inclusieve overstromingsveerkracht. Er is behoefte aan een beter begrip van dit planningsproces om open en inclusieve betrokkenheid mogelijk te maken, zowel op lokaal als op nationaal niveau. Het plannen voor inclusieve overstromingsveerkracht vereist een institutioneel ontwerp dat het introduceren, verankeren en implementeren van integrale en holistische strategieën voor overstromingsrisicobeheer in de lokale plannings- en bestuurlijke context mogelijk maakt.

Op basis van dit kritische perspectief onderzoekt deze studie het benodigde institutionele ontwerp voor de planning van overstromingsveerkracht, door enerzijds te kijken naar de opbouw van institutionele capaciteit tussen betrokkenen en anderzijds naar de institutionele condities die beleidsverandering op de lange termijn mogelijk maken.

Onderzoeksopzet

Het doel van dit onderzoek is *om institutionele transformatie voor inclusieve planning voor overstromingsveerkracht in verstedelijkte regio's in Zuidoost-Azië te onderzoeken en te begrijpen, evenals de bijdrage die internationale programma's voor de opbouw van veerkracht kunnen leveren aan deze transformatie*. Deze doelstelling wordt vertaald in de volgende hoofdvraag:

Hoe kan institutionele transformatie voor inclusieve overstromingsveerkracht in verstedelijkte regio's in Zuidoost-Azië mogelijk worden gemaakt, en hoe kunnen internationale programma's voor veerkracht bijdragen aan deze transformatie?

Deze onderzoeksvraag is onderverdeeld in vier deelonderzoeksvragen die samen de structuur bepalen van deze studie:

1. Conceptualisering van inclusieve planning van overstromingsveerkracht
Hoe kunnen we de ontwikkeling begrijpen van veerkrachtbeleid voor het aanpakken van de kwetsbaarheden als gevolg van overstromingen in een stad in een ontwikkelingsland?

2. Vertaling van waterbeleid van een ontwikkeld naar een ontwikkelingsland
Hoe reizen internationale ideeën over waterbeleid over de nationale grenzen heen en hoe kunnen deze ideeën bijdragen aan het ontwikkelen van oplossingen voor de aanpak van lokale waterproblemen?
3. Lokale institutionele capaciteit voor adaptatie aan overstromingen
Hoe kunnen internationale veerkrachtprogramma's de opbouw van lokale institutionele capaciteit voor de ontwikkeling en implementatie van strategieën om adaptatie aan overstromingen mogelijk maken?
4. Institutionele condities voor inclusieve planning van overstromingsveerkracht
Welke institutionele condities bevorderen de ontwikkeling en implementatie van inclusieve strategieën voor overstromingsveerkracht door internationale programma's?

Het kritische perspectief dat in deze studie is ontwikkeld, onderkent de complexiteit van het planningsproces voor overstromingsveerkracht. Het benadrukt het belang van een inclusief planningsproces, alsmede de rol van taal en betekenisgeving bij het formuleren van strategieën voor de opbouw van veerkracht. Daarnaast benadrukt het de ontwikkeling van institutionele capaciteit en condities voor inclusieve planning voor overstromingsveerkracht.

De studie is verdeeld in twee delen, waarbij het eerste deel van deze studie zich richt op hoe de lokale planningspraktijk mondiale ideeën over waterbeleid en het veerkracht-concept interpreteert. Door middel van een framing-benadering, wordt de ontwikkeling en implementatie van beleid voor het aanpakken van stedelijke overstromingsrisico's in Bangkok geanalyseerd. Bangkok maakt deel uit van het *100 Resilient Cities*-programma en de stad stelde na een grote overstroming in 2011 een strategie op om veerkracht te vergroten. Vervolgens is in deze studie onderzocht hoe ideeën over waterbeleid van Nederland naar Zuidoost-Azië worden vertaald. Hierbij is het Mekong Delta Plan (MDP) in Vietnam als casestudie gebruikt. Omdat het vertalen van waterbeleid een proces van betekenisgeving is, wordt opnieuw voor een framing-benadering gekozen met als doel om te analyseren hoe, over nationale grenzen heen, betekenis wordt gecreëerd en invulling wordt gegeven aan mondiale wateroplossingen om lokale waterproblemen aan te pakken.

Summary

In het tweede deel van deze studie verschuift de focus naar het institutionele ontwerp voor inclusieve planning van overstromingsveerkracht en de wijze waarop internationale veerkrachtprogramma's kunnen bijdragen aan de ontwikkeling van integrale strategieën voor overstromingsveerkracht. Enerzijds is het tweede deel van deze studie gericht op de ontwikkeling van lokale institutionele capaciteit om strategieën voor overstromingsveerkracht te ontwikkelen en te implementeren. Als casestudie wordt het programma '*Water as Leverage for Resilient Cities Asia*' (WaL) in Semarang (Indonesië) gebruikt. Het WaL-programma is geïnitieerd door de Nederlandse overheid en introduceerde een '*resilience by design*'-proces in drie Aziatische steden, namelijk Chennai (India), Khulna (Bangladesh) en Semarang (Indonesië). Een conceptueel kader is ontwikkeld om te onderzoeken hoe het WaL-programma institutionele capaciteit probeerde op te bouwen in Semarang voor de ontwikkeling van integrale en inclusieve strategieën voor het vergroten van overstromingsveerkracht. Hierbij lag de nadruk zowel op het procesontwerp als op de programma-activiteiten. Anderzijds worden in het tweede deel van deze studie de essentiële institutionele condities voor inclusieve planning van overstromingsveerkracht geanalyseerd. Hiervoor wordt het '*Institutional Analysis and Development*' (IAD) raamwerk gebruikt om twee internationale programma's voor de opbouw van veerkracht in Zuidoost-Azië te analyseren: het Mekong Delta Plan (MDP) in Vietnam en het programma *Water as Leverage for Resilient Cities Asia* (WaL) in Indonesië.

Met bovenstaande onderzoeksopzet geeft deze studie beter inzicht in grensoverschrijdend leren en de rol die internationale programma's voor het stimuleren van veerkracht spelen in deze processen. In de studie worden lessen en aanbevelingen geboden met betrekking tot institutioneel ontwerp dat is gericht op het verminderen van overstromingsrisico's, met name voor ontwikkelingslanden (waaronder Thailand, Indonesië en Vietnam). De analyse van dit onderzoek is gebaseerd op drie kwalitatieve casestudies naar de planning van overstromingsveerkracht in Zuidoost-Azië, namelijk (1) de formulering van veerkrachtbeleid in Bangkok, (2) de ontwikkeling van het Mekong Delta Plan (MDP) in Vietnam en (3) het programma *Water as Leverage for Resilient Cities Asia* (WaL) in Semarang. Deze drie cases werden geselecteerd op basis van hun geografische en sociaal-ecologische kwetsbaarheden voor overstromingen en hun betrokkenheid bij en ervaring in internationale programma's gericht op de opbouw van veerkracht. Hoewel de bevindingen zijn gebaseerd op een specifieke context (zowel in termen van locatie als programma), zijn ze ook relevant voor inclusieve planning van overstromingsveerkracht in de context van zowel ontwikkelde landen als

ontwikkelingslanden. Zowel het MDP als het WaL-programma zijn namelijk geïnitieerd door Nederland als onderdeel van haar internationale waterbeleid en vanwege haar ambitie om een mondiale partner voor wateroplossingen te worden, met name in Zuidoost-Azië. Voor het analyseren van deze cases, wordt kwalitatieve data gebruikt die bestaan uit: 85 diepte-interviews, 33 beleidsdocumenten, 8 participatieve bijeenkomsten en veldbezoeken en 2 focusgroepdiscussies met experts. Een samenvatting van de belangrijkste bevindingen wordt hieronder gegeven.

Interpretatie van het veerkracht-concept en ideeën over waterbeleid

Conceptualisering van inclusieve planning van overstromingsveerkracht

Internationale programma's, zoals het *100 Resilient Cities*-programma, ondersteunen steden over de hele wereld bij het introduceren van het veerkracht-concept voor het verbeteren van hun lokale stedelijke overstromingsrisicobeheer. Als onderdeel van het kritische perspectief dat in deze studie is ontwikkeld, wordt een framing-benadering gehanteerd om de manier te analyseren waarop zowel 'insiders' als 'outsiders' het concept van overstromingsveerkracht in de lokale planningspraktijk interpreteren. In **Hoofdstuk 2** wordt inclusieve planning van overstromingsveerkracht geconceptualiseerd in termen van strategie, proces en resultaat.

Uit de analyse van de strategie voor de opbouw van veerkracht van Bangkok blijkt dat economische groei dominant is geweest bij de interpretatie van veerkracht in stedelijk overstromingsrisicobeheer. Op deze wijze versterkt het veerkrachtbeleid de bestaande infrastructuur voor de bescherming tegen overstromingen in plaats van dat het leidt tot een meer integrale en holistische benadering op de toenemende overstromingsrisico's. Een open proces waarbij stakeholders zijn betrokken, is belangrijk voor het ontwikkelen van inclusieve strategieën voor overstromingsveerkracht, maar toch zijn het voornamelijk internationale experts en overheidsfunctionarissen die zich bezighouden met de strategie van Bangkok voor de opbouw van veerkracht. Er zijn beperkte mogelijkheden voor andere belanghebbenden, zoals lokale gemeenschappen en maatschappelijke organisaties, – de 'outsiders' – om deel te nemen aan de ontwikkeling van het beleid van de stad om veerkracht te stimuleren. Bij de verwachte resultaten zijn het de economische resultaten die voornamelijk geprioriteerd worden. Er is weinig aandacht voor de samenhangende maatschappelijke effecten van overstromingsrisico's en bestaande

Summary

technische strategieën tegen overstroming. In Hoofdstuk 2 wordt dan ook betoogd dat een focus op enkel economisch resultaat en de bescherming tegen overstromingen van economisch belangrijke gebieden – zonder daarbij rekening te houden met aanhoudende fysieke en sociale kwetsbaarheden – het voor steden moeilijker zal maken om opgewassen te zijn tegen de groeiende overstromingsrisico's. Het verwaarlozen van sociale rechtvaardigheid bij de planning van overstromingsveerkracht zou dan kunnen leiden tot grotere ongelijkheid wat betreft overstromingskwetsbaarheden. Deze uitkomst van het onderzoek is relevant voor zowel ontwikkelingslanden als ontwikkelde landen. Een inclusieve aanpak, waarbij lokale ideeën en meningen worden opgenomen, moet daarom worden bevorderd in het beleid inzake stedelijke overstromingsveerkracht.

Vertaling van waterbeleid van een ontwikkeld land naar een ontwikkelingsland

De Nederlandse overheid heeft zich in veel landen, onder meer in Zuidoost-Azië, actief bezig gehouden met de aanpak van overstromingsbestendigheid en oplossingen voor waterbeleid. **Hoofdstuk 3** richt zich op de vertaling van het waterbeleid van Nederland naar Vietnam. De vertaling van waterbeleid is een proces dat inherent complex, dynamisch en politiek is. In lijn met het kritische perspectief van deze studie, is opnieuw een framing benadering gebruikt om enerzijds te reconstrueren hoe ideeën over waterbeleid tot stand komen en worden gepresenteerd als mondiale wateroplossingen, en anderzijds hoe die mondiale wateroplossingen vervolgens worden geïnterpreteerd en ingevuld in de lokale waterplanningspraktijk. In dit onderzoek worden vervolgens vier belangrijke dimensies in de vertaling van mondiale wateroplossingen onderscheiden.

De eerste dimensie benadrukt de rol van Nederlandse experts, consultants en academici op het gebied van waterbeleid bij het definiëren van de betekenis van mondiale waterproblemen en het promoten van bepaalde waterbeleidsideeën als mondiale wateroplossingen. Dit resulteert in de ontwikkeling van een internationaal waterbeleidsframe, in dit geval het Nederlandse deltamanagement frame. De tweede dimensie betreft de strategische samenwerking tussen Nederlandse consultants, experts en diplomaten en internationale organisaties, evenals de oprichting van mondiale platformen voor het positioneren van het Nederlandse deltamanagement frame in mondiale waterbeleidsprogramma's. De derde dimensie illustreert de aanpassing van de internationale waterbeleidsideeën voor specifieke lokale wateroplossingen – met andere woorden, het creëren van een lokaal-specifiek

waterbeleidsframe. In dit geval is het Mekong deltamanagement frame gecreëerd, dat zich richt op de economische ontwikkeling van de agro-industrie in de deltaregio. De vierde en laatste dimensie laat zien hoe groot de uitdagingen zijn bij het verankeren van de kernbegrippen van het Nederlandse deltamanagement frame in de lokale waterplanningspraktijk, zoals 'collaboratieve governance' en 'scenarioplanning'. **Hoofdstuk 3** laat zien dat deze kernbegrippen niet samen met de lokale stakeholders zijn ontwikkeld. Als gevolg hiervan is er een gebrek aan lokale bereidheid en acceptatie van de aanbevelingen van zowel het Nederlandse als het Mekong deltamanagement frame. Hoewel de implementatie van het Mekong Delta Plan financiële en technische ondersteuning heeft gekregen van veel internationale ontwikkelingspartners, zijn continu leren en langdurige betrokkenheid bij de lokale waterplanningspraktijk belangrijke vereisten voor de realisatie van de ontwikkelde ideeën voor waterbeleid.

Institutioneel ontwerp voor een inclusieve planning van overstromingsveerkracht

Lokale institutionele capaciteit voor adaptatie aan overstromingen

Proactieve en integrale strategieën voor overstromingsveerkracht zijn in de praktijk vaak moeilijk te realiseren. Een faciliterend institutioneel ontwerp is daarom een vereiste voor inclusieve planning van overstromingsveerkracht. In **Hoofdstuk 4** wordt besproken hoe een internationaal programma zoals *Water as Leverage for Resilient Cities Asia* (WaL) de opbouw van lokale institutionele capaciteit voor de ontwikkeling en implementatie van adaptatiestrategieën voor overstromingen zou kunnen stimuleren. Hiertoe heeft deze studie een conceptueel kader ontwikkeld dat zich richt op drie elementen van institutioneel kapitaal: intellectueel kapitaal, sociaal kapitaal en politiek kapitaal.

Voor het vergroten van intellectueel kapitaal faciliteert het WaL-programma in Semarang een leerproces voor het delen en co-creëren van ideeën en oplossingen voor overstromingsveerkracht. Hiervoor heeft het programma een 'soft space' gecreëerd waarin de interactie met belanghebbenden plaats kan vinden. Dit proces is belangrijk voor het bepalen van de lokale kwetsbaarheden op het gebied van overstromingen en klimaatverandering, en voor het formuleren van innovatieve oplossingen. Hoewel het niet het primaire doel van het programma is, wordt in dit hoofdstuk gesteld dat het inbedden van dit proces in de lokale planningscontext – inclusief een ontwerpwedstrijd, op ontwerp-gebaseerd onderzoek en

Summary

ontwerpworkshops – de ontwikkeling van lokale intellectuele institutionele capaciteit kan versterken. In termen van sociaal kapitaal slaagt het WaL-programma erin om internationale en lokale ruimtelijke ontwerpers, academici, stedenbouwkundigen, waterdeskundigen, maatschappelijk werkers, internationale en lokale NGO's, en internationale en lokale financiële instellingen samen te brengen. Dit hoofdstuk benadrukt echter ook de noodzaak om de mogelijkheden voor de lokale NGO's met beperkte middelen te vergroten zodat ook zij kunnen deelnemen aan dit '*resilience by design*'-proces. Wat het politieke kapitaal betreft, zijn het eigenaarschap en de ondersteuning van de lokale overheid en de actieve bijdrage van de '*change agents*' van de stad, waaronder het lokale 'resilience team', belangrijk voor de implementatie van de ontwikkelde adaptatiestrategieën. Hoewel het WaL-programma de lokale stakeholders en multidisciplinaire ontwerpteams kan ondersteunen bij het co-creëren en ontwerpen van lokale strategieën voor het vergroten van de overstromingsveerkracht, blijven de lokale capaciteiten om deze strategieën om te zetten in projectimplementatie beperkt. Met name in het geval van Semarang belemmert de ontbrekende formele schakel met beleidsmakers van de nationale overheid de ontwikkeling, financiering en implementatie van de voorstellen.

Institutionele condities voor inclusieve planning van overstromingsveerkracht

Naast de ontwikkeling van institutionele capaciteit, zijn stimulerende institutionele condities een ander belangrijk element van het kritische perspectief dat in deze studie is ontwikkeld. Op basis van het IAD-raamwerk wordt in **Hoofdstuk 5** onderzocht hoe internationale veerkrachtprogramma's essentiële condities kunnen realiseren voor de ontwikkeling en implementatie van inclusieve overstromingsveerkrachtstrategieën. Met de vergelijkende analyse van het MDP in Vietnam en het WaL-programma in Semarang zijn vier belangrijke institutionele condities geïdentificeerd die essentieel zijn voor de inclusieve planning van overstromingsveerkracht.

De eerste essentiële conditie heeft betrekking op de lokale bereidheid en het eigenaarschap van zowel de ontwikkelde oplossingen als het inclusieve planning- en ontwerpproces voor het vergroten van overstromingsveerkracht. De bevindingen tonen aan dat de implementatie van oplossingen afhankelijk is van een sterke politieke wil en eigenaarschap van de overheidsinstanties op zowel lokaal als nationaal niveau. Daarnaast is inclusieve en open betrokkenheid van alle betrokken stakeholders belangrijk voor het vergroten van de lokale bereidheid en het

eigenaarschap van zowel de ontwikkelde oplossingen voor overstromingsveerkracht als de ontwerp- en planningsprocessen daarvan. De tweede conditie betreft de afstemming tussen enerzijds de oplossingen voor overstromingsveerkracht en anderzijds de formele plannings- en beleidsvormingsprocessen. In dit hoofdstuk wordt voorgesteld om de strategieën voor overstromingsveerkracht te integreren in het bestaande stedelijke beleid. De derde conditie richt zich op de financiering en uitvoering. Open en duidelijke communicatie over financieringsmogelijkheden en -beperkingen is essentieel voor internationale veerkrachtprogramma's. De verkenning van gedeelde lokale verantwoordelijkheden en de bereidheid om de oplossingen van lokale en nationale beleidsactoren aan te nemen, te financieren en uit te voeren zijn cruciaal. De vierde en laatste conditie betreft het leren ten behoeve van transformatieve verandering. De aspiratie van deze beleidsverandering op lange termijn vereist het aanmoedigen en koesteren van institutionele verandering en innovatie door middel van leer- en samenwerkingsprocessen. Internationale veerkrachtprogramma's kunnen het leren en experimenteren met nieuwe oplossingen en ideeën aanmoedigen. Tegelijkertijd tonen de bevindingen ook dat de integratie van lokale kennis, ervaring en inzicht de sleutel is tot het bevorderen van een gevoel van lokaal eigenaarschap en de bereidheid om oplossingen voor overstromingsveerkracht in de praktijk over te nemen en te implementeren.

Conclusies en aanbevelingen

Door een kritisch perspectief op onderzoek naar overstromingsveerkracht te introduceren, wordt in deze studie de nadruk gelegd op de sociale rechtvaardigheidsdimensie van stedelijke overstromingsveerkracht. Om te voorkomen dat de ongelijkheid in de kwetsbaarheid voor overstromingen bij lokale groepen verder wordt versterkt, moeten beleidsmakers en experts op het gebied van stedelijk beleid en veerkracht zich richten op *sociale rechtvaardigheid* en *inclusiviteit* bij de planning van overstromingsveerkracht. Daartoe, gebaseerd op deze studie, kan de nadruk worden gelegd op het organiseren van een inclusief proces om de meningen van een breed scala aan stakeholders mee te nemen en om alle betrokken actoren in staat te stellen ideeën te ontwikkelen die bijdragen aan de planning van inclusieve stedelijke overstromingsveerkracht. Een dergelijke inclusieve benadering kan ook bij de aanpak van informele stedelijke nederzettingen en hun bewoners worden overwogen. In plaats van enkel te focussen op technische maatregelen en juridische handhaving om dit probleem op te lossen, moet ook het sociaal-inclusieve

Summary

perspectief worden meegenomen, met name in steden in ontwikkelingslanden. Met andere woorden, naast het verminderen van stedelijke overstromingsrisico's en het herstel van het stedelijke watersysteem, moeten ook economische gelijkheid en het verbeteren van sociale huisvesting worden bevorderd.

In deze studie worden de belangrijke rol van lokale beleidsactoren en hun capaciteiten erkend en worden de toepassing en het potentieel van een '*resilience by design*'-proces benadrukt om integrale en inclusieve resultaten te garanderen bij de planning voor overstromingsveerkracht. Deze studie laat zien dat een dergelijk '*resilience by design*'-proces een tijdsinvestering vereist in het creatieve proces, en dat ontwerpgebaseerd onderzoek, de ontwerpwedstrijd, de co-creatie en het ontwerp van oplossingen, en de ontwikkeling van voorstellen voor overstromingsveerkracht hierin essentieel zijn. Op basis van inzichten uit de evolutionaire interpretatie van veerkracht, blijkt dat het ontwikkelen van nieuwe netwerken en coalities tussen stakeholders een belangrijk element is van institutionele transformatie. Het 'resilience team' van een stad bestaat uit lokale academici, NGO-medewerkers en beleidsfunctionarissen; dit team kan een belangrijke rol spelen als '*change agent*' bij het faciliteren van de samenwerking met lokale overheden en gemeenschappen. Bovendien worden in de casestudie de institutionele uitdagingen met betrekking tot de implementatie van een ontwerpgebaseerd planningsproces aangetoond. Voortdurende politieke steun van de officiële besluitvormers in de begunstigde landen is van cruciaal belang voor het verankeren van de ontwikkelde oplossingen in de lokale en nationale institutionele context en voor het activeren van de financiering en uitvoering van projecten. Daarom stelt deze studie dat de actieve betrokkenheid van lokale overheden bij het ontwerp van de oplossingen belangrijk is om de bruikbaarheid en compatibiliteit van de voorstellen voor overstromingsveerkracht in de formele administratieve context te waarborgen.

Verder wordt in deze studie gereflecteerd op grensoverschrijdend leren en op de vertaling van mondiale beleidsideeën over het aanpakken van de waterproblematiek in de context van verstedelijkte deltaregio's in ontwikkelingslanden. Er zijn zowel kansen als risico's verbonden aan het gebruik van mondiale wateroplossingen bij grensoverschrijdend leren om lokale waterproblemen aan te pakken. Wat betreft de kansen kan het vinden van mondiale wateroplossingen helpen bij het stimuleren van de overdracht van kennis en de organisatie van een gezamenlijk leerproces. Ten aanzien van de risico's kan een exclusieve focus op deze mondiale wateroplossingen zonder expliciet rekening te houden met het vertaal- en communicatieproces in de lokale context leiden tot het verlies van sociale verbindingen in de praktijk. Het bevorderen van kant-en-klare oplossingen kan de

lokale context veronachtzamen, evenals de noodzaak van een sociaal proces bij het stimuleren van het begrip en de lokale vertaling en aanpassing van deze mondiale oplossingen. Daarom wordt in deze studie gesteld dat een sociaal en inclusief proces nodig is dat zich richt op het opbouwen van een gedeeld begrip en lokale institutionele capaciteiten, alsmede het gezamenlijk identificeren van lokale risico's en het co-creëren van potentiële oplossingen voor het vergroten van overstromingsveerkracht.

Concluderend, er wordt in deze studie opgeroepen tot een institutionele transformatie rondom de overstromingsrisico's en de maatschappelijke gevolgen van water- en klimaatuitdagingen in de context van verstedelijkte regio's in ontwikkelingslanden. Voor internationale veerkrachtprogramma's is het belangrijk om te profiteren van bestaande lokale ervaring en kennis, en om lokale veerkrachtnetwerken en -initiatieven te versterken en verder uit te bouwen. De overweging en het diepere begrip van de lokale institutionele, planning- en culturele contexten zijn belangrijk bij het op maat maken van de aanpak van internationale veerkrachtprogramma's en de aanpassing daarvan aan lokale omstandigheden en specifieke kenmerken. Voor steden in Zuidoost-Azië betekent planning voor inclusieve overstromingsveerkrachtige steden het verkennen van nieuwe mogelijkheden en het waarborgen van sociale rechtvaardigheid en inclusiviteit in water- en milieubeleid en -planning. Steden in deze regio kunnen beginnen met het verkennen van nieuwe vormen van partnerschap en samenwerkingsplatforms, waaronder het verkennen en gebruiken van expertise en middelen van verschillende actoren en stakeholders. Door een samenwerkingsplatform te stimuleren, kunnen steden bevorderen dat er geëxperimenteerd wordt met nieuwe soorten strategieën die de aanpassing aan overstromingen zullen verbeteren, en kunnen ze kansen zoeken en vinden om deze inclusieve strategieën voor overstromingsveerkracht te integreren in bredere stedelijke beleidsprogramma's. In deze studie worden toekomstige onderzoekers uitgenodigd om de verschillende mogelijkheden te verkennen van inclusieve planning voor overstromingsveerkrachtige steden als een middel om sociale rechtvaardigheid en inclusiviteit te stimuleren.

Summary

บทสรุปภาษาไทย

บทนำ

หลายเมืองในภูมิภาคเอเชียตะวันออกเฉียงใต้ประสบปัญหาจากผลกระทบจากความเสี่ยงอุทกภัยและการเปลี่ยนแปลงของสภาพภูมิอากาศ ผู้ที่อาศัยในหลายพื้นที่ในเมืองได้รับผลกระทบเหล่านี้แตกต่างกัน ชุมชนผู้มีรายได้น้อยได้รับผลกระทบมากที่สุดจากอุทกภัยและการเปลี่ยนแปลงของสภาพภูมิอากาศนี้ ชุมชนเหล่านี้อาศัยอยู่ในพื้นที่ที่เปราะบางและล่อแหลมต่อผลกระทบจากอุทกภัยและมีความสามารถและทรัพยากรที่จะรับมือกับความเสี่ยงภัยพิบัติอย่างจำกัด ถึงแม้ภูมิภาคเอเชียตะวันออกเฉียงใต้ได้รับผลกระทบและความสูญเสียทางเศรษฐกิจและสังคมอย่างมีนัยยะสำคัญในช่วงทศวรรษที่ผ่านมา ประเทศในภูมิภาคนี้ยังขาดมาตรการของภาครัฐเพื่อลงทุนและกำหนดแนวทางเพื่อลดความเสี่ยงจากอุทกภัยที่ยั่งยืนและสอดคล้องกับวิถีชีวิตทั้งในปัจจุบันและสำหรับอนาคต หลายเมืองยังพึ่งพิงมาตรการเชิงโครงสร้างเป็นหลัก เช่น โครงสร้างการป้องกันน้ำท่วม ถึงแม้มาตรการเชิงโครงสร้างการจัดการอุทกภัยดังกล่าวมีความสำคัญสำหรับเมือง โครงสร้างและมาตรการที่เน้นการป้องกันอุทกภัยในปัจจุบันถูกวิจารณ์และชี้ถึงถึงผลเสียทางด้านสิ่งแวดล้อม การก่อให้เกิดความไม่เท่าเทียมกันของชุมชนที่ไม่ได้รับการป้องกัน และข้อด้อยที่ไม่ยืดหยุ่นพอและไม่สามารถตอบสนองต่อความเปลี่ยนแปลงทางธรรมชาติ การให้ความสำคัญกับความสามารถในการพร้อมรับและปรับตัวต่ออุทกภัยในระดับเมือง (flood resilient cities) จึงได้รับความสนใจมากขึ้นในหลายเมืองทั้งในประเทศที่พัฒนาแล้วและประเทศกำลังพัฒนา การวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรม (Planning for inclusive urban flood resilience) จึงเป็นสิ่งจำเป็นต่อการพัฒนามาตรการที่คำนึงถึงองค์รวมความเสี่ยงต่อภัยพิบัติและอรรถประโยชน์ของโครงการจัดการน้ำและพัฒนาพื้นที่ในเขตเมือง เช่นการออกแบบเพื่อเพิ่มที่รับน้ำของชุมชน ผ่านงานออกแบบสวนสาธารณะและที่อยู่อาศัยที่มีความยืดหยุ่นและพร้อมปรับตัวสภาพอากาศที่เปลี่ยนแปลง ในบริบทของเมืองในภูมิภาคเอเชียตะวันออกเฉียงใต้ มาตรการเหล่านี้ยังถูกพัฒนาและนำไปดำเนินงานอย่างเป็นรูปธรรม มาตรการเหล่านี้ยังประสพกับข้อจำกัดทั้งทางด้านนโยบายและโครงสร้างการจัดการภาครัฐในการออกแบบและนำไปปฏิบัติ การเปลี่ยนผ่านโครงสร้างเชิงการจัดการ (Institutional

transformation) จึงมีบทบาทสำคัญที่จะช่วยพัฒนาและดำเนินมาตรการเพื่อรับมือและปรับตัวต่อ ความความเสี่ยงอุทกภัยแบบองค์รวม

ในปัจจุบันทั่วโลกให้ความสนใจกับการวางแผนเมืองเพื่อพร้อมรับและปรับตัวกับอุทกภัยใน นโยบายและแผนด้านการจัดการและพัฒนาเมือง ผู้ออกนโยบายมีความสนใจและมีประสบการณ์จาก การเข้าร่วมและแลกเปลี่ยนความรู้ผ่านความร่วมมือระหว่างประเทศด้านการจัดการความเสี่ยงเพื่อ พัฒนาแผนและนโยบายเพื่อพร้อมรับและปรับตัวต่อภัยพิบัติ โครงการและความร่วมมือดังกล่าวยัง ส่งเสริมการนำแนวคิดเกี่ยวกับการพร้อมรับและปรับตัว (resilience concept) และการแปลนโยบาย การจัดการน้ำ (water policy translation) จากระดับโลกสู่การวางแผนเมืองเพื่อพร้อมรับและ ปรับตัวต่ออุทกภัยและแนวทางการจัดการน้ำระดับท้องถิ่น แนวทางการแก้ไขปัญหาจัดการน้ำที่ได้รับ การยอมรับในระดับโลกเช่น การบริหารจัดการน้ำของเนเธอร์แลนด์ ได้ถูกยกเป็นแนวทางการพัฒนา มาตรการเพื่อพร้อมรับและปรับตัวต่ออุทกภัยและการจัดการน้ำและชายฝั่งอย่างมีประสิทธิภาพและ ยั่งยืน การนำแนวคิดระดับโลกต่างเหล่านี้สู่การปฏิบัติในระดับประเทศและท้องถิ่นเป็นส่วนหนึ่งที่จะช่วย ให้ประเทศบรรลุเป้าหมายการพัฒนาที่ยั่งยืนแห่งสหประชาชาติ ในเป้าหมายที่ 11 เพื่อทำให้เมือง และการตั้งถิ่นฐานของมนุษย์มีความครอบคลุม ปลอดภัย มีภูมิคุ้มกันและยั่งยืน (Make cities and human settlements inclusive, safe, resilient and sustainable) ดังนั้นการวางแผนเมืองเพื่อ พร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมจึงต้องให้ความสำคัญกับผลกระทบทางธรรมชาติและ สังคมต่อชุมชนที่เปราะบางและต้องการความช่วยเหลือ ประเด็นเกี่ยวกับความเป็นธรรมและความ ยุติธรรมทางสังคมจึงเป็นสิ่งสำคัญกับการวางแผนและดำเนินงานจัดการเมืองเพื่อพร้อมรับและ ปรับตัวต่ออุทกภัย งานวิจัยนี้จึงมุ่งเน้นการศึกษาการเปลี่ยนผ่านโครงสร้างเชิงการจัดการเพื่อการ วางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมและศึกษาบทบาทของโครงการ ระหว่างประเทศที่สนับสนุนกระบวนการนี้

ถึงแม้ปัจจุบันจะมีการนำแนวคิดพร้อมรับและปรับตัว resilience สู่การพัฒนาแผนและ นโยบายอย่างแพร่หลาย การตีความแนวคิด resilience ในทางวิชาการยังมีข้อจำกัดหลายประการ งานวิจัยนี้ใช้มุมมองเชิงวิพากษ์เพื่อศึกษาข้อจำกัดและขยายผลการศึกษาเกี่ยวกับการตีความแนวคิด และแนวทางออกนโยบายการจัดการในสามประการ ประการแรก การตีความแนวคิด resilience และแนวทางนโยบายจัดการน้ำยังขาดมุมมองเชิงอำนาจและกระบวนการทางการเมืองในการ ออกแบบมาตรการและการกำหนดนโยบาย งานวิจัยนี้จึงมุ่งเน้นการพัฒนากรอบการศึกษา framing

Summary

analysis ที่คำนึงถึงเสียงสะท้อนและประเด็นข้อมูลสำคัญจากผู้ที่มีส่วนเกี่ยวข้องซึ่งเป็น “ผู้อยู่วงใน” (insiders) ที่ประกอบด้วยกลุ่มผู้ออกนโยบาย ผู้เชี่ยวชาญและผู้ให้คำปรึกษาภาครัฐ และผู้ที่มีส่วนเกี่ยวข้องซึ่งเป็น “ผู้อยู่นอกวงใน” (outsider) ซึ่งเป็นผู้ที่มีส่วนได้ส่วนเสียในนโยบาย กลุ่มภาคประชาสังคมและ NGO และผู้นำหรือสมาชิกในชุมชน การวิเคราะห์ข้อมูลจากสองกลุ่มที่ต่างกันนี้มีความสำคัญในการศึกษาประเด็นความเป็นธรรมและความยุติธรรมทางสังคมจากมาตรการลดความเสี่ยงอุทกภัย ประการที่สอง การตีความแนวคิด resilience เพื่อนำไปสู่ระดับปฏิบัติงานยังมีความยากอยู่หลายประการ ในทางด้านการดำเนินงาน การตีความแนวคิด resilience จึงมุ่งเน้นการลงทุนสร้างมาตรการเชิงโครงสร้างเพื่อป้องกันอุทกภัยมากกว่าเพื่อแสวงหาและพัฒนามาตรการอื่นๆที่จะช่วยส่งเสริมการปรับตัวของเมืองและชุมชนอย่างยั่งยืน การใช้มุมมองเชิงวิพากษ์จึงจำเป็นเพื่อวิเคราะห์การตีความแนวคิด resilience ในการออกแบบมาตรการชนิดต่างๆและเพื่อวิเคราะห์การเจรจาหาความหมาย (negotiation of meaning) ของวิธีการและเป้าหมายการพัฒนาเพื่อพร้อมรับและปรับตัวต่ออุทกภัยและการจัดการน้ำที่สอดคล้องกับวิถีปัจจุบันและอนาคต ประการที่สามซึ่งเป็นประการสุดท้ายคือการศึกษาในแง่กระบวนการแนวทางการวางแผนและกำหนดนโยบายเพื่อสร้างความพร้อมในการรับมือและปรับตัวกับอุทกภัยนั้นยังมียุ่อย่างจำกัด โดยเฉพาะการศึกษากระบวนการออกแบบนโยบายและวางแผนในบริบทเอเชียตะวันออกเฉียงใต้ จึงจำเป็นต้องศึกษาให้เกิดความเข้าใจอย่างลึกซึ้งถึงกระบวนการที่จำเป็นต่อการเปิดกระบวนการมีส่วนร่วมอย่างเป็นธรรมในมาตรการและนโยบายระดับชาติและท้องถิ่น การวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมจำเป็นต้องคำนึงถึงการออกแบบโครงสร้างการจัดการเชิงสถาบันเพื่อริเริ่มโครงการจัดทำและรับรองแผนและดำเนินงานมาตรการลดความเสี่ยงและปรับตัวต่ออุทกภัย งานวิจัยนี้ศึกษาผ่านมุมมองเชิงวิพากษ์เพื่อวิเคราะห์การออกแบบเชิงสถาบันทั้งในเชิงการสร้างศักยภาพระดับท้องถิ่นและในเชิงเงื่อนไขสถาบันเพื่อวางแผนมาตรการในระยะยาว โดยเน้นการมองถึงประเด็นการศึกษาการเปลี่ยนผ่านโครงสร้างเชิงการจัดการพัฒนาเพื่อการวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรม

การออกแบบวิธีการวิจัย

คำถามวิจัยหลักของหนังสือเล่มนี้คือ **การเปลี่ยนผ่านโครงสร้างเชิงการจัดการเพื่อการวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมในภูมิภาคเอเชียตะวันออกเฉียงใต้จะเกิดขึ้นได้อย่างไร และโครงการระหว่างประเทศจะสามารถสนับสนุนกระบวนการนี้อย่างไร**

คำถามวิจัยหลักแบ่งออกเป็นคำถามวิจัยย่อยสี่คำถามตามโครงสร้างของงานวิจัยเล่มนี้

1. กรอบความคิดการวางแผนเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรม Inclusive flood resilience planning
เราสามารถทำความเข้าใจเกี่ยวกับนโยบายเพื่อพร้อมรับและปรับตัวของเมืองที่เกี่ยวข้องกับการลดความเสี่ยงอุทกภัยในเมืองของประเทศที่กำลังพัฒนาได้อย่างไร
2. การแปลนโยบายการจัดการน้ำจากประเทศที่พัฒนาแล้วสู่ประเทศกำลังพัฒนา water policy translation
แนวคิดการแก้ปัญหาการจัดการน้ำได้ถูกถ่ายโอนระหว่างประเทศอย่างไร และแนวคิดนี้มีบทบาทต่อการพัฒนาวิธีการแก้ปัญหาการจัดการน้ำระดับท้องถิ่นของประเทศปลายทางได้อย่างไร
3. การส่งเสริมศักยภาพของท้องถิ่นเพื่อปรับตัวต่อความเสี่ยงอุทกภัย
โครงการระหว่างประเทศจะสามารถเสริมศักยภาพของท้องถิ่นในการพัฒนาและดำเนินมาตรการเพื่อปรับตัวต่อความเสี่ยงอุทกภัยได้อย่างไร
4. เจือนใจเชิงสถาบันเพื่อสร้างสามารถวางแผนเพื่อพร้อมรับและปรับตัวต่อความเสี่ยงอุทกภัย
โครงการระหว่างประเทศจะสามารถออกแบบเจือนใจเชิงสถาบันแบบใดเพื่อส่งเสริมส่งเสริมความสามารถในการวางแผนและดำเนินงานมาตรการที่พร้อมรับและปรับตัวต่อความเสี่ยงอุทกภัย

งานวิจัยนี้ได้ออกแบบกรอบการศึกษาโดยใช้มุมมองเชิงวิพากษ์เพื่อศึกษาความซับซ้อนของกระบวนการวางแผนเพื่อพร้อมรับและปรับตัวต่อความเสี่ยงอุทกภัย งานวิจัยนี้จึงให้ความสำคัญ

Summary

เกี่ยวกับกระบวนการที่เน้นการมีส่วนร่วมอย่างเป็นธรรมและเน้นการวิเคราะห์การใช้ภาษาและการให้ความหมายของเป้าหมายและมาตรการเพื่อเตรียมพร้อมและรับมือกับความเสี่ยงอุทกภัย งานวิจัยนี้ยังศึกษากระบวนการพัฒนาศักยภาพของท้องถิ่นที่จำเป็นและเงื่อนไขเชิงสถาบันที่สำคัญต่อความสามารถเพื่อรับมือและปรับตัวต่ออุทกภัยที่คำนึงถึงความเป็นธรรมทางสังคม

งานวิจัยนี้แบ่งออกเป็นการศึกษาสองส่วนหลัก ส่วนแรกคือการศึกษาการตีความแนวคิดนโยบายการจัดการน้ำระดับโลกและแนวคิด resilience สู่แนวทางการวางแผนระดับท้องถิ่นโดยใช้แนวทางการศึกษากรอบแนวคิด framing approach เพื่อวิเคราะห์สองกรณีศึกษาในเอเชียตะวันออกเฉียงใต้ กรณีศึกษาแรกคือเพื่อใช้การพัฒนาและดำเนินนโยบายเพื่อเพิ่มความสามารถในการพร้อมรับและปรับตัวต่อความเสี่ยงอุทกภัยในเมืองของกรุงเทพมหานคร กรุงเทพมหานครได้เข้าร่วมโครงการ 100 Resilient Cities พร้อมอีกกับหลายเมืองทั่วโลก โดยกรุงเทพมหานครได้กำหนดนโยบายเพื่อเป็นแนวทางในการส่งเสริมการพร้อมรับและปรับตัวต่อความเสี่ยงภัยพิบัติ Bangkok Resilience Strategy หลังจากช่วงเหตุการณ์อุทกภัยในปี พ.ศ. 2554 กรณีศึกษาที่สองคือการใช้วิเคราะห์เพื่อศึกษาการเปลี่ยนนโยบายแนวทางการจัดการน้ำของเนเธอร์แลนด์สู่พื้นที่เมืองในเอเชียตะวันออกเฉียงใต้นั้นคือการสร้างแผนแม่โขงเดลต้า (Mekong Delta Plan) ในเวียดนาม การศึกษากระบวนการให้ความหมาย meaning-making เป็นวิธีการศึกษาที่สำคัญเพื่อให้เข้าใจการเปลี่ยนนโยบายการจัดการน้ำจากประเทศหนึ่งสู่อีกประเทศหรือท้องถิ่นอื่น งานวิจัยนี้จึงใช้มุมมองการวางกรอบความคิด framing perspective เพื่อศึกษาการเดินทางของแนวคิดและการถ่ายโอนนโยบายเพื่อเป็นแนวทางในการแก้ปัญหาการจัดการน้ำในระดับชาติและท้องถิ่นของประเทศปลายทาง

ส่วนที่สองคือการศึกษาการออกแบบเชิงสถาบันเพื่อวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมและแนวทางการดำเนินโครงการระหว่างประเทศเพื่อช่วยให้ออกแบบมาตรการจัดการความเสี่ยงอุทกภัยแบบองค์รวม โดยใช้การศึกษาการออกแบบเชิงสถาบันในสองกรณีศึกษา คือ กรณีศึกษาที่หนึ่งคือเพื่อวิเคราะห์การเสริมสร้างศักยภาพต้องการพัฒนาและดำเนินมาตรการเพื่อรับมือและปรับตัวต่อความเสี่ยงอุทกภัยแบบองค์รวมโดยศึกษาโครงการ the Water as Leverage for Resilient Cities Asia (WaL) program ในเมืองซามารัง อินโดนีเซีย โครงการ Water as Leverage ริเริ่มโดยรัฐบาลเนเธอร์แลนด์เพื่อแนะนำกระบวนการเน้นการออกแบบเพื่อรับมือกับความเสี่ยงภัยพิบัติ Resilience by design โดยริเริ่มนำกระบวนการนี้มาดำเนินโครงการในสาม

เมืองในทวีปเอเชียซึ่งประกอบด้วย เมืองเซินใน อินเดีย เมืองคุลนา บังคลาเทศ และเมืองซามารัง อินโดนีเซีย งานวิจัยนี้พัฒนากรอบการวิเคราะห์กระบวนเชิงออกแบบเพื่อรับมือกับความเสี่ยงภัยพิบัติ หรือ Resilience by design โดยศึกษาผลลัพธ์และการดำเนินงานของโครงการในด้านการเสริมสร้าง ศักยภาพของถิ่น กรณีศึกษาที่สองมุ่งเน้นการวิเคราะห์เงื่อนไขเชิงสถาบันที่จำเป็นต่อการวางแผนเมือง เพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมชาติ โดยใช้กรอบแนวคิดการวิเคราะห์และพัฒนาเชิง สถาบัน Institutional Analysis and Development framework หรือ IAD เพื่อเป็นกรอบการ วิเคราะห์เชิงเปรียบเทียบสองโครงการระหว่างประเทศที่ดำเนินโครงการในเอเชียตะวันออกเฉียงใต้ อันประกอบด้วยการพัฒนาแผนแม่โขงเดลต้า Mekong Delta Plan ในเวียดนามและโครงการ Water as Leverage ในเมืองซามารัง อินโดนีเซีย

การออกแบบงานวิธีการทางวิจัยนี้มีเป้าหมายเพื่อเพิ่มความเข้าใจเกี่ยวกับการเรียนรู้ข้าม พรมแดนและบทบาทของโครงการระหว่างประเทศที่ผลักดันการเรียนรู้เพื่อเปลี่ยนแปลงการวางแผน แนวนโยบาย ผลลัพธ์จากการศึกษานี้เพื่อสังเคราะห์บทเรียนและนำเสนอข้อเสนอแนะเชิงนโยบาย เพื่อการวางแผนและการออกแบบเชิงสถาบันเพื่อลดความเสี่ยงในประเทศแถบภูมิภาคเอเชีย ตะวันออกเฉียงใต้เช่นไทย เวียดนามและอินโดนีเซีย งานวิจัยใช้วิธีการวิเคราะห์เชิงคุณภาพโดยศึกษา สามกรณีศึกษาที่เกี่ยวข้องกับการวางแผนเพื่อลดความเสี่ยง ซึ่งประกอบด้วย (1) การกำหนด นโยบายเพื่อเป็นแนวทางในการส่งเสริมความพร้อมรับและปรับตัวต่อความเสี่ยงภัยพิบัติ Bangkok Resilience Strategy (2) การสร้างแผนแม่โขงเดลต้า Mekong Delta Plan ในเวียดนาม (3) โครงการ Water as Leverage ในเมืองซามารัง อินโดนีเซีย การเลือกสามกรณีศึกษานี้คำนึงถึง ปัจจัยคล้ายกันในด้านลักษณะที่ตั้งทางภูมิศาสตร์และความเปราะบางทางนิเวศวิทยาสังคม (socio-ecological vulnerabilities) ต่ออุทกภัยและประสบการณ์เข้าร่วมโครงการและความร่วมมือ ระหว่างประเทศ ผลการศึกษาจากกรณีศึกษาเน้นการอธิบายทั้งในเชิงบริบทเฉพาะของพื้นที่และ โครงการและการการอธิบายบริบทนโยบายในมุมมองกว้างเกี่ยวกับวางแผนเมืองเพื่อพร้อมรับและปรับตัว ต่ออุทกภัยอย่างเป็นธรรมชาติทั้งในบริบทประเทศที่พัฒนาแล้วและประเทศที่กำลังพัฒนา อีกหนึ่งหนึ่ง ความสัมพันธ์ของกรณีศึกษาในงานวิจัยนี้คือบทบาทของเนเธอร์แลนด์ในฐานะผู้ริเริ่มและสนับสนุน แผนแม่โขงเดลต้าและโครงการ Water as Leverage ซึ่งเป็นส่วนหนึ่งของนโยบายระหว่างประเทศ ด้านส่งเสริมและเป็นพันธมิตรในการแก้ไขปัญหาการจัดการน้ำโดยเพื่อความร่วมมือกับประเทศใน เอเชียตะวันออกเฉียงใต้ งานวิจัยได้เก็บและวิเคราะห์ข้อมูลเชิงคุณภาพ ที่ประกอบด้วยการสัมภาษณ์

Summary

เชิงลึก 85 ครั้ง เอกสารที่เกี่ยวข้องกับนโยบายและแผน 8 ชิ้น การประชุมร่วมและลงพื้นที่เพื่อสังเกตการณ์ 8 ครั้ง และการจัดสนทนากลุ่มระหว่างผู้เชี่ยวชาญ expert focus group discussion 2 ครั้ง ส่วนตัวไปคือบทสรุปสำคัญจากผลการศึกษาเพื่อตอบคำถามวิจัยย่อยในหนังสือนี้พร้อมทั้งการอ้างอิงจากผลลัพธ์จากแต่ละบท

การศึกษาการตีความแนวคิด resilience และแนวคิดนโยบายการจัดการน้ำ

กรอบความคิดการวางแผนเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรม Inclusive flood resilience planning

โครงการระหว่างประเทศเช่น 100 Resilience Cities program มีบทบาทในการกระตุ้นและส่งเสริมการดำเนินงานเพื่อนำแนวคิด resilience สู่วางแผนนโยบายเพื่อลดความเสี่ยงอุทกภัยในหลายเมืองทั่วโลก งานวิจัยนี้ไข่มุมมองเชิงวิพากษ์เพื่อสร้างแนวทางการวิเคราะห์กรอบแนวคิดเพื่อลดความเสี่ยงอุทกภัย โดยวิเคราะห์การตีความของแนวคิด resilience จากมุมมองของ “ผู้อยู่วงใน” (insiders) ประกอบด้วยกลุ่มผู้ออกนโยบาย ผู้เชี่ยวชาญและผู้ให้คำปรึกษาภาครัฐ และผู้ที่มีส่วนเกี่ยวข้องซึ่งเป็น “ผู้อยู่นอกวงใน” (outsider) ในการบวนการวางแผนเพื่อลดความเสี่ยงอุทกภัย ในบทที่ 2 งานวิจัยนี้ได้วางกรอบแนวคิดวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมออกเป็นสามมิติคือ มาตรการ กระบวนการ และผลลัพธ์

ผลจากการศึกษา การกำหนดนโยบายเพื่อเป็นแนวทางในการส่งเสริมความพร้อมรับและปรับตัวต่อความเสี่ยงภัยพิบัติ Bangkok Resilience Strategy ระบุว่าแนวคิด resilience เน้นการวางกรอบเพื่อพัฒนาเศรษฐกิจเป็นหลัก ซึ่งวิเคราะห์ในมิติของมาตรการจะอธิบายได้ว่านโยบายเพื่อเมืองพร้อมและปรับตัวนี้ให้ความสำคัญถึงมาตรการเชิงโครงสร้างเพื่อป้องกันอุทกภัยมากกว่ามาตรการจัดการความเสี่ยงอุทกภัยแบบองค์รวมและคำนึงถึงความปลอดภัยทางธรรมชาติในแง่กระบวนการวางนโยบาย ถึงแม้ว่าการเปิดการมีส่วนร่วมของผู้มีส่วนได้ส่วนเสียและภาคส่วนที่เกี่ยวข้องเป็นกระบวนการที่สำคัญในการออกแบบมาตรการรับมือกับอุทกภัย ในกรณีนโยบายเพื่อเมืองพร้อมและปรับตัวของกรุงเทพมหานครเน้นการทำงานร่วมกันของผู้เชี่ยวชาญและบุคลากรของรัฐเป็นหลัก ยังขาดการส่งเสริมการมีส่วนร่วมของภาคส่วนอื่น ๆ โดยเฉพาะชุมชนและท้องถิ่นเพื่อร่วมออกแบบนโยบายลดความเสี่ยงนี้ ส่วนในแง่ของการมองถึงผลลัพธ์ของนโยบายยังเน้นการให้

ความสำคัญในมิติทางด้านเศรษฐกิจเป็นหลักมากกว่าการให้ความสำคัญมิติทางสังคมที่ซับซ้อนและเชื่อมโยงกับผลกระทบทั้งจากภัยธรรมชาติและผลกระทบจากมาตรการป้องกันอุทกภัยในปัจจุบัน ในบทนี้ยังเสนอว่าการมุ่งเน้นการพัฒนาแนวนโยบายที่มุ่งเน้นการพัฒนาเศรษฐกิจเป็นหลัก โดยเฉพาะการป้องกันเฉพาะเขตพื้นที่ที่สำคัญทางเศรษฐกิจโดยขาดมุมมองและความเข้าใจภาพรวม ความเสี่ยงอุทกภัยทั้งเชิงสังคมและกายภาพ อาจทำให้เมืองสามารถรับมือกับความเสี่ยงอุทกภัยได้ ยาก และยังเป็นสาเหตุที่สร้างความเหลื่อมล้ำทางสังคมเพราะชุมชนที่เปราะบางและอ่อนกว่าอาจ ไม่ได้รับการสนับสนุนเพื่อให้สามารถรับมือกับผลกระทบจากอุทกภัย ประเด็นความยุติธรรมทางสังคม จากมาตรการจัดการความเสี่ยงอุทกภัยจึงเป็นประเด็นที่สำคัญในการวางแผนและพัฒนาเมืองทั้งใน ประเทศที่พัฒนาแล้วและประเทศกำลังพัฒนา ผลการจากการวิเคราะห์งานวิจัยนี้จึงให้ความสำคัญกับ กระบวนการที่เน้นการมีส่วนร่วมอย่างเป็นธรรมในการพัฒนาแนวทางและวางเพื่อลดความเสี่ยง อุทกภัยในเมือง

การเปลี่ยนนโยบายการจัดการน้ำจากประเทศที่พัฒนาแล้วสู่ประเทศกำลังพัฒนา water policy translation

รัฐบาลเนเธอร์แลนด์ได้ดำเนินนโยบายเพื่อส่งเสริมการวางแผนเพื่อปรับตัวต่อภัยธรรมชาติ และแนวทางการจัดการน้ำผ่านความร่วมมือกับหลายประเทศทั่วโลก รวมถึงประเทศในเอเชีย ตะวันออกเฉียงใต้ **บทที่ 3** ของงานวิจัยเล่มนี้ศึกษาการเปลี่ยนนโยบายการจัดการน้ำจากเนเธอร์แลนด์สู่ เวียดนาม การนโยบายการจัดการน้ำจากประเทศหนึ่งไปยังอีกประเทศหนึ่งเป็นกระบวนการที่มีพลวัต ที่ซับซ้อนและอาศัยแรงขับเคลื่อนทางการเมืองทั้งระหว่างประเทศและในประเทศ งานวิจัยนี้ใช้ มุมมองกรอบแนวคิดในเชิงวิพากษ์เพื่อศึกษาวิธีการถ่ายโอนแนวคิดนโยบายการจัดการน้ำจาก แนวทางระดับโลก (global solutions) สู่การแปลเป็นแนวทางการวางแผนจัดการน้ำในประเทศ ปลายทาง

งานวิจัยนี้ได้เชื่อมโยงมุมมองการวิเคราะห์กรอบแนวคิด framing perspective กับ การศึกษาการเปลี่ยนนโยบาย policy translation เพื่ออธิบายกระบวนการแปลแนวคิดการจัดการน้ำ ระดับโลก 4 กระบวนการดังนี้ กระบวนการแรกเน้นถึงบทบาทของผู้เชี่ยวชาญ ผู้ให้คำปรึกษา และ

Summary

นักวิชาการจากเนเธอร์แลนด์ในการให้ความหมายปัญหาการจัดการที่พบได้ทั่วโลกและแนวทางการแก้ไขปัญหานี้ โดยกระบวนการนี้นำไปสู่การสร้างกรอบแนวคิดการจัดการแบบเนเธอร์แลนด์หรือ Dutch delta management frame ที่เป็นส่วนประกอบหลักในความร่วมมือด้านการจัดการน้ำของเนเธอร์แลนด์และประเทศต่างๆ กระบวนการที่สองอธิบายความร่วมมือระหว่างประเทศโดยการนำของผู้เชี่ยวชาญ ผู้ให้คำปรึกษา และนักการทูตจากเนเธอร์แลนด์และองค์การระหว่างประเทศและการริเริ่มเวทีหรือแพลตฟอร์มความร่วมมือเกี่ยวกับการจัดการน้ำเพื่อส่งเสริมความเป็นสากลและให้ความสำคัญการจัดการน้ำของเนเธอร์แลนด์ในฐานะแนวทางการจัดการน้ำระดับโลก (global water policy agendas) โดยพยายามปรับใช้แนวทางการจัดการน้ำระดับโลกนี้เพื่อเป็นแนวทางการวางนโยบายการจัดการน้ำในประเทศปลายทาง หรือการสร้างกรอบการจัดการน้ำของประเทศท้องถิ่น local-specific water policy frame ผลจากการศึกษาอธิบายถึงการสร้างกรอบแนวคิดการจัดการน้ำแม่โขง Mekong Delta Management frame ซึ่งเป็นผลจากการแปลแนวคิดการจัดการแบบเนเธอร์แลนด์ Dutch delta management frame ในบริบทของเอเชียตะวันออกเฉียงใต้ ซึ่งกรอบแนวคิดการจัดการน้ำแม่โขงนี้มุ่งเน้นการพัฒนาเชิงเศรษฐกิจเช่นการลงทุนพัฒนาเทคโนโลยีและพัฒนาพื้นที่เพื่อธุรกิจการเกษตรในพื้นที่ลุ่มแม่น้ำโขงของเวียดนาม และกระบวนการสุดท้ายคือการรับรองและประยุกต์ใช้แนวคิดจากการจัดการแบบเนเธอร์แลนด์ Dutch delta management frame อาทิ การบริหารจัดการแบบประสานร่วมมือ collaborative governance การวางแผนอนาคต scenario planning ในแนวทางการจัดการน้ำของเวียดนาม โดยผลการศึกษาใน**บทที่ 3** ระบุว่ายังขาดการมีส่วนร่วมจากภาคส่วนหรือหน่วยงานท้องถิ่นในการตีความและประยุกต์ใช้แนวคิดเหล่านี้แผนดำเนินการจัดการน้ำระดับพื้นที่และภาคของเวียดนาม จึงทำให้เกิดการขาดการยอมรับและความสนใจที่จะนำแนวคิดเหล่านี้ไปปฏิบัติอย่างเป็นรูปธรรม ถึงแม้ว่าแผนแม่โขงเดลต้าที่เกิดจากกรอบแนวคิดการจัดการน้ำแม่โขงจะได้รับทุนสนับสนุนในการดำเนินงานและความช่วยเหลือทางด้านเทคนิคจากองค์กรพัฒนาระหว่างประเทศหลายองค์กร เช่น ธนาคารโลก (The World Bank) แต่การการนำแผนไปแปลเป็นนโยบายและแผนดำเนินการอย่างเป็นรูปธรรมนั้นยังต้องการการเรียนรู้ร่วมกันและศักยภาพระดับท้องถิ่น

การออกแบบเชิงสถาบันเพื่อวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรม

การส่งเสริมศักยภาพของท้องถิ่นเพื่อปรับตัวต่อความเสี่ยงอุทกภัย

การดำเนินมาตรการจัดการความเสี่ยงอุทกภัยแบบองค์รวมและคำนึงถึงความเปลี่ยนแปลงนั้นเป็นไปได้ยากในเชิงปฏิบัติหากไม่มีการออกโครงสร้างการจัดการเชิงสถาบันที่สอดคล้องกับการวางแผนนี้

บทที่ 4 ในงานวิจัยนี้อธิบายเกี่ยวกับการดำเนินโครงการ Water as Leverage for Resilient Cities Asia (WaL) เพื่อสร้างศักยภาพท้องถิ่นในการออกแบบและดำเนินมาตรการเพื่อปรับตัวกับอุทกภัย งานวิจัยนี้ได้เสนอกรอบการวิเคราะห์กระบวนการสร้างศักยภาพท้องถิ่นโดยวิเคราะห์สามปัจจัยหลักในระดับท้องถิ่นหรือเมืองได้แก่ ต้นทุนทางความรู้ ต้นทุนทางสังคม และต้นทุนทางการเมือง

ทางด้านต้นทุนทางสังคม งานวิจัยนี้วิเคราะห์ว่าการดำเนินงานโครงการ Water as Leverage เน้นส่งเสริมกระบวนการเรียนรู้และร่วมคิดร่วมสร้างวิธีทางแก้ปัญหาจากความเสี่ยงอุทกภัย โดยการสร้างพื้นที่การทำงานและสื่อสารร่วมกัน soft space ในระดับท้องถิ่น กระบวนการนี้มีความสำคัญในการสร้างศักยภาพระดับท้องถิ่นเพื่อระบุความเสี่ยงทางอุทกภัยและสภาพภูมิอากาศ และกำหนดทางออกหรือมาตรการใหม่ๆเพื่อจัดการความเสี่ยงเหล่านี้ ผลจากการศึกษานี้ยังระบุว่าการขยายผลกระบวนการเรียนรู้ที่ต่อเนื่องในหน่วยงานระดับท้องถิ่นมีความจำเป็น กระบวนการเรียนรู้เพื่อสร้างศักยภาพนี้ท้องถิ่นนี้ประกอบด้วยการจัดการแข่งขันของทีมออกแบบ การทำวิจัยเชิงการออกแบบ และการอบรมเพื่อระดมความคิดอย่างสร้างสรรค์ ซึ่งล้วนแต่มีประโยชน์ในการออกแบบมาตรการใหม่ๆเพื่อลดความเสี่ยงอุทกภัยแบบองค์รวม และยังช่วยศักยภาพด้านความรู้ของท้องถิ่นเพื่อปรับเปลี่ยนวิธีการวางแผนเพื่อลดความเสี่ยงอุทกภัยในเมือง

ทางด้านต้นทุนทางสังคม โครงการ Water as Leverage สามารถประสานการทำงานร่วมกันของบุคลากรจากหลายหลายภาคส่วนเช่น นักวางแผนเชิงพื้นที่ นักวิชาการ นักผังเมือง ผู้เชี่ยวชาญด้านการจัดการน้ำ และนักสังคมสงเคราะห์จากในท้องถิ่นและนักออกแบบ ภูมิสถาปนิก ผู้ทำงานในองค์กรภาคประชาสังคม และบุคลากรและผู้เชี่ยวชาญภาคการเงินทั้งจากท้องถิ่นและจากต่างประเทศ **บทที่ 4** ของวิจัยเล่มนี้กล่าวถึงความสำคัญของโอกาสที่จะเข้ามามีส่วนร่วมขององค์กรภาคประชาสังคมจากท้องถิ่นที่อาจมีขนาดเล็กและทรัพยากรที่จำกัดในกระบวนการเน้นการออกแบบเพื่อรับมือกับความเสี่ยงภัยพิบัติ Resilience by design

Summary

สุดท้ายทางด้านต้นทุนทางการเงิน การยอมรับและความเป็นเจ้าของแนวทางการรับมือ ความเสี่ยงอุทกภัยแบบองค์รวมของหน่วยงานท้องถิ่นและภาคประชาสังคมในพื้นที่เป็นสิ่งสำคัญใน ขั้นตอนการปฏิบัติงาน ผู้ส่งเสริมการเปลี่ยนแปลงในท้องถิ่น local change agent ที่ทำหน้าที่ ทีมงานเพื่อพร้อมรับปรับตัว resilience team มีส่วนสำคัญในการสร้างต้นทุนทางการเงินนี้ ในขณะที่ โครงการระหว่างประเทศเน้นการส่งเสริมการออกแบบมาตรการเชิงองค์รวม การจะนำมาตราการนี้ ไปปฏิบัติจริงต้องอาศัยความร่วมมือและศักยภาพของหน่วยงานที่ทำงานร่วมกันของรัฐบาลระดับ ท้องถิ่นและรัฐบาลระดับชาติ ในกรณีศึกษาของเมืองซามารังพบว่าการขาดการประสานงานที่ชัดเจน กับผู้กำหนดนโยบายระดับชาติทำให้เกิดอุปสรรคการดำเนินมาตรการที่ออกแบบเพื่อลดความเสี่ยง อุทกภัยแบบองค์รวมโดยเฉพาะขั้นตอนการขอรับรอง การกำหนดงบประมาณและนำมาตราการไป ปฏิบัติ

เงื่อนไขเชิงสถาบันเพื่อสร้างความสามารถวางแผนเพื่อพร้อมรับและปรับตัวต่ออุทกภัย

นอกจากประเด็นด้านศักยภาพของท้องถิ่น การสร้างเงื่อนไขที่จำเป็นเชิงสถาบันมีผลต่อการวางแผน และเป็นส่วนประกอบหนึ่งของการศึกษาโดยใช้มุมมองเชิงวิพากษ์ในงานวิจัยนี้ บทที่ 5 ใช้กรอบ แนวคิดการวิเคราะห์และพัฒนาเชิงสถาบันหรือ IAD เพื่อศึกษาว่าโครงการระหว่างประเทศจะ สามารถออกแบบเงื่อนไขเชิงสถาบันแบบใดเพื่อส่งเสริมส่งเสริมความสามารถในการวางแผนและ ดำเนินงานมาตรการที่พร้อมรับและปรับตัวต่อความเสี่ยงอุทกภัยอย่างไร โดยผลการวิเคราะห์เชิง เปรียบเทียบแผนแม่โขงเดลต้าและโครงการ Water as Leverage ในเมืองซามารังได้ระบุถึงเงื่อนไข เชิงสถาบันที่สำคัญวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมชาติ

เงื่อนไขแรกคือความร่วมมือและความรู้สึกเป็นเจ้าของในการดำเนินมาตรการและ กระบวนการวางแผนเพื่อลดความเสี่ยงและปรับตัวต่ออุทกภัย ผลจากการศึกษาระบุว่าการเป็น เจ้าของแนวทางการแก้ปัญหาและแรงสนับสนุนจากหน่วยงานทั้งระดับชาติและระดับท้องถิ่นจะทำให้ เกิดการดำเนินงานและผลักดันมาตรการจัดการความเสี่ยงแบบองค์รวมอย่างเป็นรูปธรรม การเปิด ให้หน่วยงานที่เกี่ยวข้องและภาคประชาชนมีส่วนร่วมจะสร้างความต้องการเป็นเจ้าของแนวคิดและ ผลักดันมาตรการใหม่ร่วมกันในระดับท้องถิ่นได้ เงื่อนไขที่สองเกี่ยวกับความสอดคล้องของ

มาตรการที่นำเสนอจากการร่วมคิดร่วมสร้างกับนโยบายและการดำเนินตามแผนของภาครัฐ ผล
รายงานการศึกษาจาก**บทที่ 5** ระบุถึงความสำคัญของการบูรณาการมาตรการแบบใหม่กับแผนที่
ดำเนินการอยู่ในระดับเมือง เจ็อนไซที่สามเน้นถึงความจำเป็นการวางแผนงบประมาณและการ
ดำเนินงาน โดยระบุถึงความสำคัญของการสื่อสารเกี่ยวกับโอกาสและข้อจำกัดของการเข้าถึง
งบประมาณอย่างตรงไปตรงมา ผลจากงานวิจัยเสนอว่าควรแสวงหาแหล่งทุนจากการลงทุนของ
ภาคเอกชนและไม่พึ่งพิงแหล่งทุนจากองค์กรระหว่างประเทศและรัฐบาลต่างชาติมากเกินไป
เจ็อนไซสุดท้ายที่ได้จากวิเคราะห์ในงานวิจัยนี้คือกระบวนการเรียนรู้เพื่อเปลี่ยนแปลงนโยบาย การ
เปลี่ยนแปลงเชิงนโยบายระยะยาวต้องการทั้งการปรับเปลี่ยนการจัดการเชิงสถาบันและนวัตกรรมจา
การเรียนรู้และทำงานร่วมกัน โครงการระหว่างประเทศสามารถผลักดันและส่งเสริมการเรียนรู้การด
ทดลองความคิดและแนวทางใหม่ๆ ในขณะเดียวกันการให้ความสำคัญและประยุกต์แนวคิดใหม่กัน
ความรู้จากท้องถิ่นเป็นกระบวนการที่สำคัญที่ส่งเสริมท้องถิ่นและชุมชนมีส่วนร่วมและเป็นผู้
กำหนดการดำเนินมาตรการเพื่อลดความเสี่ยงจากอุทกภัยในชุมชนของตนเอง

บทสรุปและข้อเสนอแนะ

งานวิจัยเสนอการใช้มุมมองเชิงวิพากษ์ในงานวิจัยด้านการวางแผนเพื่อรับมือและปรับตัวต่ออุทกภัย โดย
ให้ความสำคัญเกี่ยวกับมิติทางด้านความยุติธรรมทางสังคมในมาตรการการจัดการความเสี่ยงอุทกภัย
ในเมือง งานวิจัยนี้เสนอว่าผู้ออกนโยบายจัดการเรื่องเมืองและสิ่งแวดล้อมจำเป็นต้องคำนึงถึงประเด็น
เรื่องความยุติธรรมทางสังคมและความเป็นธรรมของแนวทางและการบวนการออกมาตรการจัดการ
ความอุทกภัยเพื่อลดช่องว่างของความเปราะบางที่อาจจะขยายขึ้นจากผลกระทบและความเสียหาย
จากอุทกภัย การเปิดกว้างในเชิงกระบวนการวางแผนแบบมีส่วนร่วมและรับฟังเสียงและความคิดเป็น
จากผู้ที่มีความเสี่ยงและภาคส่วนที่เกี่ยวข้องโดยเฉพาะระดับท้องถิ่นมีความสำคัญเพื่อกำหนดและ
ออกแบบทางออกใหม่ๆที่คำนึงประโยชน์องค์กรรวมอย่างเป็นธรรมและปัจจัยการเปลี่ยนแปลงในอนาคต
แทนที่จะเน้นการใช้มาตรการเชิงโครงสร้างหรือการบังคับใช้กฎหมาย เช่น การย้ายชุมชนรูกล้าแม่น้ำ
งานวิจัยนี้ชี้ให้เห็นความจำเป็นที่จะดำเนินมาตรการที่เป็นธรรมและเปิดการมีส่วนร่วมของชุมชนที่มี
ความเสี่ยง โดยการออกแบบมาตรการควรคำนึงถึงกรอบแนวคิดการพัฒนาความครอบคลุมทาง

Summary

สังคม social inclusive frame ที่มีความสำคัญทั้งในบริบทประเทศที่พัฒนาแล้วและประเทศที่กำลังพัฒนา ผ่านการวางแผนเพื่อลดความเหลื่อมล้ำทางเศรษฐกิจ พัฒนาการเข้าถึงที่อยู่อาศัยที่มั่นคง พร้อมกันกับการลดความเสี่ยงอุทกภัยของเมืองและการรักษาและฟื้นฟูระบบนิเวศทางน้ำ

งานวิจัยนี้ให้ความสำคัญกับบทบาทศักยภาพของตัวแสดงระดับท้องถิ่น ผ่านการกระบวนการกระบวนการเน้นการออกแบบเพื่อรับมือกับความเสี่ยงภัยพิบัติ Resilience by design ที่มีตัวแสดงท้องถิ่นเป็นแกนกลางในการส่งเสริมการวางแผนที่เป็นธรรมและคำนึงต่อมิติทางสังคมในการรับมือความเสี่ยงอุทกภัย ถึงแม้กระบวนการที่เน้นการออกแบบนี้ได้รับการกล่าวถึงในระดับนานาชาติ กระบวนการนี้ต้องใช้เวลาพอสมควรที่จะทำให้การบวนการเรียนรู้ การทำวิจัยอิงการออกแบบ และการอบรมเพื่อระดมความคิดอย่างสร้างสรรค์เกิดขึ้นได้อย่างครบถ้วน จากทฤษฎีการปรับตัวต่อการเปลี่ยนแปลง evolutionary resilience สามารถระบุได้ว่าการสร้างเครือข่ายและแนวร่วมทางในการดำเนินงานเพื่อรับมือและปรับตัวกับความเสี่ยงจากภัยพิบัติเพื่อส่วนประกอบสำคัญเพื่อเปลี่ยนแปลงนโยบาย ทีมดำเนินงานเพื่อรับมือและปรับตัวต่อความเสี่ยงของเมืองที่ประกอบด้วยนักวิชาการ ผู้ที่ทำงานในภาคประชาสังคม ผู้ออกนโยบายสามารถมีบทบาทเป็นทั้งส่งเสริมและสนับสนุนการเปลี่ยนแปลง และเป็นผู้ที่จะประสานการทำงานกับหน่วยงานภาครัฐ งานวิจัยชี้ให้เห็นความท้าทายเชิงสถาบันในการออกแบบและดำเนินมาตรการในเชิงปฏิบัติ กระบวนการวางแผนเมืองเพื่อพร้อมรับและปรับตัวต่ออุทกภัยอย่างเป็นธรรมจำเป็นต้องอาศัยแรงสนับสนุนทางการเมืองจากผู้ที่มีอำนาจตัดสินใจจากรัฐบาลของประเทศปลายทางที่รับความช่วยเหลือ งานวิจัยนี้จึงเสนอองค์กรหรือหน่วยงานที่ทำโครงการระหว่างประเทศต้องทำงานร่วมกันกับรัฐบาลในประเทศท้องถิ่นเพื่อการออกแบบข้อเสนอและมาตรการที่เข้ากันกับบริบทท้องถิ่นและการสามารถบูรณาการในแผนงานของรัฐได้

ผลจากการศึกษาในงานวิจัยชิ้นนี้สะท้อนการเรียนรู้ข้ามพรมแดนในการเปลี่ยนนโยบายการจัดการน้ำระดับโลกเพื่อแก้ปัญหาวิกฤติการจัดการน้ำในประเทศที่กำลังพัฒนาโดยเฉพาะที่มีพื้นที่แนวชายฝั่ง โดยสะท้อนถึงโอกาสและอุปสรรคของการปรับใช้แนวคิดนโยบายการจัดการน้ำเพื่อจัดการปัญหาในท้องถิ่น ในด้านโอกาสคือการเรียนรู้แนววิธีการใหม่ ๆ และการถ่ายโอนแนวคิดการจัดการน้ำแบบองค์รวมอย่างยั่งยืน แต่อุปสรรคคือการเน้นการถ่ายโอนแนวความคิดที่ยังขาดกระบวนการตีความและการทำความเข้าใจร่วมกันเพื่อไปถึงประโยชน์และความต้องการของท้องถิ่น กระบวนการนี้อาจกลายเป็นเพียงการโปรโมตวิธีแก้ไขที่สำเร็จรูปที่ไม่สอดคล้องต่อบริบทและความต้องการของ

ท้องถิ่น งานวิจัยนี้จึงเสนอกรอบคิดและวางแผนที่เน้นกระบวนการเชิงสังคมที่ส่งเสริมการเข้าใจการตีความแนวคิดอย่างลึกซึ้งและรอบด้าน และเสนอการบวนการมีส่วนร่วมที่เปิดรับและเป็นธรรมต่อผู้ที่มีความเสี่ยงและเป็นที่เกี่ยวข้องต่อการออกแบบมาตรการการจัดการน้ำ โดยเน้นกระบวนการเรียนรู้ร่วมกันและการสร้างศักยภาพท้องถิ่นในการระบุความเสี่ยงและร่วมคิดร่วมสร้างวิธีการแก้ปัญหาที่เหมาะสมและคำนึงถึงอรรถประโยชน์และผลกระทบรอบด้านจากนโยบายและมาตรการการจัดการน้ำแบบองค์รวม

ทั้งนี้งานวิจัยนี้จึงเสนอการเปลี่ยนผ่านโครงสร้างเชิงการจัดการเพื่อจัดการกับความเสี่ยงอุทกภัยในระยะยาวและคำนึงถึงผลกระทบทางด้านสังคมจากความเปลี่ยนแปลงทางธรรมชาติ งานวิจัยมีข้อเสนอให้โครงการระหว่างประเทศที่ควรคำนึงถึงปัจจัยทางด้านท้องถิ่นเช่น ประสบการณ์และความรู้ของคนท้องถิ่น การส่งเสริมการสร้างเครือข่ายท้องถิ่นที่เข้มแข็งเพื่อดำเนินมาตรการเพื่อพร้อมรับและปรับตัวกับความเสี่ยงทางธรรมชาติ โครงการระหว่างประเทศควรให้ความสำคัญกับการทำความเข้าใจบริบทและการจัดการระดับท้องถิ่นเพื่อปรับกับกิจกรรมและการดำเนินงานที่สอดคล้องกัน งานวิจัยนี้เสนอให้ผู้ออกนโยบายและภาคส่วนที่เกี่ยวข้องในเมืองในภูมิภาคเอเชียตะวันออกเฉียงใต้ตระหนักถึงการคิดนอกกรอบเพื่อแสวงหาวิธีการใหม่ๆและใส่ใจกระบวนการที่เป็นธรรมต่อสังคมในการวางแผนและกำหนดนโยบายการจัดการน้ำและสิ่งแวดล้อม สามารถเริ่มด้วยการสร้างความร่วมมือและโอกาสการทำงานร่วมกันในแพลตฟอร์มแบบใหม่ และดึงศักยภาพจากผู้แสดงระดับเมืองที่หลากหลาย การสร้างพันธมิตรเพื่อการทำงานร่วมกันนี้จะช่วยส่งเสริมกระบวนการทดลองมาตรการเพื่อปรับตัวต่อความเสี่ยงธรรมชาติและหาช่องทางบูรณาการการลดความเสี่ยงอุทกภัยกับนโยบายของรัฐในการจัดการน้ำและการพัฒนาเมือง ผู้วิจัยหวังว่างานวิจัยเป็นส่วนหนึ่งในการต่อยอดการศึกษาด้านการจัดการอุทกภัยเพื่อเพื่อการจัดการเมืองที่เป็นธรรมและตอบสนองต่อความเปลี่ยนแปลงในอนาคต

Acknowledgements

Similar to most PhDs around the world, this PhD is a long, challenging and inspiring journey. This journey could not be complete without kind support & strong push, words of inspiration & thoughtful comments and admiration & doubt from many people in my life. I, therefore, would like to use this time and space to express my gratitude and reflect on memories and important people of my PhD journey. First, I would like to thank Ajarn Siriporn, Ajarn Tavidia, and Ajarn Wjitbusaba (Ann) from Thammasat University. Who inspired me to explore beyond the boundaries of knowledge and practices and equipped me with transboundary and multidisciplinary perspectives. I remember a coffee with Ajarn Ann in Soi Aree, Bangkok, when she said ‘just go for the PhD.’ And now I am actually here. To begin my journey far from home, in Groningen, the Netherlands, I would like to thank my ReMa colleagues, Ciska, Robin, Renno, Jordi, Nicky, Jelte and Erik, and our ReMa mentors and coordinators, Louise Meijerink and Phillip McCann, and my EIP crew, Tantri, Aun and Bayu. With their kind support and companionship, I could easily adjust to the new study and living environment. I would like to thank the small Thai community in Groningen who shared my journey in the Netherlands at the start: Rapatsa, Siriroj, Kong, Nick, Mew, Net, Karnsuda, P’Pry, P’Aor, P’Kong and P’Jo.

I am lucky to have been working with Margo, my supervisor. Margo is one of the major reasons for my decision to take an opportunity of doing this PhD research at the Faculty of Spatial Sciences, University of Groningen. Thank you for trusting me that I am fit with this assignment and research career and that I would make it until the end. I would not be able to complete this life-challenging task and journey without your caring attention, responsive help and kind words.

This PhD journey could not be complete without the strong support and energy from Jos, my supervisor. Thank you for your empathy, encouragement, strategic advice not only for my research but also for my life. Even in the dark cold days of the long winter in Groningen, you can still brighten up my days and of many others at the corridor of the Planning department. Thank you for connecting me to Henk Ovink who had helped to expand this research to contribute to the policy world. I would like to express my gratitude for his vital support for this research.

With an opportunity to work with Margo and Jos, I couldn’t wish for a better supervision team.

Acknowledgements

To my reading committee, Prof. Johan Woltjer, Prof. Sander Meijerink and Prof. Margreet Zwarteveen, thank you for accepting this task and providing insightful comments.

I would like to thank everyone at the Department of Planning and the Faculty of Spatial Sciences, University of Groningen. I would definitely miss the friendly working environment and warm conversations there. I will miss cycling to and back from the Zernike campus and Tuesday coffee hour. I would like to thank my co-authors and advisors for my research: Elen and Tim. Particularly thank colleagues whom I worked closely with for both research and educational activities: Ron, Annet, Terry, Paul, Jacco, Tialda and Tim Zwaagstra. Thank you, Diana, Sanne, and Tineke for your assistance and guidance to get me through many difficulties.

I have met and become friends with many people at this department and this university. Thank you, Gothenburg AESOP House friends, Koen, Isabelle and Isti for always cheering me up and opening for 'a whole new world' moments of doing this PhD. I have met many inspiring people and who I had a nice time exchanging our thoughts and discussions and our culture and our foods: Tri, Jannes, Britta, Steven, Ciska, Thai, Ju, Robin, Laura, Marijn, Ingo, Maria, Stanati, Stephen, Gwenda, Jing Wu, Diani, Lilly, Rozanne, Anna-Marel, Mohammad, Martin, Scott and Mufti, and friends from SEA-ASEAN, Titissari, Icha and Yoga. Thank you for all 'cherishing' (Wu, 2020) and memorable moment. You all have made Groningen, for me, a fun and interesting place. I would like to thank Ellen, Shahnoor and Farhad for exchanging our research and fruitful conversations on our shared research topic, the global transfer of Dutch water policy. I would like to recognize colleagues from whom I learned a lot from their works: Gert de Roo, Chris, Ward, Ina, Wendy, Elen, Tim, Claudia, Ferry and Christian. I hope we can collaborate in the future.

Furthermore, I would like to express my gratitude to my collaborators, colleagues, partner institutions and associations. Thank you Laksmi, Ibu Wiwi and the research team from PWK, Diponegoro University, and many kind people in Semarang. I would like to thank Intan and Mega for their help during my fieldwork. Thank you WaL team, Sandra and Robert, for their advice and support. Thank you, Simon, for our collaboration and discussions. Thank you to all friends, members and committee from Thai Student Association in the Netherlands (TSAN), and other two informal groups: Urban Chitchat and PhD Bella. I am grateful for the nice

support from my former colleagues at the Asian Disaster Preparedness Center (ADPC), P'Pae, P'Hope, P'Aek, P'Bank, P'Benz, P'Pon and P'Nhoo. I would like to also thank my former colleagues at the UN Country Team in Thailand and UNDP Thailand.

Special thanks to friends who are with me in Groningen, in the Netherlands, and Europe, especially during my challenging time. Thank you P'Pairoh for your friendship and companion. I would not be able to get through this journey without your frequent video calls and voice calls. Thank you, Pat, Boost, KM, Toey, Ja, Siriphong, P'Tal, P'Tai, P'Night, P'Art, P'Jane and her family, P'Amp, P'Erk, P'Pump, P'LK, Ping, P'Top, Azkar and his family, Mike, Bung Fair and his family, for their warm friendship and positivity. I am especially thankful for my roommate, Kong, Marc and Do Sung, for all the good times and all my friends in Thailand who (try to) listen to my experience. I would like to thank you all (even I did not mention your name here). I would like to also thank my family in the US, Judy, Brendan and Tony.

I would like to express my big thank to my two paranymphs, Koen and Robin. Who had helped me, from overseas, in a preparation for me to reach the end of this journey, the PhD Defence. Their help is invaluable during this period of Covid-19. I owe these two people greatly. Special thanks to my honorary paranymph, Isabelle. Thank you for her friendship and for always bringing joy to my journey until the end.

Lastly, I would like to express my appreciation to my family. To my late father who valued and put his priority on my education, I believe you would be proud and happy with my experience if you are still here with me. I want to thank my mom, sisters, Nanyuwa, brothers, Abah and Uming, for allowing and supporting me, as the youngest member of our family, to explore the world. I would like to express my special thank you to my sister, Nawal, a person who has been the most important supporter of my life. For a large part, this journey is completed because of you. I hope I made you proud.