

Comparing cooperation between Vietnam-the Netherlands and Vietnam-Japan to understand how water flows are shaped by development activities

- a case study of Mekong delta, Vietnam

Yukiko Ohno

MSc Thesis WMG.19-20

27/03/2019

Updated Version, April 2019



Comparing cooperation between
Vietnam-the Netherlands and
Vietnam-Japan to understand
how water flows are shaped by
development activities:
- a case study of Mekong delta, Vietnam

Master of Science Thesis

By

Yukiko Ohno

Supervisor

Prof. Margreet Zwarteveen

Mentor

Dr. Jaap Evers

Examination Committee

Prof. Margreet Zwarteveen

Dr. Jaap Evers

Dr. Arjen Zegwaard

This research is done for the partial fulfilment of requirements for the Master of Science degree at the
IHE Delft Institute for Water Education, Delft, the Netherlands.

Delft

April 2019

Although the author and IHE Delft Institute for Water Education have made every effort to ensure that the information in this thesis was correct at press time, the author and IHE Delft do not assume and hereby disclaim any liability to any party for any loss, damage, or disruption caused by errors or omissions, whether such errors or omissions result from negligence, accident, or any other cause.

© Yukiko Ohno 2019.

This work is licensed under a [Creative Commons Attribution-Non Commercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/)



Abstract

The water resource management in the Mekong delta in Vietnam has been congested with various interests of domestic and international actors. In the recent cooperation, Dutch provided long term multi-sectoral strategic development plan exclusively to the delta, while Japanese government offers combination of short-term single-sectoral projects with hard infrastructure based solutions. In this context, this study analyses the differently formulated international assistances between the Netherlands and Vietnam and Japan and Vietnam for better understanding of motivations and politics behind these cooperation.

The results show that Dutch and Japanese form the outline of cooperation based on their own historical path that both countries followed differently, with interests, internal power balance, and available funds. Solutions offered to Vietnam were in accordance with their successful experiences in the past and present. Dutch solutions were greatly framed by Dutch expertise for living in a delta safely and sustainably, and be prepared to the uncertain future. These have been framed by Dutch politicians, experts, and technical and social researchers each one of them has own definition of success. The central driver for the government is to increase the chance for Dutch private actors to gain the business in the Mekong delta.

Japanese cooperation started as war reparation after WWII, and evolved as it had experienced economic growth, oil crisis and natural disasters and so forth. Although individual motivation of different actors are not clear, the government pursues economic prosperity of Japan and perhaps of Vietnam using ODA investments. Japanese ODA has been offered with other direct investments from Japanese private parties, which is great interest for Vietnamese counterpart. Japan also offers technical cooperation that trace Japanese successful pathway to achieve high economic growth rates and enhancing national economy.

In Vietnam, the central government, hydraulic engineers and construction companies have formed the network of intensive hydro infrastructure for their own profits, all of them based and educated in the North part of the country. Based on the theories and successful water management experience in the North, they introduced hydraulic infrastructures motored by large machineries. However, the entire system did not fit local water management practices in the Mekong delta, but only brought some profit for all of them. Overall, the motivation of central government for sustainable development of the Mekong delta is not as credible compared to its commitment to strengthen the country force and the economic growth. Even so, Vietnamese have shown the agency to divert interventions from international assistance to shape water flows to fulfil their political agenda. They observe, analyse and choose the solutions that seem to contribute their hydraulic missions.

In conclusion, this study shows that the water governance in the Mekong delta has been shaped by Vietnamese government with utilising interventions provided by international partners, while all of their actions are guided by own agendas. In parallel, actors in Mekong delta, such as farmers are also shaping the flow by diverting and controlling the water flows with utilising available means. The future flows will depend on how do those power balance shift and what would be the global economical and bio-physical environment.

Acknowledgements

First of all, to my family, my mother and sister, I am grateful to your understanding and support for my decisions and choices. To my grandparents, thank you two for taking care of me, sharing your knowledge and experiences in the war time and traditional living ways. It gave me so much insights during this master's study. I really wish I could talk with you again!

My respects and thanks to my supervisor, Margreet, for comments and impacts you made to me. Your speech on masculinity in hydraulic engineering on the first day at IHE was my version of “shock event” and opened up my eyes to the new world of social science.

So much thanks and respects to Jaap, for being patient and for sharing your views. Those added many aspects to my research. Even if those are not written in the text, it helped me to widen my eyes.

I would like to thank all my interviewees for sharing their time, experience, personal views and other things that I curiously asked. And Thao, Thao's family and Hue thank you all for supporting and assisting my field trip in Vietnam. Without your support, I couldn't even find my hostel or bus station. Thank you for sharing your private time too, it became nice memory of Vietnam.

My gratitude to Joint Japan/World Bank Graduate Scholarship Program for sponsoring entire master's study at IHE Delft, and to the project “NWO-UDW Strengthening strategic delta planning in Bangladesh, the Netherlands, Vietnam and beyond” for supporting my field trip to Vietnam. So I would like to thank all Japanese and Dutch tax payers.

Finally, I would like to thank all IHE professors, lectures and researchers, especially dearest water managers. This journey was harder than I imagined, but was even more joyful thanks to you all.

Table of Contents

| | |
|---|-------------|
| Abstract | i |
| Acknowledgements | ii |
| Table of Contents | iii |
| List of Figures | vii |
| List of Tables | viii |
| Abbreviations | ix |
| Preface | xi |
| Chapter 1 Introduction | 1 |
| 1.1 Background information | 1 |
| 1.2 Problem statement | 2 |
| 1.3 Research objectives | 3 |
| 1.4 Research questions | 3 |
| Chapter 2 Literature review | 4 |
| 2.1 Water flows and interventions | 4 |
| 2.1.1 Definition of water flow and interventions | 4 |
| 2.2 Development of analytical framework | 5 |
| 2.2.1 Framework for analysis | 5 |
| 2.2.2 Analytical framework for donor-recipient relationships | 5 |
| 2.2.3 Analytical framework for sub-regional - local community level | 6 |
| 2.2.4 Context | 7 |
| 2.2.5 Drivers: interests and institutions in each level | 8 |
| 2.2.6 Arenas: politics, power balance among actors | 8 |
| 2.2.7 Decisions that determine supply and demand | 9 |
| 2.2.8 Impacts | 10 |
| 2.2.9 Inter-dependency of elements | 11 |
| 2.2.10 Approaches to understand insights and complexity of water management | 11 |
| 2.3 Conclusion | 12 |
| Chapter 3 Methodology | 13 |
| 3.1 Research design | 13 |
| 3.1.1 Intrinsic and explorative case study from subjective position | 13 |
| 3.1.2 Description of case study | 13 |

| | | |
|------------------|---|-----------|
| 3.1.3 | Object and unit of analysis | 15 |
| 3.2 | Research strategy: operationalisation | 15 |
| 3.2.1 | Overall structure of the research | 15 |
| 3.2.2 | Selection of information source | 16 |
| 3.3 | Data collection | 17 |
| 3.3.1 | Understand the framework of each state | 17 |
| 3.3.2 | Data collection related to research questions | 17 |
| 3.3.3 | Timeframe of the research..... | 20 |
| 3.3.4 | Ethical considerations | 20 |
| 3.4 | Conclusion | 20 |
| Chapter 4 | Dutch and Japanese Cooperation to Vietnam..... | 21 |
| 4.1 | Context of Dutch cooperation..... | 21 |
| 4.1.1 | History of Dutch international cooperation..... | 21 |
| 4.1.2 | Socio-economical and Geo-political context | 23 |
| 4.1.3 | Water management in the Netherlands | 23 |
| 4.2 | Context of Japanese cooperation | 25 |
| 4.2.1 | History of Japanese cooperation in Asia and Vietnam..... | 25 |
| 4.2.2 | Socio-economical and Geo-political relationship | 28 |
| 4.2.3 | Context of water management in Japan | 30 |
| 4.3 | Drivers, Arena and Decision of Dutch cooperation | 32 |
| 4.3.1 | Shift of ODA policy from aid to trade | 32 |
| 4.3.2 | Schemes for cooperation | 33 |
| 4.3.3 | Actors in international cooperation | 33 |
| 4.3.4 | Decisions making process in Dutch international cooperation | 34 |
| 4.4 | Drivers, Arenas and Decisions of Japanese cooperation | 35 |
| 4.4.1 | Various drivers based on international trend and post-war experiences | 35 |
| 4.4.2 | Schemes for cooperation | 36 |
| 4.4.3 | Involved ministries and institutions for international cooperation..... | 37 |
| 4.4.4 | Decision making process in Japanese international cooperation | 40 |
| 4.5 | Impacts of cooperation | 41 |
| 4.5.1 | Impacts of Dutch cooperation | 41 |
| 4.5.2 | Impacts of Japanese cooperation..... | 42 |
| 4.6 | Conclusion | 43 |

| | | |
|-------------------|---|-----------|
| Chapter 5 | Assistances in Vietnam and Mekong delta | 44 |
| 5.1 | Context..... | 44 |
| 5.1.1 | The Vietnam as a state and the Mekong Delta..... | 44 |
| 5.1.2 | Socio-economic context in Vietnam and the delta..... | 48 |
| 5.1.3 | Geo-political context with riparian countries..... | 50 |
| 5.1.4 | Local scale context..... | 50 |
| 5.2 | Drivers, Arena and Decision of Vietnamese cooperation | 52 |
| 5.2.1 | Drivers of central government..... | 52 |
| 5.2.2 | Regional, provincial and local level..... | 53 |
| 5.2.3 | Involved ministries and institutions | 54 |
| 5.2.4 | Decisions of National government..... | 55 |
| 5.2.5 | Decisions in local institutional level | 55 |
| 5.2.6 | Decisions in community and individual level..... | 56 |
| 5.2.7 | Impacts to water flows | 57 |
| 5.3 | Conclusion..... | 57 |
| Chapter 6 | Discussions and Conclusion..... | 59 |
| 6.1 | Visions developed for Mekong Delta (SRQ1-1) | 59 |
| 6.1.1 | Dutch vision: Conceptual and long term..... | 59 |
| 6.1.2 | Japanese vision: Concrete and single sector oriented | 59 |
| 6.2 | Water issues described in visions (SRQ1-2) | 60 |
| 6.3 | How different cooperation shape the water flows (RQ1)..... | 61 |
| 6.4 | Solutions offered (RQ2) | 62 |
| 6.5 | Perceptions of Vietnamese to cooperation (RQ3) | 62 |
| 6.6 | Discussions | 64 |
| 6.7 | Conclusion..... | 66 |
| 6.8 | Reflections | 67 |
| References | | 68 |
| Appendices | | 76 |

List of Figures

| | |
|---|----|
| Figure 1. Framework for analysing transboundary water governance complexes..... | 5 |
| Figure 2. Framework for the research (International: Donor-recipient) | 6 |
| Figure 3. Framework for the research (Subregional-Local level)..... | 6 |
| Figure 4. Water governance actors in the Mekong region | 9 |
| Figure 5. The production of socio-nature..... | 12 |
| Figure 6. River and canal network in Mekong delta | 14 |
| Figure 7. Overall research structure | 16 |
| Figure 8. Types of Japanese ODA | 36 |
| Figure 9. Comparison of size and distances of three countries | 44 |
| Figure 10. Classification of the Mekong Delta | 45 |
| Figure 11. Foreign and Domestic debt of Vietnamese government (in percent of GDP)..... | 48 |
| Figure 12. Motivation-Ability relation of farmer's adaptability of new livelihood models | 56 |

List of Tables

| | |
|--|----|
| Table 1. Objects of analysis in relation to research questions | 15 |
| Table 2. Affiliation or types of intended interviewees..... | 16 |
| Table 3. Preliminary semi-structured interview questions related to Research questions | 18 |
| Table 4. List of interviewees and respondents for questionnaire | 19 |
| Table 5. Timeframe of the research..... | 20 |
| Table 6. Foreign investments in Vietnam by country (2017)..... | 49 |
| Table 7. Land and Demography of provinces in Mekong delta..... | 51 |

Abbreviations

| | |
|---------|--|
| ADB | Asian Development Bank |
| ASEAN | Association of Southeast Asian Nations |
| CTU | Can Tho University |
| DAC | Development Assistance Committee |
| DARD | Departments of Agriculture and Rural Development |
| DFI | Direct Foreign Investment |
| DoNRE | Departments of Natural Resources and Environment |
| GDP | Gross Domestic Product |
| GHQ | General Head Quarter |
| GIZ | Gesellschaft für Internationale Zusammenarbeit |
| GMS | Greater Mekong Subregion |
| GNI | Gross National Income |
| HCMC | Ho Chi Minh City |
| IDA | International Development Association |
| IWRM | Integrated water resource management |
| JBIC | Japan Bank for International Cooperation |
| JICA | Japan International Cooperation Agency |
| JITCO | Japan International Training Cooperation Organization |
| MAFF | Ministry of Agriculture, Forestry and Fisheries, Japan |
| MARD | Ministry of Agriculture and Rural Development , Vietnam |
| MHLW | Ministry of Health, Labour and Welfare, Japan |
| MIWM | Ministry of Infrastructure and Water Management, the Netherlands |
| MLIT | Ministry of Land, Infrastructure, Transport and Tourism, Japan |
| MOE | Ministry of Environment, Japan |
| MOF | Ministry of Finance, Vietnam/Japan |
| MoFA | Ministry of Foreign Affairs , the Netherlands/Japan |
| MoIAC | Ministry of Internal Affair and Communication, Japan |
| MONRE | Ministry of Natural Resource and Environment, Vietnam |
| MoU | Memorandum of Understanding |
| MPI | Ministry of Planning and Investment, Vietnam |
| MRC | Mekong River Committee |
| MRID | Manchurian Railway Investigation Department |
| NEDECO | Netherlands Development Cooperation |
| NGO | Non-Governmental Organizations |
| NWP | Netherlands Water Partnership |
| ODA | Official Development Aid |
| OECD | Organisation for Economic Co-operation and Development |
| OKP | Orange Knowledge Program |
| PMR 120 | Prime Minister Resolution 120/NP-CP |
| RBO | River Basin Organization |
| RQ | Research Question |
| SCFC | Steering Center for Urban Flood Control |
| SIWRP | Southern Institute for Water Resources Planning |

| | |
|------|--|
| SMRC | South Manchurian Railway Company |
| SPA | Strategic Partnership Agreement |
| STEP | Special Terms for Economic Partnership |
| ToR | Terms of Reference |
| UN | United Nations |
| USA | United States of America |
| WB | World Bank |
| WWII | the Second World War |

Preface

The Netherlands was the sole western state that continued trade during Japan's national isolation (1616-1854). During the period, Dutch East Indian company's annual shipment was the only source of information about the western world to the Japanese government (Matsukata, 2011). Even after the company lost its privilege to the British East Indian Company, Dutch mercantile had pretended that they still remain in the position, and kept on sending available information to the general (*Shogun*; ruler of the country) of Japan.

The information brought by Dutch had been highly confidential until the era of 8th Shogun (1716-1745), Yoshimune Tokugawa. Yoshimune encouraged new industry and domestic production of goods, and also interested in western goods and technologies¹. He lifted the ban of foreign books, which allowed more western knowledge to flow into Japan. These were natural and applied sciences for industry and national development, such as, anatomy, astronomy, navigation, mathematics, physics, chemistry, geography and military. Although studying western science was limited to ruling class, it made them aware of scientific advancement and modernization taking place in the western world². Consequently, the knowledge became one of important "goods" for Dutch merchandise to bring to the isolated islands, resulting them to send more scholars.

In 19th century, the government came to realize the necessity of practical research on foreign affairs and geo-politics, as the Russian and British shipments appeared around Japanese sea more frequently³. Also for the Dutch, information on Japan became valuable so they missioned Franz von Siebold (German Doctor⁴) to acquire as much as knowledge about Japan. He funded a clinic/doctor's school to treat patients and have contact with doctors and scholars in Japan. In 1828, Von Siebold went back to the Netherlands with novels, paintings, and animal and plant samples including a map of Japan, which was prohibited at that time. Japanese government exiled him for bringing out those items, and it took 31 years for him to come back to Japan. In 1844, King William II sent an official letter to recommend Japanese government to re-open the trade to western countries based on the advice from Von Siebold, but the government refused to do so. After the government finally re-opened trade and diplomatic relationship in 1854, Japanese realized complete shift in power balance of western world. This initiated modernization of Japan and shift of scientific knowledge source from Dutch knowledge to English and French.

¹ https://en.wikipedia.org/wiki/Tokugawa_Yoshimune

² <https://www.netherlandsandyou.nl/your-country-and-the-netherlands/japan/and-the-netherlands/dutch-japanese-relations>

³ http://www.ndl.go.jp/nichiran/s1/s1_3.html

⁴ His nationality and position had kept secret to Japanese counterparts, as German was not allowed to inter Japan. He pretended to be from rural place when Japanese translators could not understand his Dutch with German accent.

After reopening the international relationships with western countries, Japan eagerly learnt from them by sending scholars to the U.S and Europe and inviting western specialists of their choices. For example, it first asked Dutch Navy to teach fundamental institution and methods for modern navigation, then shifted to French support with fund in accordance to changing international politics and power balance. Also Japanese government paid the quite high salary to foreign experts.

Even with the broaden outlook towards the western world, some Dutch specialists remained close to the core of Japanese government. Guido Verbeck (Dutch political advisor, educator and missionary), intended to be a missionary to Japan became political and military advisor to the central government. To the general public, he is known as the father of Japanese modern architecture (Umetani, 2007).

Another example is Johannis de Rijke, an engineer for riverbank improvements and port development⁵. De Rijke is also known as the father of flood-control dam especially for mountainous areas. Although he had never designed such dams as there is no mountain in his home country, he developed foundation of dam construction based on his knowledge on hydrodynamics and structural engineering. He also listened to local residents' observations for behaviour of river flows, and changed basic design of the system based on suggestions from them in some cases⁶. Later he became vice minister of the ministry of internal affairs in Japan, very rare case for a foreigner. He stayed in Japan for more than 30 years, with only 2 times short return to his home country⁷.

In the development cooperation after the Second World War, the way of knowledge transfer have changed the form since pre-industrialization. "Developed" countries, offer cooperation in forms of policy transfer, technical cooperation or investment on infrastructure with grant or concessional loans under the framework developed among donors' community. The offering countries are often former colonial powers or Asian states, who experienced economic growth after the post war era, which have completely different culture, climate and societal conditions.

⁵ <https://www.netherlandsandyou.nl/your-country-and-the-netherlands/japan/and-the-netherlands/dutch-japanese-relations>, accessed Mar. 2019

⁶ <https://ja.wikipedia.org/wiki/ヨハニス・デ・レーケ>, accessed Mar. 2019

⁷ http://www.maff.go.jp/j/nousin/sekkei/museum/m_izin/toyama_02/, accessed Mar. 2019

Chapter 1 Introduction

- This chapter introduces background, justification and objectives of the research, and research questions to be answered at the end of the research

Since the middle of 20th century, water resource management in the global south has been intervened by international development communities. The water governance of the Mekong River is not the exception. In Vietnamese Mekong delta, associated with the history of colonisation by different powers, division of the country into the North and South, and reunification, different interests, social settings and power balance making the distribution of water resource uneven and unjust. Contested interests of external actors are making the situation even more complex, leaving politically powerless people and voiceless aquaculture behind. Based on the situation, this study is aimed at understanding how these cooperation and background are forming water flows in the delta by focusing on interactions of international development partners.

1.1 Background information

A floodplain, an estuary or a delta is an area of land located at the most downstream of watercourse shaped by socio-economic activities and bio-physical processes, which keeps on evolving (van Staveren & van Tatenhove, 2016). Because of the attractiveness such as access to water, forest, rich soil and navigation, human beings have lived and cultivated food in deltas, which gradually made deltas congested. The illustration of chronographic evolution is that the delta can be a simple source of natural resources in the earlier stage with little or no conflict of interest, then turns into chaotic coexistence of “political and economic constraints” in time (Zegwaard et al., 2015, p434). Livelihoods in delta can be affected by human interventions from upstream, such as variations of river flow by dams, water extraction and discharge of used water, which can create power balance between states (Zeitoun & Warner, 2006). Also, deltas are vulnerable to environmental issues and extreme climate conditions such as flooding, storms and drought, as it is, by definition, located adjoining to the coast of river and sea (Syvitski et al., 2009). This feature caused deltas, especially those situated in the global south, described to be vulnerable to various human interventions and consequences of climate change (Renaud et al., 2013; Szabo et al., 2016), thus need for external assistances.

The Mekong delta is one of the areas where variety of actors are active for international cooperation including Dutch and Japanese governments (MRC, 2018), and both approaches are criticised differently. The most significant recent Dutch government’s cooperation in Vietnam is strategic delta planning in Mekong. Strategic delta plan is the process to materialize long term (from 50 to 100 years) vision of delta, which aims to accommodate societal needs in accordance with the eco-system and changing climate of the area (Seijger et al., 2017). Also,

the Dutch government initiated the delta alliance, the information sharing platform that aims to make deltas resilient, and is currently networking 15 countries worldwide (Delta Alliance, 2018). Assisted by the diplomatic policy developed to utilise its knowledge and expertise as a *product* for export, the Dutch delta knowledge travels through the network to different places in the world including the Mekong delta (MoFA the Netherlands, 2013; Zwarteveen et al., 2017). Some scholars argue that the application of such export of "experience and expertise" is highly politicized and need justification in its destination considering differences in social settings and changing environmental condition (Rap, 2006; Zwarteveen et al., 2017). Further, Zwarteveen et al. (2017) argue that the journey of Dutch delta knowledge to Vietnam has the intention to create more business opportunities for Dutch parties, and it was utilized to legitimise political agenda of Vietnamese government for further industrialisation.

On the other hand, as Japanese approach aims economic growth of Great Mekong Subregion (GMS)⁸ through infrastructure development, it defines Mekong delta as a part of the sub-region (JICA, 2018). They find insufficient economic infrastructure, fragile financial sector and business environment as the most important agenda for Vietnam (MoFA Japan, 2017). In their strategy, Mekong delta is described as a rice producer to feed the rest of the country, where productivity needs to be improved. Based on their problem definition, Japanese government has been promoting the corridor development approach, which brings large investments in transportation infrastructure development and necessary technical cooperation (JICA, 2018). These are materialised with substantial amount of Official Development Aid (ODA), loan and private investment (OECD, 2015). This cooperation is materialised in forms of short-term projects (from a few to 10 years) such as development of sectoral master plans, constructions and technical cooperation, while directly or indirectly causing depletion of ecosystem and livelihood of the local community, and excessive debt of recipient country (Kato et al., 2016, Chapter 20; Kondolf et al., 2018).

1.2 Problem statement

In the scholarship of development cooperation, water governance and policy transfers are often understood from a mono-scope on roles and relationship between a sender and a recipient, while neglecting the role played by other on-going international policy transfers and domestic development activities. If different case are compared, these are often policy transfers from one sender to a multiplicity of receivers. Therefore it is methodologically interesting to study the cooperation in light of different senders to a receiver. Moreover, the policies to be transferred are cultured in the context of the sender, not the recipient's. The process and motivations behind applications of policy transfer from different providers into that of a receiver are rarely studied. This research intends to fill these gaps in the scientific domain by comparing development cooperation activities between the Netherlands and Vietnam and Japan and Vietnam.

⁸ Inclusive economic zone spreading which covers China, Myanmar, Laos, Thai, Cambodia and Vietnam initiated by Asian Development Bank (ADB)

1.3 Research objectives

The objective of the research is to understand water governance in Mekong delta shaped by different approaches in the context of international cooperation by analysing changes in water flow. This has been studied by two elements; first, analysing the existing visions of Mekong delta and descriptions of water related issues by Dutch and Japanese government. In parallel, the solutions offered by Dutch and Japanese government are analysed to understand who ultimately benefit and who do not through these cooperation. By comparing different approaches by actors, this research aims to contribute better understanding of overall consequences of international cooperation and politics behind it from different aspects of the society. Moreover, it aims to understand direct and indirect effects of the cooperation to local livelihood in the delta through their perceptions to external interventions. The motivation of studying the topic is to understand overall consequences of development activities and contributions of people working for international cooperation including myself, and to be able to critically reflect on choices I, and other practitioners make as a water professional or a development worker.

1.4 Research questions

This research intends to answer following Research Question (RQ) and sub-RQs (SRQ) by comparing Dutch and Japanese cooperation to Vietnamese government in Mekong delta as a case study. The intension of following questions is to study water as material, and the water flow as the consequences of human interventions to the watercourse.

- RQ1. How do Dutch and Japanese cooperation with the Vietnamese government shape the water flow in Mekong Delta?
 - SRQ 1-1. What are the visions of Mekong delta developed by Dutch and Japanese government? What are the differences and similarities? Why are they different/similar?
 - SRQ 1-2. How do both visions describe water issues in Mekong delta? Who are describing them? Why they are problems to Dutch or Japanese and why not to the other?
- RQ2. What are (were) the solutions offered (or already offered and implemented) by Dutch and Japanese? Who benefits and do not benefit from them?
- RQ3. How do Vietnamese actors in the delta perceive these interventions?

Chapter 2 Literature review

- This chapter presents the approach for comparing different policy transfers in international context and the analytical framework for the comparison.
- In addition, it elaborates the elements of framework, consideration of complexities in water management and the relation to research questions proposed in the previous chapter.

2.1 Water flows and interventions

2.1.1 Definition of water flow and interventions

Until I started to study social science, *water* has been physically, chemically and biologically unique substance written as H_2O . Social study added so many different ways of perceiving water. Among others, the definition made by Bakker (1999, 2012), water as *politicised material* enlarged my conceptualization of water and fits better the purpose of this study. Based on the definition, I use *water flow* as the concept to describe the interaction between biophysical process and human activities, which take place within and around (mainly upstream of) delta for this research.

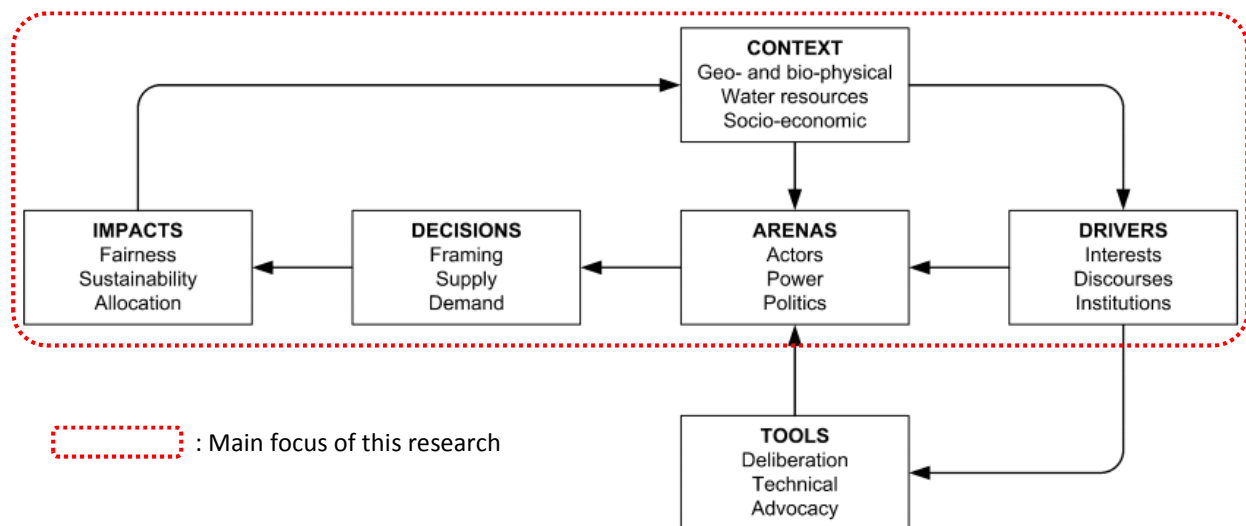
In addition, I propose three elements of water flow to understand it better. Namely, quantity, quality and risk, with consideration to the international cooperation activities around Mekong delta. First, quantity of water, which can be intervened by hydraulic infrastructures such as hydro-power dams, canals, sluice gates, dykes and irrigation systems (Evers & Benedikter, 2009a). Those are usually constructed under supervision of government (central or local) or international coordinating bodies utilising financial resources from donor or lender (Swedlund, 2017; Waibel et al., 2012). The quantity of water flow refers to the scale of interventions among them. Second, quality of water, which informs usability of water for agricultural, fishery, human consumptions, industrial purpose, as well as impact of human activities (Elshafei et al., 2014; Joffre et al., 2015). The quality explains how water can be used and how much those activities deplete water resource before discharging water back to ecosystem. Related interventions are technical transfers including research, for example, facilitate change of cultivated crop resulting change in irrigation water quality and usage of chemicals. Third, the risk brought by water flow either too much of water (floods) or too little (drought) (Di Baldassarre et al., 2013; Wesselink, 2016). These elements interrelate and one type of intervention can affect all elements in different extent, for example, dam construction affects principally quantity of water flow to make dry season wetter in certain area, while make other places (usually downstream) drier and shifting flood risk to different places as well (Hamasaki, 2010; Wyatt & Baird, 2007).

2.2 Development of analytical framework

2.2.1 Framework for analysis

For comparison and analysis of different approaches of water flow interventions, comparative frameworks are necessary (Bressers & O'Toole, 1992). Moreover, the level of analysis is also important factor for meaningful policy analysis.

Different scholars proposed analytical frameworks, such as, scales and levels from different aspects (Cash et al., 2006), for better understanding of water resource management in transboundary basin, and cross-level and cross-scale interactions (Dore & Lebel, 2010). Based on these studies, Dore et al. (2012) developed framework for analysing complexities in Mekong region as shown in figure 1. As the framework is already tailor made for the research area and covers elements for the analysis, I conducted this study base on the framework proposed by the authors, and the conceptual frameworks were developed based on the elements indicated in the framework except tools⁹.



Source: (Dore et al., 2012), modified by author

Figure 1. Framework for analysing transboundary water governance complexes

In the next section I build further on this framework for the purpose of this comparative research. There are two different frameworks; one is for international level analysis in relation to donor-recipient, and another is for riparian states- delta local level.

2.2.2 Analytical framework for donor-recipient relationships

Donor-recipient relationship is relevant to understand why and how the type and scale of the interventions are defined by donors in relation to recipient country, which is related to RQ1

⁹ Tools in the framework signify the methodologies to convert (scientific) knowledge and findings into grounds of decisions. In local-community level, different types of participatory approaches and tools have been proposed for strategic delta planning (Seijger et al., 2017), and for urban adaptation workshops (McEvoy et al., 2018). However, in this research, development and application of the tool is out of scope, so this part is left without exploration.

and partially to RQ2. Based on the existing researches (which I elaborate more in the following section), I developed the framework as figure 1.

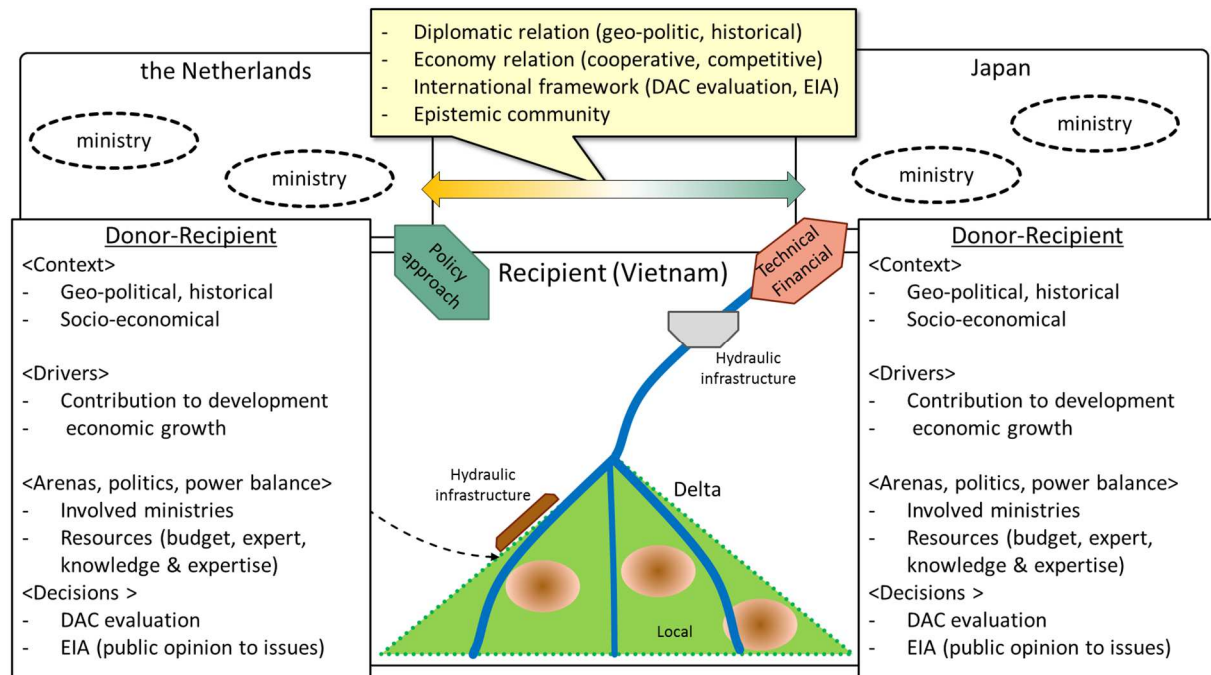


Figure 2. Framework for the research (International: Donor-recipient)

2.2.3 Analytical framework for sub-regional - local community level

Another framework is the one for riparian states-delta-local level, which corresponds to RQ2 and partially to RQ3 for local actor's part (see figure 3). In developing this framework, I engaged riparian level context and driver as a part of geo-physical context in local level.

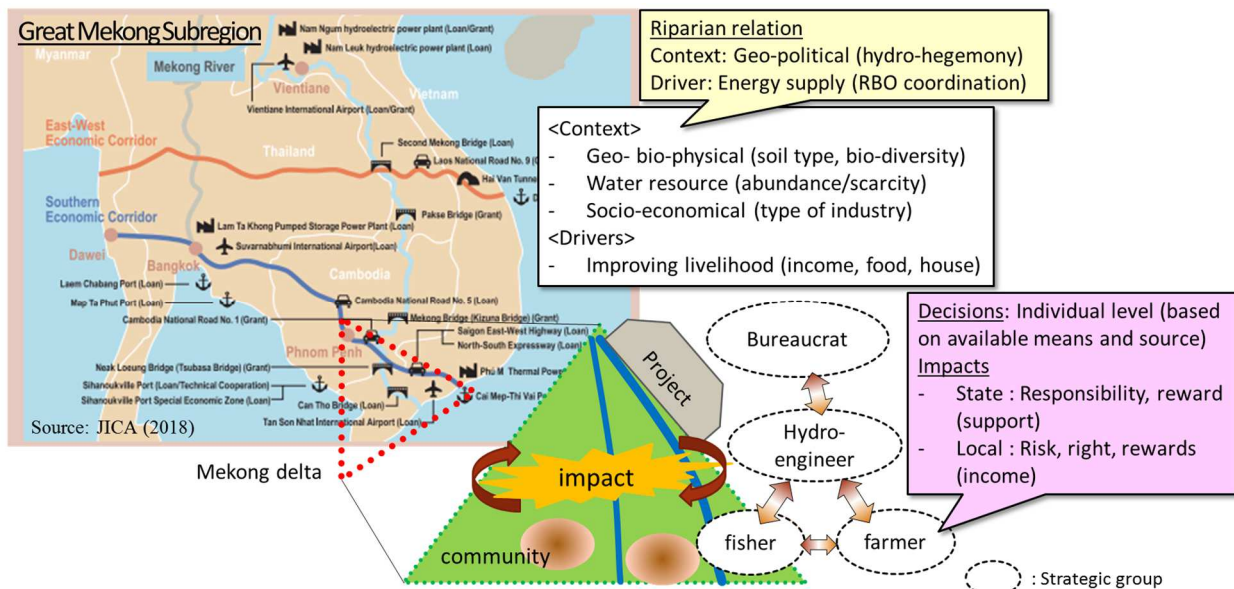


Figure 3. Framework for the research (Subregional-Local level)

Following part elaborate each element of analytical framework by local level inside and around the delta, and international level in relation to international cooperation, in other words, donor and recipient relationships.

2.2.4 Context

Unpacking the context helps to understand quasi-pristine water flow and background information for social structure in the study area. From the local perspective, geo- and bio-physical feature can be as simple as fertile soil transported by river flow and bio-diversity cultivated by the land and rich water resource, which then define the function of a delta in the society, such as, agricultural producer (Biggs et al., 2009). The nature based orientation of delta in the society flames the functions and societal structure of the area as follows. To build an infrastructure to control water flow and properly maintain it, different groups of people are needed. For instance of an irrigation system, a leader who orders and gathers labours, materials and financial providers are necessary. In developing countries, the leader's role is played by government or government hired experts. Financial resource is covered by ODA or foreign investments, and maintenance tasks are allocated to users (Evers & Benedikter, 2009a).

When zooming out to riparian level, which involves several states, the context becomes more complexed. The hydraulic description of water cycle starts when a rain drop gathers into the source of river in highland. Then it flows toward lower land, sometimes be trapped in reservoirs for power production or irrigation, runs through forests, cities and communities, then finally arrive at and go through delta, and joins to the sea (Pallett et al., 1997). This journey can be interrupted by hydraulic engineering structure such as dams and dykes, domestic water use, agricultural activities, dykes and surge barriers and non-physical power that attempt to govern water (Molle et al., 2012). The river is the source of water for millions of people for different cultures and uses, sometimes the consumptive usage of water in a place cause shortage of water in another place which may cause conflict among usages and states to which different people belong (Dore et al., 2012).

Geo-physical context forms riparian relationship, generally upstream states have more power to appropriate water resource than downstream ones. This creates hegemonic power balance between upper and lower riparian states, where deltas locate. There are variety of exceptions of simply describing upstream is stronger and less so for downstream, such as, Vietnam being partially upstream to Cambodia via tributary of Mekong river (Wyatt & Baird, 2007). I considered this hegemonic factor as one of key in analysing politics behind some of choices that Vietnamese government make to strengthen their position.

In international level, geo- and bio- physical feature is less present and the context become more economic dominated. Several scholars analyse the indices that determine donor's policy for allocating resources to recipient countries (Akiyama et al., 2008; Calleja et al., 2016; Neumayer, 2003c, 2003a). Among others, Neumayer's findings on worldwide allocation of aids from econometric analysis among bilateral donors are useful in analysing the context underlies in the relations between recipient and donor states (Neumayer, 2003b, 2003c, 2003a). Overall, economic states such as GDP and import/export between nations, colonial relationships, and geophysical proxy are key factors for the amount of aid allocated through bilateral channels.

2.2.5 Drivers: interests and institutions in each level

Analysing drivers is helpful to understand interests among different actors, construction of institutions and different visions of actors to answer. In local context, improving livelihood in terms of income generation, food and house security are the main driving forces for water management (Tacoli, 2009). To sustainably achieve them, people organise themselves by dividing tasks and build an infrastructure that control water flow, such as irrigation network (Evers & Benedikter, 2009a). The authors illustrate the formation of “strategic group” associated with irrigation system development, which is the group of people who share the benefit of accessing water, and aim to improve social status in long term. The strategic group includes private financial providers who try to increase their asset by investing such public works. In riparian level, the drivers are energy supply, improvement of trade, poverty reduction and climate change (Grumbine et al., 2012). River Basin Organizations (RBOs) are one of the institutions to coordinate riparian states (Molle, 2008), and they face water governance challenges such as quantity, quality and environmental protection (Schmeier, 2012, p. 68). Furthermore, lack of autonomy for controlling development activities individually developed by member states and limited participation of (upstream) riparian states make RBO’s functionality limited.

The contribution to development and economic growth are dominant drivers for water management in international level (JICA, 2018; White, 2002). This affect the level of involvement of different institutions, such as ministries and governmental authorities in decision making process of donor country (Kawai & Takagi, 2001). In addition, asymmetric composition of states and institutions should be taken into consideration in analysing institutions (Cleaver & De Koning, 2015). For instance, modern democratic nation follow the principle of separation of power among administration, legislation and judicator. Also, the administration is usually demarcated by sectors in form of ministries and departments, and the structure varies by country.

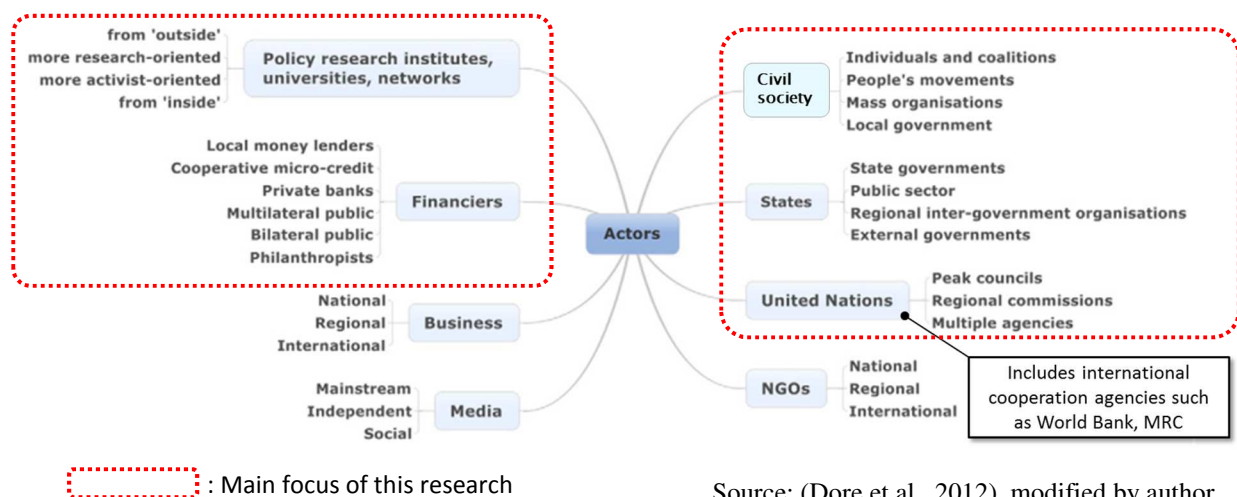
2.2.6 Arenas: politics, power balance among actors

Arenas represent politics and power balance among actors, which are complex and formulated by contexts and drivers (Dore et al., 2012). In local level, several researchers found that local community such as farmers, fishermen and urban dwellers are one of prominent actors in complexed socio-environmental interactions in delta (Tran et al., 2018). For instance, farmers mobilise their agency by selecting type of crops, or city dwellers’ choice of work place may change total labour force in a factory, which ultimately impact on water quantity and quality (Birkmann et al., 2012). Even though impact of their choices are subtle at individual level; however, it can be impactful collectively. Moreover, the existence of community level actor is necessary to make local leaders and experts such as hydraulic engineers and bureaucrats powerful, as these power is not absolute but relative to less powerful group (Evers & Benedikter, 2009b).

Power balance can be created or influenced by external supports provided by donor by means of technical transfer or financial assistance. For instance, donors in bilateral cooperation mobilise the schemes they have, such as technical cooperation (with knowledge and experts),

grant and loan (provision of finance), or combination of both (Berthélemy & Tichit, 2004). Also, power balance among different institutions within bureaucratic structure of donor government define the frame of development projects including the amount of budget allocated through ODA (Kawai & Takagi, 2001).

Multilateral organizations composed of multiple member state, which include development banks such as World Bank (WB) and Asian Development Bank (ADB) are another type of actors, who enhance power of some actors in development to achieve their own political agenda. They also play important role in allocating funds and guide direction for international cooperation, through development of guidelines, for example, of environmental considerations in project implementation (Neumayer, 2003c). Multilateral actors play role in formulating “epistemic community”, which plays significant role in shaping water flow in recipient countries (Adler & Haas, 1992; Meijerink & Huitema, 2017). It does not limit as network for politicians and technocrats in sharing information, sometimes become as powerful as moving policy outcomes far beyond the control of domestic policy makers (Kemerink-Seyoum, 2017). The network also facilitate production of knowledge and expertise, generalize them as instrumental tool and travel around the world as promising universal approach (Rap, 2006). In sum, types of actors in different levels can be described as in figure below.



Source: (Dore et al., 2012), modified by author

Figure 4. Water governance actors in the Mekong region

2.2.7 Decisions that determine supply and demand

Decisions are generated or shaped by arena. Modification in supply and demand of water are largely related to power and politics elaborated in the previous section. In the community level, the choices of means and measures to improve livelihood are actively made upon the available resources, techniques and information. For instance, when the average temperature increase to impact on productivity of crops, farmers may seek available crop types which are more suitable for the current environment, or seek for crops with high market demand to generate more income (Garschagen, 2013). In case of reactive decision, for instance, those related to flood risk, choices on where to live, when to sell products are made based on accessible information (Birkmann et al., 2012). In both cases, formal or informal institution that are more powerful than the owner of choice, such as local authority or agribusiness company provide the means and information source for decision making (Kuenzer & Renaud, 2012).

Decisions of donors on development projects are shaped by several framework. Among others, the evaluation framework initiated by OECD and the socio-environment consideration guidelines developed by WB are most influential ones in practice¹⁰ for projects involving infrastructure development. Development Assistance Committee (DAC: one of the OECD committees) is responsible to coordinate bilateral and multi-lateral cooperation, to facilitate evaluations based on five criteria¹¹, and initiate review sessions among member states¹². Based on the recommendation made in the review, the donor country decides to follow or not to follow (OECD, 2014, 2017). The latter framework, well known as EIA (Environmental Impact Assessment) have influenced decision making in large scale infrastructure, such as construction of hydropower dams and irrigation schemes (Molle et al., 2009, Chapter 2). Until mid-1990's, WB, ADB and other multilateral banks had financed dams constructions and it created momentum of investment to large scale hydro infrastructure (Goodland, 2010). Afterwards, seeing the negative consequences of those projects and grown resistance to the direction of development, banks developed strict socio-environment impact assessment frameworks and halted investment to dams, then other donors followed it (Hamasaki, 2010). In these ways, international frameworks affect decisions of bilateral donors, which may change the trend of development project related to supply and demand of water resource.

2.2.8 Impacts

Dimensions of impact vary based on the framework of assessment. Dore et al. (2012) proposed considering impacts in terms of fairness and sustainability of resource allocation, and 4Rs (rewards, risks, rights and responsibilities) for key elements to assess impact. Authors refer an example of the dam built upstream of transboundary river basin and analyse the case based on the framework. As the result, all elements were questionable. For instance, compensation (rewards) to the community that resettled involuntary were underestimated, and there were no mechanism for the community to participate decision making process (rights), and the distribution of risks to downstream riparian countries and communities were not sufficiently studied (Dore et al., 2012). In addition, another study showed that EIA, which is responsibility of project owner (usually the government or (semi) private investor) is implemented insufficiently without consultation to the affected communities (Wyatt & Baird, 2007). For international level framework, the analysis of impact follow similar procedure as the scale of intervention, such as hydraulic infrastructure is alike, and impacts defuse somewhat in top-down direction.

For local level, impacts are more interrelated or occur in multi-dimensional manner as water flow in local level change its directions depending on the season (Hung et al., 2014). For example, sea water flow into inland during dry season, while sweet water flow out into sea during wet season, and the impact of water pollution flow accordingly. This multi-dimensional flow needs to be considered in analysing impact at local level.

¹⁰ Based on author's experience in development cooperation agency

¹¹ Relevance, effectiveness, efficiency, impact and sustainability:
<http://www.oecd.org/dac/evaluation/daccriteriaforevaluatingdevelopmentassistance.htm>

¹² <http://www.oecd.org/dac/dacmembers.htm>

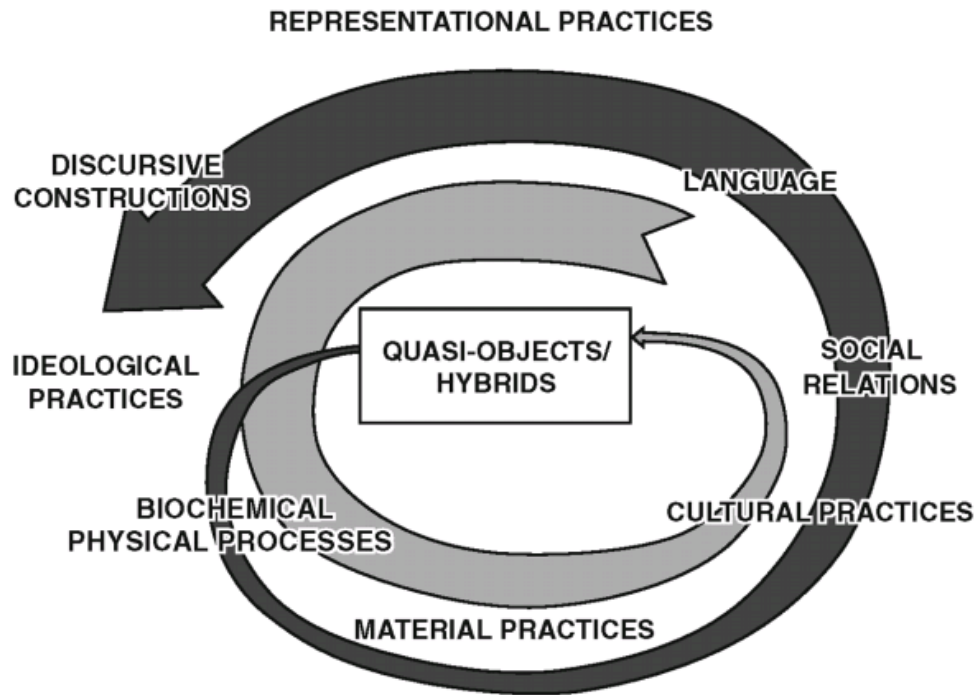
2.2.9 Inter-dependency of elements

Bressers & O'Toole (1992) highlighted that it is important to specify dependent and independent elements to meaningfully utilise the framework for comparison analysis. However, in this framework, all elements are interdependent in certain extent. In addition, application of the framework is highly contextual. Therefore, I will reconsider this component after analysing previously mentioned elements of analytical framework. Authors also highlighted the importance of unit of analysis and level of analysis in explorative research (Bressers & O'Toole, 1992). Unit of analysis will be elaborated in the Methodology part, and the level of analysis will be presented in the following section.

2.2.10 Approaches to understand insights and complexity of water management

International cooperation plays significant role in shaping water interventions, which accelerate, divert and stop or revert water flows in many places including Vietnam. These refer to policy transfers including financial investments and provision of technical expertise in water sector, usually mobilised under the framework of Official Development Assistance (ODA). Molle (2008) proposes to reflect on how the “successful” case are described and the overarching approaches that are taken to make these case famous and superior to others. Also he elaborates three typical approaches of making “success”, namely, “nirvana concepts”, “narrative and storylines” and “icons and models”. Nirvana concepts project ideal images of the result of interventions, which reject disagreements in details and they prescribe approaches that fit in any condition. Narrative and storyline provide the way to describe the successful stories in certain ways so that “success” can be reproduced in somewhere else (Rap, 2006). Actors those who share the similar missions use the same storyline to associate there approaches to highly authorised institutions such as World Bank (WB). Icons and models refer the approach to showcase certain example of development interventions such as Tennessee Valley Authority. Those are sometimes combined each other and make it even more difficult to understand the reality of policy making processes.

Another scholar, Swyngedouw (2015) proposes to examine the process of hydro-objects making as complexed, highly politicised and sometimes bloody struggles of people (see figure 5). For him, a cup of water is not something tasteless, transparent and clean. It is the essence of sweat, money and blood as conveyance and treatment of the water involve enormous amount of labour, accidents and deaths. These scholars' suggestions are that there are no promising success nor applicable science to materialize water interventions in the simplified way. Rather, those are complicated and highly politicised, and those can be better understood by investigating empirical data and neglected stories. I take these into account in analysis and discussion of this research.



Source: (Swyngedouw, 2015)

Figure 5. The production of socio-nature

2.3 Conclusion

In this chapter, water flow and three elements of flow are defined. Then the analytical framework for comparison of international and domestic water governance and its elements are elaborated. Taking into account that the level of analysis is important consideration for meaningful policy analysis, I extended two different conceptual frameworks. One is for international level analysis in relation to donor-recipient, which corresponds RQ1 (SRQ1-1 and 1-2), and partially to RQ3. Another conceptual framework is for riparian-delta level, which corresponds RQ2 and partially to RQ3 for local actor's part.

Chapter 3 Methodology

- This chapter presents the approaches that are deployed for this research. The analysis is mostly qualitative and intrinsic to the case of Vietnamese Mekong delta.
- Followed by the introduction of case study, research strategy, relation between research questions and information source, selection of interviewees, content of interview, and the timeframe of research are presented.

3.1 Research design

3.1.1 Intrinsic and explorative case study from subjective position

I conducted this research intrinsically by exploring the development cooperation offered by Dutch and Japanese government to Vietnamese government in relation to Mekong delta, and comparing different approaches by these governments. The analysis is based on qualitative data, partially combined with existing quantitative data such as statistics and census.

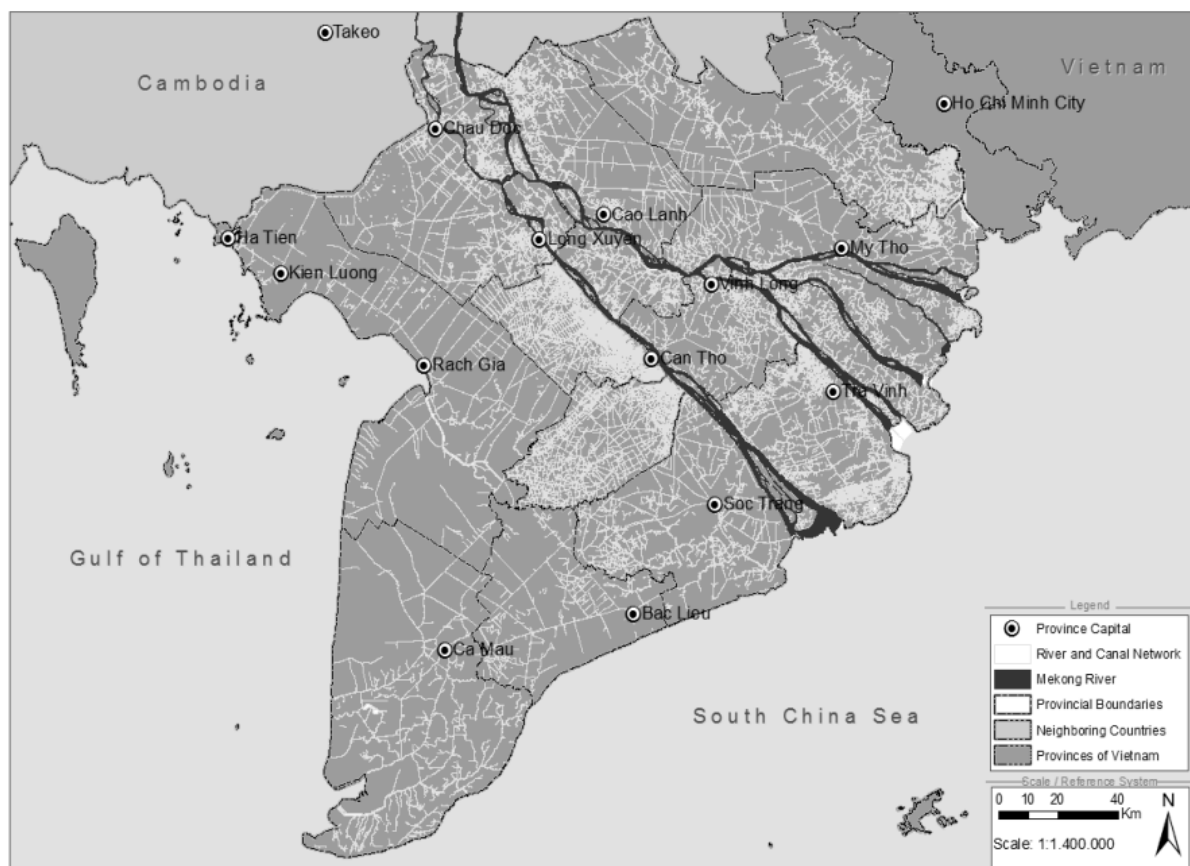
In general, researchers in similar studies take critical objective positions to analyse the object of their research. In contrast, I position myself as subjective researcher for this topic, as I had been some of actors in Japanese international cooperation activities. My positions in international cooperation had been grass root volunteer, administrative project coordinator, project formulation officer, and technical consultant for Japan International Cooperation Agency (JICA). Taking subjective view allowed me to understand actors' trade-offs, difficult choices and struggles, which are usually excluded from the analysis.

3.1.2 Description of case study

The Mekong delta physically spreads nearly 6 million hectares on the territory of Vietnam and Cambodia, roughly two-thirds of its surface located in Vietnam (Biggs et al., 2009). The Vietnamese Mekong delta plays the important role in many terms, especially agricultural production for domestic consumption and exporting purposes, and the area is recognized as the *rice bowl* of the region (Kuenzer & Renaud, 2012). The consequences of dam construction in upstream countries, high demand for freshwater and intensive extraction of groundwater resulted in significant sea water intrusion, and the dense population increased the risk of water related disasters (UNDP Vietnam, 2016; WB & GFDRR, 2017). In addition, the political environment along Mekong river basin is highly contested among riparian states and donors (non-riparian states and multilateral organizations) including Dutch and Japanese government (Dore et al., 2012; F. Molle et al., 2009). At the same time, the country has been experiencing rapid economic growth and high possibility of external interventions by actors; therefore, the direction of development is highly uncertain.

Considering the situation, the Vietnamese government (GoV) in collaboration with Dutch government developed the Mekong Delta Plan (MDP) in 2013 to indicate the pathway toward

sustainable development (Seijger et al., 2016). Vietnamese government made choices on the future vision based on scenario developed and the government approved the MDP. On the other hand, Japan has been the largest donor to Vietnam in the past decade with contribution accounts 2.5 billion USD (48% of total ODA to Vietnam in 2016), while Dutch contribute less than 0.1%¹³. In addition, Direct Foreign Investment (DFI) from Japan to Vietnam was 9.1 billion USD in 2017 (MoFA Japan, 2018b), while the cumulative DFI of Dutch private parties was 8.1 billion USD in the end of 2016¹⁴.



Source: (Evers & Benedikter, 2009a)

Figure 6. River and canal network in Mekong delta

Japanese strategy is to contribute development of GMS in line with the regional development plan initiated by the ADB. The government has been investing extensively in the development of economic infrastructure for the entire sub-region (JICA, 2018). Based on the fact that both Dutch and Japanese governments have assisted the Mekong River Commission, this research took the entire Mekong River Basin into account in analysing interventions made in the past. Also, I considered Ho Chi Minh City (HCMC) as a part of research area, as the city has impact on socio-economic activities in the Mekong delta and vice versa (Kontgis et al., 2014).

¹³ See appendix 1)

¹⁴ The definition of cumulative FDI was not mentioned, source: <https://www.rvo.nl/sites/default/files/2018/01/doing-business-in-vietnam.pdf>, accessed Mar. 2019

3.1.3 Object and unit of analysis

The objects of analysis are states, public or (semi) private institutions, which were (partially or entirely) involved in decision making, formulating, negotiating and implementing international cooperation activities in the research area. The relation among those institutions are studied to analyse the context, driver, arenas, decisions and impact of each country. Also I analysed the description of visions, water issue, and solutions offered in the cooperation projects listed in the table 1 for answering research questions. The analysis of the projects in the past and on-going projects were made based on grey documents, journal articles, semi-structured interviews.

Unit of analysis is formal or informal institution which share the same value for their decision making, power relations to others and interests. Therefore it varied from states, ministries, implementation agency, research institutions and departments in those institutions to group or individual farmers.

Table 1. Objects of analysis in relation to research questions

| The Netherlands | Japan |
|--|--|
| <u>Past: before 2013</u> <ul style="list-style-type: none">- Funding for MRC- Mekong Delta Plan by NEDECO (1993)- Towards a Mekong Delta Plan (2011) | <ul style="list-style-type: none">- Technical cooperation to MRC (include upstream hydropower dam construction)- Sluice gates constructions- Sewage network construction in HCM city |
| <u>On-going (since 2013)</u> <ul style="list-style-type: none">- Strategic Mekong delta plan and other associated activities (PM resolution 120)- Collaboration with Can Tho University (CTU) | <ul style="list-style-type: none">- CTU: ODA Loan and technical cooperation (three disciplines: agriculture, fisheries, environment) |

3.2 Research strategy: operationalisation

3.2.1 Overall structure of the research

In relation to RQs and actual study activities, RQ1 (including SRQ1-1, 1-2) and RQ2 had been studied in parallel, starting with the analysis of strategic Mekong delta planning and other cooperation listed in the table 1. For the operation, at first I referred and organised the information on available documents about Dutch cooperation, and supplement the information by interviewing Dutch actors. These processes were intended to support filling the elements in the conceptual framework, clarifying the relations between elements within a state (dependent or independent relationships) and network among the elements of states. Secondly I proceeded to do the same for Japanese cooperation. In both interviews to Dutch and Japanese actors, I asked for their Vietnamese counterparts so that I can contact them in answering RQ3. Overall research structure is shown in the figure 7 below. In the figure, I listed elements of framework that were related to each research question.

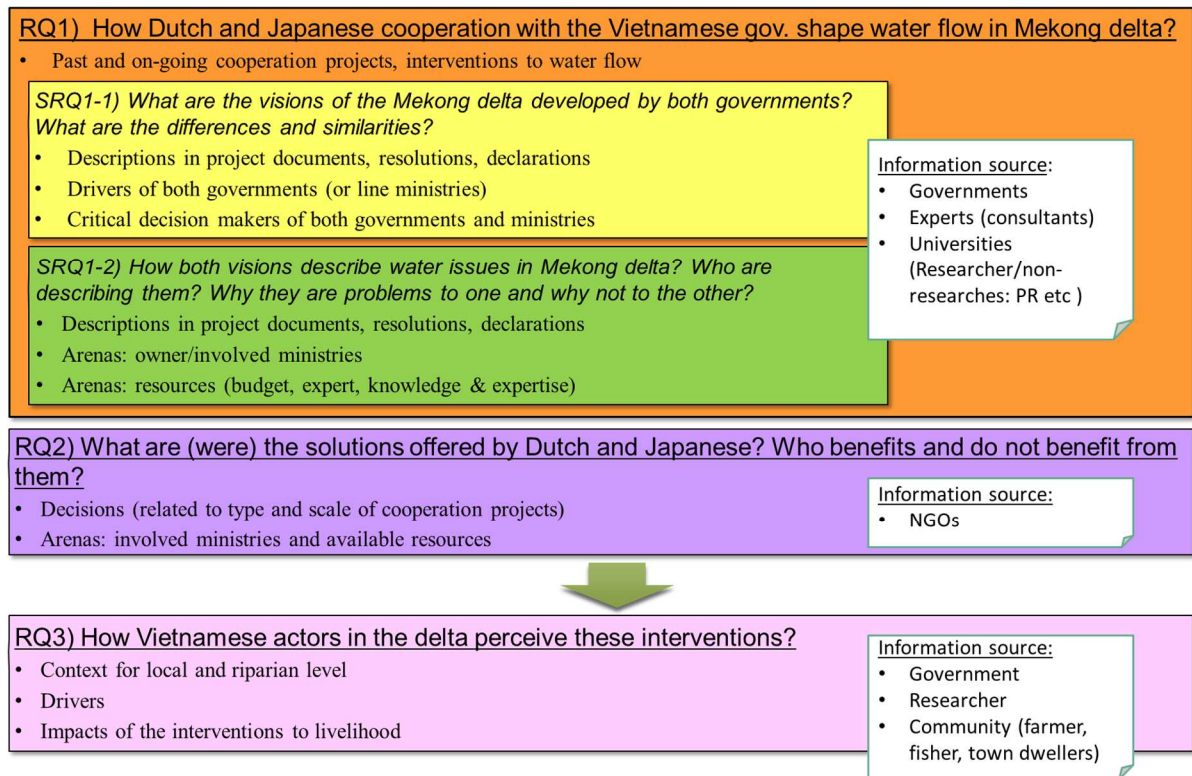


Figure 7. Overall research structure

3.2.2 Selection of information source

Intended interviewees are as listed in table 2. These were at first, selected from the list of interviewees in the past studies conducted by IHE and participants of research project “NWO UDW Strengthening Strategic Delta Planning”. Dutch and Vietnamese interviewees were selected among those contacts. For Japanese information source, I first contacted past colleagues and asked them to share the potential interviewees those who have worked in the research area. In case potential interviewee was not available for interview, I requested to fill in the questionnaire or collected the information through internet.

Table 2. Affiliation or types of intended interviewees

| The Netherlands | Vietnam | Japan |
|---|---|---|
| <ul style="list-style-type: none"> Government (MoFA, MIWM ^{a)}) Experts (Consultants) Researchers (IHE: engineering, governance dept., TU Delft etc) <p><i>Italic: document based</i></p> | <ul style="list-style-type: none"> Counterpart institutions for Dutch and Japanese cooperation (CTU^b) <i>Farmers, fishermen</i> <i>NGO (IUCN)</i> | <ul style="list-style-type: none"> Government (include semi-governmental) (JICA, JOGMEC^c) Experts (Officials, Consultants) Researchers (universities, research institutions) <i>NGO (Mekong watch)</i> |

a) Ministry of Infrastructure and Water Management

b) Can Tho University

c) Japan Oil, Gas and Metals National Corporation

3.3 Data collection

3.3.1 Understand the framework of each state

Data had been collected to fill all elements of conceptual frameworks for Dutch, Japanese and Vietnamese governments and actors under these governments. Information sources were mainly existing documents and information on website, and supplementary triangulated through interviews. Types of information source are research papers, (research) books, reports (academic and practical), and news.

3.3.2 Data collection related to research questions

Data and information related to RQs were obtained mainly through semi-structured interviews and questionnaires in case a face to face interview was not possible. Interviews were conducted in English for non-Japanese interviewees. Preliminary contents of semi-structured interview, categories and questions are described in the table 3.

The interviewees were comprised with 12 Dutch experts and governmental officers (including non-Dutch but the Netherlands based experts and researchers), 11 Japanese experts and (semi)-governmental officers, 10 Vietnamese experts (including researchers and those who are working for foreign agencies), and 4 questionnaires from Japanese experts. Each interview lasted between 45 and 120 minutes, with some follow up questions via email in case it was necessary. The list of interviewees are as shown in the table 4.

Table 3. Preliminary semi-structured interview questions related to Research questions

| Research Questions | Possible interviewee | Possible questions | comments |
|---|--|---|----------|
| <u>RQ1) How Dutch and Japanese cooperation with the Vietnamese gov. shape water flow in Mekong delta?</u> | | | |
| <u>SRQ1-1) What are the visions of the Mekong delta developed by both governments? What are the differences and similarities?</u> <ul style="list-style-type: none"> Drivers of both governments (or line ministries) Critical decision makers of both governments and ministries | <ul style="list-style-type: none"> Dutch officials (MoFA) JICA officers | <ul style="list-style-type: none"> Background of implementing the project(s) Involved ministries in planning Catalyst or trigger to initiate the project(s) Counterpart governmental organizations other than the client (if there are any) | |
| <u>SRQ1-2) How both visions describe water issues in Mekong delta? Who are describing them? Why they are problems to one and why not to the other?</u> <ul style="list-style-type: none"> Arenas: owner/involved ministries Arenas: resources (budget, expert, knowledge & expertise) | <ul style="list-style-type: none"> Gov. officials NL: Consultants/JVs involved to strategic Mekong delta plan JP: Consultants involved in the projects | <ul style="list-style-type: none"> Reasons of focusing on the specific issues mentioned in vision (in comparison to another problem descriptions) Consultant : ToR for the consultancy/research work | |
| <u>RQ2) What are (were) the solutions offered by Dutch and Japanese? Who benefits and do not benefit from them?</u> <ul style="list-style-type: none"> Decisions (related to type and scale of cooperation projects) Arenas: involved ministries and available resources | <ul style="list-style-type: none"> Gov. officials NL: Consultants/JVs involved to strategic Mekong delta plan JP: Consultants involved in the projects NL/JP: researchers, NGO | <ul style="list-style-type: none"> Were there long list of solutions in the process? If so, what was criteria for short listing? Were there limiting factors (financial, human resource) Who/which institute oversaw the solution proposal? | |
| <u>RQ3) How Vietnamese actors in the delta perceive these interventions?</u> <ul style="list-style-type: none"> Context for local and riparian level Drivers Impacts of the interventions to livelihood | <ul style="list-style-type: none"> Vietnamese counterparts, researchers, administrators from universities Local community | <ul style="list-style-type: none"> What is the role of interviewee in the planning/implementation of the project (in relation to their affiliated institution) What were change of water availability during past decade, how did the interviewee cope with the change? | |

Table 4. List of interviewees and respondents for questionnaire

| Ref. No. | date | description | | career stage |
|----------|--------|------------------------------------|-----------|--------------|
| NL1 | 181109 | Dutch consultant | technical | early-mid |
| NL2 | 181115 | Dutch researcher | social | early-mid |
| NL3 | 181115 | Non-Dutch researcher | social | early |
| NL4 | 181120 | Non-Dutch researcher | technical | senior |
| NL5 | 181121 | Dutch research institution officer | other | middle |
| NL6 | 181122 | Dutch official | technical | senior |
| NL7 | 181127 | Dutch researcher | social | senior |
| NL8 | 190114 | Dutch official | social | senior |
| NL9 | 190116 | Dutch consultant | technical | senior |
| NL10 | 190124 | Dutch consultant | social | senior |
| NL11 | 190130 | Dutch official | social | senior |
| NL12 | 190308 | Dutch consultant | technical | senior |
| JP1 | 181210 | Japanese consultant | technical | senior |
| JP2 | 181211 | Japanese consultant | social | senior |
| JP3 | 181213 | Japanese official | technical | senior |
| JP4 | 181214 | Japanese officials | technical | mid-senior |
| JP5 | 181215 | Japanese consultant | technical | senior |
| JP6 | 181221 | Japanese official | technical | senior |
| JP7 | 190115 | Japanese official | social | middle |
| JP8 | 190115 | Japanese official | social | middle |
| JP9 | 190116 | Japanese researcher | technical | middle |
| JP10 | 190123 | Japanese official | social | middle |
| JP11 | 190124 | Japanese official | social | middle |
| VN1 | 190115 | Vietnamese intl. institute | technical | middle |
| VN2 | 190115 | Vietnamese intl. institute | technical | middle |
| VN3 | 190115 | Vietnamese official | technical | senior |
| VN4 | 190116 | Vietnamese intl. institute | technical | middle |
| VN5 | 190122 | Vietnamese researcher | technical | senior |
| VN6 | 190122 | Vietnamese researcher | technical | senior |
| VN7 | 190122 | Vietnamese researcher | technical | mid-senior |
| VN8 | 190122 | Vietnamese researcher | technical | mid-senior |
| VN9 | 190122 | Vietnamese researcher | social | mid-senior |
| VN10 | 190124 | Vietnamese researcher | technical | mid-senior |
| QJP1 | | Japanese consultant | technical | mid-senior |
| QJP2 | | Japanese consultant | technical | senior |
| QJP3 | | Japanese official | social | early-mid |
| QJP4 | | Japanese researcher | technical | middle |

3.3.3 Timeframe of the research

I conducted this research mainly by four components, namely; 1) Desktop research, 2) Interview, 3) Data analysis, and 4) Aggregation and conclusions. First, I collected and analysed available literatures such as research papers, books and grey sources accessible via internet. Second, interviewed researchers and officers in the Netherlands, who have been to the research area for better understanding of Dutch approach, then travelled to Japan and to Vietnam for interviews. For Japanese interviewees who were not available during my stay in Japan, I collected information using questionnaire, and for Dutch experts, I interviewed them after I came back to the Netherlands. In parallel to interviews, I analysed them and reflected to later interviews. At last, I compiled all results and drew conclusions. Overall schedule of the research was as shown in the table 5.

Table 5. Timeframe of the research

| | Oct. | | Nov. | | | | Dec. | | | | Jan. | | | | | Feb. | | | | Mar. | | | |
|----------------------------------|------|----|------|----|----|----|------|----|----|----|------|----|----|----|----|------|----|----|----|------|----|----|----|
| | w4 | w5 | w1 | w2 | w3 | w4 | w1 | w2 | w3 | w4 | w1 | w2 | w3 | w4 | w5 | w1 | w2 | w3 | w4 | w1 | w2 | w3 | w4 |
| item | | | | | | | | | | | | | | | | | | | | | | | |
| 1) Basic information collection | | | | | | | | | | | | | | | | | | | | | | | |
| 2) Interview | | | | | | | | | | | | | | | | | | | | | | | |
| - Preparation of interview | | | | | | | | | | | | | | | | | | | | | | | |
| - Interview to Dutch actors | | | | | | | | | | | | | | | | | | | | | | | |
| - Interview to Japanese actors | | | | | | | | | | | | | | | | | | | | | | | |
| - Interview to Vietnamese actors | | | | | | | | | | | | | | | | | | | | | | | |
| 3) Data analysis | | | | | | | | | | | | | | | | | | | | | | | |
| 4) Aggregation and conclusions | | | | | | | | | | | | | | | | | | | | | | | |
| (draft) submission | | | | | | | | | | | | | | | | | | | | | | | |

winter holiday
 *) additional interview to Dutch actors

3.3.4 Ethical considerations

Throughout the research, especially for interviews, I followed the principal of informed consent in advance to interviews, and kept anonymity and confidentiality of interviews, while keeping affiliation of interviewees on the record exclusively for analytical purpose.

3.4 Conclusion

In this chapter, I presented the subjective position to research objective, introduced the object of the research and unit of analysis. Then for the operationalization of research, the research design comprised with desktop research, semi-structured interviews, and utilisation of questionnaires are presented.

Chapter 4 Dutch and Japanese Cooperation to Vietnam

- This chapter presents context, drivers, arenas, decisions and impacts of Dutch and Japanese cooperation to Vietnam.
- These focus on describing how international cooperation policy have evolved and how actors' roles have been divided and shifted in time.
- These descriptions follow the conceptual framework proposed in chapter 2.

4.1 Context of Dutch cooperation

“God created the world, and the Dutch created the Netherlands.”

- *Old saying (Bijker, 2002)*

4.1.1 History of Dutch international cooperation

Reference to “Dutch” appears in the waterscape of Mekong delta as early as 1930’s along with colonialism and urbanisation of the delta (Biggs et al., 2009). Together with industrialised dredging technique, “Dutch dike” had been brought by French colonists who were inspired by the technique introduced elsewhere. These contributed to reclaim habitable and arable lands to accommodate growing population at that time. Although introduction of these techniques was not directly by Dutch and these eventually caused environmental and social issues, these were favoured by different governors such as Americans and Vietnamese politicians. It was because of political and financial nature of techniques that need continuous investments and facilitates construction business in the country.

In the Netherlands after 1945, there were 860 returning civil and irrigation engineers who used to work for Dutch East India Company mainly in the field of tropical agriculture, and then lost their work places (Luchtenbelt, 2015). These exotic engineers were those who stayed in the colony for long time except for Christmas and they also stayed close to influential people¹⁵. The government established the Netherlands Development Cooperation (NEDECO) as a platform to bundle expertise of individual engineering firms and to enhance their competitiveness in the international market. Back then, Dutch hydraulic engineers were not yet recognised as they are nowadays, and needed such support from the government to be internationally competitive. Also, individual engineering companies such as DHV and Royal Haskoning strengthened their expertise and strategy to gain in international competitions through the platform and by responding to domestic needs for reconstruction and total planning of hydraulic infrastructures. They became autonomous around 1970’s, when the Vietnamese war was about to be over.

¹⁵ From the lecture “Traveling knowledge: Dutch delta knowledge” by Arjen Zegwaard, on 16 July 2018

Officially, the bilateral cooperation between Vietnam and the Netherlands started in 1973, when the Paris Peace Accord was signed. The relationship did not cease even during the isolation of Vietnamese government from international community (Diplomat magazine, 2017). This has been the longest post war diplomatic relation for a western state with Vietnamese government. Since then, the Netherlands has allocated ODA to Vietnam with the focus to health and education sector as well as water resource management. For instance, in 1974, the Netherlands Delta Development team made recommendation on hydraulic manipulations and increase of agricultural production in the lower Mekong delta (Biggs, 2012a, pp. 227–228). About the same period, the research collaboration between CTU and Wageningen University had started, and this has been the strong tie between two universities¹⁶.

Dutch government also provided financial and technical support to Mekong Committee in late 1970's to supplement the run out of initial budget, and participated revision of Indicative Basin Plan in 1987 (Hori, 2000; JICA, 1996). Although these were not under bilateral cooperation, ultimately influenced the water flow into Mekong delta. While the socialist government tried to improve productivity in Mekong delta through hydraulic projects and modernization, the outcome was limited due to the lack of financial resources until the late 80's (Benedikter, 2014a).

In 1986, the Vietnamese government promulgated the renovation called *Doi moi*, and resolved international isolation by redirecting its diplomatic relationships with neighbouring countries (Biggs et al., 2009). This diversion associated with liberation of economy enabled the government to reinvest large scale development projects. One of these include the Mekong Delta Master Plan in 1993, led by NEDECO (Benedikter, 2014a). The master plan proposed an agricultural oriented water management program with considerations to ecological system and for the sustainable development (van Staveren et al., 2018). The plan was recognized as the first multi-sectoral development plan for the Mekong delta and was funded by various international donors such as WB, ADB and Australian government. Ultimately it contributed to accelerate the expansion of rice farming area and salt water prevention (Benedikter, 2014b, Chapter 3). The outcome of the approach had been successful in terms of increasing agricultural production, as the rice production rate increased 4.7 times between 1976 and 2008 (Deltares, 2011, p. 7). Based on this result, it is assumed that even the NEDECO's proposal in 1993 had developed for sustainable development with broader consideration to the nature compared to the previous plans, it remained to be highly hydraulic infrastructure based approach.

After 2000's, NEDECO no longer fit the changing water expertise market as it became more global and competitive. In addition, Dutch water sector became fragmented in terms of the image from international community. That was the time when the Netherlands Water Partnership (NWP) was funded based on the agreement of ministries. Since then, NWP evolved its function to respond changing demand of Dutch water sector to become the "face" of water expertise (Luchtenbelt, 2015).

¹⁶ VN5,9

In 2010, both governments signed on Strategic Partnership Agreement (SPA) specifically for Climate Change adaptation and Water Management in the aim of strengthening the partnership (NWP, 2018). Based on this agreement, the Vietnamese government requested Dutch government to develop Mekong version of delta program, which later became the Mekong Delta Plan. In 2014, both governments signed on another agreement for agricultural cooperation to further their partnerships¹⁷.

4.1.2 Socio-economical and Geo-political context

The population of the Netherlands is about 17 million, with moderate growth rate around 0.6% (2017) and 17.7% of over 65 years old (MoFA the Netherlands, 2017; WB, 2018), which can be described as stabilised society with aged population. The economy is also stable with high productivity and per capita Gross Domestic Product (GDP) (MoFA the Netherlands, 2017). Based on such firm economical condition and the political lead by Jan Pronk, Dutch government has kept compliance with international target of 0.7% contribution to international cooperation in relation to Gross National Income (GNI) since 1975 until 2012 (Fic et al., 2014; Spitz et al., 2013). However, after experiencing the worldwide economic crisis in 2008, public opinion and policy on international cooperation budget drastically changed, and the government approved the budget reduction between 2012 and 2017 (Fic et al., 2014). This resulted cut downs in almost all areas including water, except emergency aid and women's right. It also triggered the diversion of ODA towards "aid to trade" and identification of promising trade partners including Vietnam as strategic partners (MoFA the Netherlands, 2013).

There were several different explanations about importance of Vietnam for Dutch government and society. An expert mentioned there was opinion from private sector about the preferable business partner country in the process of short listing of strategic partners, and Vietnam was one of top 3 ranked countries¹⁸. Another expert described that as Dutch and Vietnam are located in deltas and water behave the same following the laws in natural science, there are good chance of applying technical knowledge obtained in the Netherlands to Vietnamese environment¹⁹. In April 2019 Dutch government will send economic mission headed by prime minister to enhance partnership of private sector between two countries in water, agriculture, logistics and offshore wind energy. The mission focus on Delta technology, water treatment, and water recycle in water sector, and for agriculture sector, horticulture in the North and central highlands, fruit and vegetable chain including research on salt water resistant crops in Mekong delta. These imply Dutch private interests lay around those areas, and the relationship is being formulated through Dutch government led initiatives.

4.1.3 Water management in the Netherlands

In the Netherlands, water management policy have shifted from hard infrastructure centred to adjustable and nature based solutions through several events and continuous discussion throughout the last century (Meijerink, 2005). Meijerink describes that the severe storm in 1953

¹⁷ <http://vietnamlawmagazine.vn/vietnam-netherlands-pledge-strategic-partnership-on-agriculture-846.html>

¹⁸ NL10

¹⁹ NL9

called attention to public and political parties for the necessity of making hydraulic infrastructure bigger and stronger, while the political issues after the end of Second World War (WWII) had been rebuilding economic and social welfare. Followed by the traumatic flood event in 1953, the government set up the advisory committee, which issued the Delta plan in 1954 and the line ministry established the department to be responsible of implementing delta plan. To add, this disaster and responses of Dutch government attracted an Asian flood prone country, Bangladesh, whose ambassador requested the government to transfer the knowledge and experience of dealing with water to other countries²⁰. This prompted the foundation of IHE-Delft in 1957.

Two decades later, when the social democratic party came in power, the direction of enforcing deltas shifted towards ecological consideration and nature based solutions. The new prime minister gathered the new committee for reviewing safety measures with consideration to the ecological value of the delta. For the case of Eastern Scheldt dam, the Cabinet secured additional budget for the revision of design. The case was the first time that ecological consideration was considered one of primal importance in infrastructure planning. In 1993 and 1995, the Netherlands experienced another type of flood, rivers' water level rise that caused 200,000 people to evacuate. These events reminded the whole country that human beings cannot control water flow completely, and flooded water need the space to retain. These experiences, together with the consequences of climate change such as sea level rise and intensive rain called for the new policy of "living with the water" and "room for the river" (Meijerink, 2005; Woltjer & Al, 2007). In 2008, second delta committee published the report called "Working together with water"²¹, emphasising its broadened mandate towards uncertain future. Also, it lists the necessary elements for the delta commission as Delta-program: comprehensive measures to fulfil its mandate, approved annually by the parliament, Delta Commissioner, Delta Fund, Delta Act and Delta decisions also known as 5Ds for the successful delta related decision makings and implementation.

In parallel to these policy shifts, integration of water management and spatial planning have been moved forward by different driving forces. Traditionally, different ministries and institutions handled those two issues separately. However, awareness to the intensification of natural disasters caused by climate change and EU policy shifts toward sustainable water management especially in terms of water quality and river basin level coordination became driving force to integrate those two domains (Woltjer & Al, 2007). Through negotiation process of the set of EU regulations, it revealed to have economic impacts to agricultural activities, as it strictly restrict land use in certain areas. Even though, compliance to the EU policy prevailed the cost of economic impacts to Dutch agriculture. These transitions of Dutch water management were reflected to advices that Dutch experts made to recipients. For instance, recommendations made in 1993 were hard infrastructure oriented ones that contradict with the approach proposed by the Mekong Delta Plan in 2013²². In addition, although Dutch delta plan

²⁰ <https://www.un-ihe.org/history>, accessed Mar. 2019

²¹ http://www.deltacommissie.com/doc/deltareport_full.pdf, accessed Mar. 2019

²² NL10

is based on participatory approach, planning process of the Mekong Delta Plan itself was hardly participatory especially at the initial stage of planning²³.

- Dutch cooperation originated from colonial (long term, exotic) engineers and their expertise based on tropical climate.
- The water expertise was strengthened as national strategy to provide work place for the hydraulic/irrigation engineers along with the efforts of individual companies to build their capacities, and it gradually recognized internationally.
- At the same time, Dutch water expertise needed to incorporate with EU regulations even if it was unfavourable to Dutch industry.
- Delta approach presents increasing uncertainty in the future and necessity to be prepared for it.

4.2 Context of Japanese cooperation

“In ancient Japan people believed that natural landscapes were created and inhabited by these Kami (God), and that the will of these Kami controlled the cultural domain. ... This idea of nature's superiority to culture can explain the Japanese geographical concept of landscape.” - (Senda, 1992)

“In the early 1900s, Japan’s national polity shifted to ultra- nationalistic control by a military clique (Kelley et al., 1976). Environmental issues were pushed to the sidelines and technological progress remained the focus of activity.” - (Barrett, 1999)

4.2.1 History of Japanese cooperation in Asia and Vietnam

Since the late 16th century, Japanese trading boats and business persons travelled to Northern and Central Vietnam for precious perfumes and spices favoured by the general of Japan at that time. Hoian, a town located central Vietnam is one of the oldest Japanese settlements in Vietnam dates back around 16th-17th century (Ohira, 2011). On the other hands, it was 1907, the Vietnamese landowner introduced Japanese style modernization strategy to Mekong delta through the newspaper called “Agricultural Forum” (Biggs, 2012a).

The real Japanese came to the Mekong delta in 1941, when the French republic fallen to the Nazis, and Japanese military occupied the peninsula instead of French colonists to secure supply for their military. During this period, Japanese government propagated the idea of “Greater East Asia Co-Prosperity Sphere” the economic zone that covers entire South East Asia, influenced

²³ NL12, Based on the lectures on Mekong Delta Plan at IHE dated 3rd July 2018

by the idea of “Lebensraum (living space)” of Nazis²⁴. In the reality, the vision was utilised to legitimize Japanese invasion to these countries under the pretext of exclusion of western colonists from Asia. The exploitation by Japanese army in the Mekong delta became extreme especially towards the end of the WWII, locals had almost nothing left for their basic living such as fuel, food, and cloth, as some used mosquito net for their cloths (Biggs, 2012a). Although Japanese invasion ended in August 1945, it left enormous disorder in the society, and daily life in the entire country remained extremely severe for several years. In addition, the Vietnamese had to fight for independence against French, then between the North and South until both parties signed on the Paris peace agreement in 1973 (MoFA Japan, 2018b).

After the defeat in the WWII, Japan was occupied by the General Head Quarter (GHQ)²⁵ with fund of 1.8 billion USD (1.3 billion USD as grant)²⁶ to reform the country into the unarmed, democratic ally while rebuilding fundamental infrastructure for economic and social stability (Soeya, 1992). A decade later in 1954, the government decided to join the Colombo Plan for Cooperative Economic and Societal Development in Asia and the Pacific under the guidance of the United States (MoFA Japan, 2004). For Japan, this meant re-joining to the international community through technical and financial compensations to the countries that Japanese military invaded during the war. The Republic of Vietnam (South Vietnam) was one of those countries who signed reparation treaties in 1959 (MoFA Japan, 2004).

Nippon Koei, one of the biggest engineering consultancies in Japan, was contracted for the first ODA project in Vietnam, Da Nhim Hydroelectric power (1955-1964). Initially, there was the basic design proposed by French Joint Venture (JV). While French concept was only looking at power generation and distribution, Japanese concept was make the dam multi-purpose with consideration of connecting to special industrial zone and irrigation scheme. Based on the recommendation from the UN, Vietnamese government decided to award Japanese design for Da Nhim dam. For the funding source, even though there was possibility of WB or other international funds, Japanese war reparation fund was used. The construction was continued even under the Vietnamese war and the facility is well maintained and still functioning today (JICA, 2014b).

The core consultants of Nippon Koei just after the foundation in 1946 were those who used to work for the South Manchurian Railway Company (SMRC). SMRC was the governmental corporation for management of Manchurian railway network, which had been funded based on the Treaty of Portsmouth signed on 1905 between Russia and Japan. The founder of Nippon Koei gathered survived engineers and analysts including intelligence agents from the Manchurian Railway Investigation Department (MRID) of SMRC (Hashimoto, 2008). It should be noted that the consultancy was founded during the U.S post-war occupation in Japan, and it had been contracted for the U.S project during Indochina War for some of the most dangerous

²⁴ https://en.wikipedia.org/wiki/Greater_East_Asia_Co-Prosperity_Sphere

²⁵ The reference to the Supreme Commander for the Allied Powers headed by General Douglas MacArthur, the offices for occupation of Japan following the WWII until 1955.

²⁶ https://www.mofa.go.jp/mofaj/gaiko/oda/hanashi/story/1_2.html, accessed Mar. 2019

tasks in contested Mekong Delta (Biggs et al., 2009)²⁷. By completing difficult tasks, these consultants are acknowledged for its achievement of working for post-war recovery and contributed later economic growth in Japan and Asian countries including Vietnam (JICA, 2014a; H. Kobayashi, 2015).

From 1954 until 1960's, Japanese cooperation was combination of war reparation, grant aid (quasi-reparation) and small portion of loan, therefore financial arrangements were main activities related to ODA. During that period, most of Japanese worked domestically to rebuild the nation from local to national scale. Consequently, Japanese economic situation recovered to the same level as before WWII by 1960's (MoFA Japan, 2004). Governmental officials and technical experts, in many cases consultants and contractors, went through the process of planning, designing and constructing fundamental infrastructures inside Japan with facing various challenges. As the result, in the late 1960's and 70's, Japanese technical and financial capacity for implementing ODA increased so that the experts can apply their experiences to rebuild other countries (MoFA Japan, 2004).

Official ODA provision to the united Vietnam started since 1973, while Japan was experiencing oil crisis. At that time, the northern Vietnam was main recipient of the cooperation as the area did not receive war reparation till then. Initially the Vietnamese government requested at least 3 times as much as the ODA provided to the Republic of Vietnam (former Southern Vietnam). Negotiations went on until 1975, then finally both sides agreed on grant of 13.5 billion Japanese Yen (approximately 100 million Euro). In 1978, Japanese government approved the first ODA loan to Vietnam, yet again bilateral official cooperation ceased because of instability of the whole region and international criticism to Vietnamese invasion to Cambodia. After the diplomatic normalization in 1992, the official relation between both countries had been restored, and the technical cooperation forestry in central Vietnam had started simultaneously²⁸. At the same time, ADB initiated the GMS as an economic area bounded by the Mekong River to enhance economic relations among six riparian countries²⁹. In the beginning, Japanese assistance to Vietnam was centred by grant and technical cooperation, then extended to transport infrastructure and power supply facilities listed in the 5th Socio-Economic Development plan developed by Vietnamese government (JICA, 2014b).

During Asian currency crisis around 1997, Japanese government provided ODA loan up to 20 billion JPY (approximately 160 million Euro) to Vietnamese government, and this supported them to maintain positive economic growth (JICA, 2014b). As the consequence of the crisis, the Vietnamese government shifted toward privatization and promotion of foreign investment. To support Vietnamese strategy of poverty reduction by economic growth, Japanese government provided ODA loan for large-scale economic infrastructure to prime foreign

²⁷ These dangerous U.S. contracted projects are not mentioned in Nippon Koei's archival on website.

²⁸ JP3, even though there was no official relations, based on the international agreement made on the summit conference held in June 1992, the cooperation in medical care and environmental issues were already approved.

²⁹ <https://www.adb.org/countries/gms/main>, accessed Mar. 2019

investments thus increasing employment. In 2009, Vietnamese GDP per capita reached 1000 USD, and they joined the middle-income group.

In 2011, there was the historical disaster in Japan, aftermath of Tohoku earthquake and tsunami. This caused not only the death of 25,949 people³⁰ in the north region of Main Island, but revealed incapability of Japanese government especially in handling nuclear power plant accident. It also demolished the “*safety myth*”³¹ persisted in Japan and neighbouring countries. This assumed to have caused the withdrawal from Vietnamese side, of the plan to build nuclear power plant with the cooperation of Japanese industry in 2016³². Vietnamese government explained it was caused by difficult financial situation, particularly increasing external debt and downwardly adjusted estimation of future energy demand³³. However, it was certainly influenced by the collapsed trust in Japanese brand at least for nuclear power generation³⁴.

The disaster caused the modification of JICA Hanoi’s approach for cooperation in agricultural sector³⁵, which is currently the mainstream of Japanese cooperation in the Mekong delta. The collaboration was launched in the high-level meeting held at Hanoi, in June 2014³⁶. Also, fundamental information for strategic planning of cooperation programs was collected and analysed through “the project for Climate Change Adaptation for Sustainable Agriculture and Rural development in the Coastal Mekong Delta” followed by the list of priority projects³⁷. In parallel, ODA loan and technical cooperation to CTU are being implemented to strengthen the institution in agriculture, aquaculture/fisheries and environmental studies³⁸.

4.2.2 Socio-economical and Geo-political relationship

Japanese population was about 124 million in 2018 with constant decline around by 0.3% since 2010, and 28.1% of over 65 years old population (MoIAC Japan, 2019). Considering the decline of working aged population, the government decided to accept more foreigners (mostly from Asia) to fill the demands for simple labour for maximum of 7 years to become the resource who can contribute their own country. Such trainee’s work places are in construction site, care takers/nurse for elderlies, fabric industries and so on (JITCO, 2019). Vietnamese became the biggest provider for the system accounting for nearly 48% of total trainees, followed by Chinese: 31%, Philippines: 6% in 2017, JITCO).

³⁰ http://www.maff.go.jp/j/pr/aff/1105/spe1_01.html , accessed Mar. 2019

³¹ The belief that Japanese products are made safe, in compliance with high quality standard. This was made up as doubtless believe everything levelled “made in Japan” including automobile, electrical and agricultural products

³² <https://www.reuters.com/article/us-vietnam-politics-nuclearpower/vietnam-abandons-plan-for-first-nuclear-power-plants-idUSKBN13H0VO>, accessed Mar. 2019

³³ <https://vnexpress.net/thoi-su/vi-sao-quoc-hoi-xem-xet-dung-du-an-dien-hat-nhan-3497249.html>, accessed Mar. 2019

³⁴ http://www.foejapan.org/energy/export/pdf/170121_mitsuta.pdf, accessed Mar. 2019

³⁵ JP8

³⁶ QJP3, detail retrieved from on 19th Feb. 2019: <https://www.vietnam-briefing.com/news/japan-vietnam-grow-agricultural-development-cooperation.html/>

³⁷ Based on the explanation from JICA Hanoi by email dated 8th Jan. 2019

³⁸ JP10, QJP3

ODA budget for Japanese government has steadily increased since 1954 and became the largest donor from 1989 to 2000 then in 2016 it became 4th largest donor with 10.3 billion USD/year that equals to 0.2% of GNI (JICA, 2017b). In addition to this low ratio to GNI (one of the lowest among DAC member states), unclear ODA policy, bigger portion of loan rather than grants caused criticisms from western donors to Japanese approach. When focusing to Vietnam, it is the top recipient country of Japanese ODA, received 1,166.1 million USD (Net value) in 2016 (MoFA Japan, 2018a).

For Vietnam, Japan has been one of the biggest donor that shares the portion with WB (IDA) and ADB. More than 80% of Japanese ODA has been allocated to hard infrastructure project as in following order; 1) transportation such as bridge, railway and road constructions (41.3% of total ODA budget during 1992-2011); 2) energy (23.8%); and 3) social infrastructure, such as water distribution, waste water treatment, communication and environment (17.8%). On the other hands, ODA allocated to agriculture and fishery was around 4.8%, and education and training was 1.6% during the same period (JICA et al., 2014, Chapter 1). Private investment and business expansion to Vietnam by Japanese companies are also very active since 1993. In 2012, there were around 1100 Japanese companies registered in whole Vietnam, 550 of them belong to HCM Japanese commerce association (JICA, 2013b).

According to Japanese experts, Vietnam and Japan have several things in common, such as bureaucratic system and cultural aspect based on Confucianism³⁹. The most importantly, China has been their neighbour in common and intermediate for cultural and political relationship. In Vietnam, Chinese style civil-servant's examination had been adopted since 10th until around the beginning of 20th century, so Vietnamese and Japanese officers could communicate with writing Chinese characters. This facilitated Vietnamese to come to Japan and study, discuss with politicians and activists, who had been the core of Japanese modernization (Shiraishi, 2018).

In addition, recent concentration of Japanese ODA flow to Vietnam has to do with Chinese politics and societal movements to exclude Japanese investments. China has been the "factory" for many industrialised countries including Japan, but ever since their economic growth they became expensive and anti-Japanese, which increased risks for Japanese investors (M. Kobayashi, 2013; Sekiguchi, 2012). In this context, Vietnam has been attractive as cheaper and low-risk alternative for Japanese company. For Vietnamese government too, this shift had been welcoming, as it matches national strategy for industrialization and economic growth. On the other hand, this partially caused the Vietnamese government ever-increasing external debt especially to Japan, because of Japanese ODA strategy to facilitate direct investment by (Japanese) private sector and majority of this kind of ODA is loan⁴⁰.

³⁹ JP3, 6

⁴⁰ Third Party Evaluation Report 2015 by the MoFA Japan, <https://www.mofa.go.jp/mofaj/gaiko/oda/files/000157367.pdf> [Japanese] , accessed Feb. 2019

4.2.3 Context of water management in Japan

Historically in Japan, until modernization in the beginning of 19th century, water resource had been shared locally among agricultural and drinking purposes, and the distribution system was managed by farmers and villagers without engineers nor division of labour among farmers (Coward, 1980, Chapter 6). In addition, while entire country was in the transition process of Edo-era to Meiji, administrative boundaries were drawn based on that of catchment areas. In case a boundary is in the centre of river, communities located both sides have coordinating mechanism⁴¹.

On the other hand, for the urban settlements like Edo (current Tokyo and its surroundings), the large scale diversion was necessary to reclaim the land for settlements and vegetation to feed the population from the swamp (Takemura, 2007). The diversion works took three generations from 1603 until 1654 to complete for the shogun (general) Tokugawa, the governor of Japan during the period. It functioned for 200 year until the end of Edo-era, when the government abandoned national isolation⁴² then turned into industrialization under armed pressure from western states. It is estimated that during the isolation period, 90% of material flow were sustainable, and human wastes and pollution discharge were minimum (Barrett, 1999).

This sustainable social constitutions completely changed after industrialization. In 1896, the River act was enacted in Japan for the first time. The purpose of the act was to control flood and enhance shipments, which was the principal means of transportation at that time (Takemura, 2007). That exemplified the clear shift from nature based agricultural society to industry centred nation building in view of natural resource management. Since reopening of the trade, the government strived for modernization and it achieved the victory in the war against China and Russia during 1890's and 1900's. These created the mind-set that prefer industry than agriculture and nature based lifestyles. Even after the defeat in WWII and several typhoons and floods hit Japan severally and thousands of lives were lost during late 1940's, people continued to gather in alluvial plains in the search for jobs in industry rather than in agriculture. The unusually high demands for industrial production for the Korean War (1950-53) raised the importance of the sector and became successful experience that could wipe out the failure and tragic losses in the past.

In 1964, the River act was revised in response to increasing water demands for the industry, to reallocate water flow and risk using dams, which also provide stable power generation. This conversion meant further incline to industry rather than agriculture, and the shift of the hydraulic control from the local farmer to the central government (Takemura, 2007). By this revision, the central government got the authority to play leading role in solving water management issues that involve financial arrangement and multiple stakeholders, such as large scale multi-purpose dam construction involving several provinces (JICA, 2017a; Takemura, 2007).

⁴¹ JP1

⁴² National isolation period continued from around 1616 to 1853.

In the beginning of 1970's, pollution and environmental issues became social concern resulting the foundation of ministry of the Ministry of Environment (MOE) in 1971. Mitigation measures for sedimentation and eutrophication by dam, which cause the depletion of coastal area and damage for aquaculture were applied as much as possible. Together with the movement to re-naturalize rivers and environment protection, the River act was once again revised in 1997 paying great attention to restoration of the nature (Takemura, 2007).

Today, the role of water management is allocated into several ministries and institutions. For example, the River act, which defines issues such as river bank protection, flow diversion or damming of river with hard infrastructure are managed by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT). If it is forestation in catchment area or irrigation scheme those are overseen by the Ministry of Agriculture, Forestry and Fisheries (MAFF), and water quality is defined by MOE for open space, the Ministry of Health, Labour and Welfare (MHLW) for drinking water, and MLIT for sewer system and treatment.

In 2014, the national Diet enacted the basic act on the Water Cycle, which attempts to oversee water management while taking into account both surface and groundwater as a part of overall water cycle (Taniguchi, 2015). This was aimed at maintaining and recovering healthy water cycle, and at controlling foreign investment around recharge area for water source (Taniguchi, 2015; Watanabe, 2015). However, there is no clear definition of “basin” or “watershed” that apply to entire system of laws related to water management. This makes interpretations unclear and mis-conceptualise some issues (Taniguchi, 2015). In addition, the act does not have the legal binding force for undesirable foreign ownership of water source area in practical level; therefore, local governments need to enact provincial ordinances to prevent such activities (Watanabe, 2015). In current Japanese context, much more processes are needed to operationalize the water management system, which is ideal for the government.

In the history of modernization, there have been two critical events, which might be defined as Japanese version of “shock events”. The first was in 1853, when the U.S fleet led by M.C. Perry arrived at Uraga bay and forced general Tokugawa to re-open the country (Adas, 2009). The new government employed foreign specialists and sent missions to learn from industrialized countries⁴³. Japanese government combined different style of modernization from different countries, such as, the U.S., Germany, the U.K, France and the Netherlands. After 40 years since the opening of the country, Japan became the victor in the war against China. Based on the fact that there is no significant natural resource available in Japan, it sought to expand its territory with military power. These series of events made Japanese government presume pre-industrial sustainable water cycle had been primitive and to be forgotten.

The second event was the defeat in the WWII. As the result, it abandoned the arm, democratized the nation, and capitalized (to become ally of the U.S). Both events were complete denial of national identity, left enormous trauma to Japanese, similar to flood events did to Dutch. After gone through chaotic to recovery and economic growth periods, the government came to aware that to sustain peaceful development, ODA is the only weapon to stay industrialised without

⁴³ The interesting part of Japanese government's learning from Western process was that it politically chose the country to follow by subject.

colonies while securing natural resources from other countries. Therefore, for Japan to continuously providing ODA to other countries has the same meaning as for Dutch to invest on water management, and Japanese cooperation does not explicitly address water issues as main objectives.

- Japanese cooperation originated from the war reparation, and implemented by specialists (engineers and analysts) who worked under military oriented government
- Mandates of ODA has extended as international relation and business environment evolved, and as “shock events” happened
- Nature based and highly sustainable water/environmental management practises had been abandoned by national policy through the process of industrialization, but embedded to farmers’ practises
- The central government attempts to prevent interventions of outsider to land use practices, yet it is not fully translated into local practice

4.3 Drivers, Arena and Decision of Dutch cooperation

4.3.1 Shift of ODA policy from aid to trade

As mentioned earlier, the concept in Dutch international cooperation is routed in basic human needs and fight against poverty with the recognition that the market mechanism is not perfect for poverty reduction (MoFA the Netherlands, 2013). In 2013, while retaining the poverty eradication as the first priority, the government added “sustainable, inclusive growth all over the world” and “success for Dutch companies abroad” as the objectives of Dutch cooperation in “a world to gain” (MoFA the Netherlands, 2013, p. 6). At the same period, on the track of cooperation presented by Dutch government, the free trade agreement was signed between EU and Vietnam in 2015⁴⁴. Also, Dutch foreign policy recognize their expertise in water and energy as means for diplomatic and economic relation building and increasing the chance to create job opportunities for Dutch industries in the future. The selection of strategic partner is important, because the total financial resource is limited and every country officer wants to secure fund for their activities. Each country officer gathers the information from embassy in the partner countries, report to focal person for the region (in case of Vietnam, Asia-Pacific). After going through several round of this process, the minister and the government make final decisions.

An interviewee from MoFA⁴⁵ explained following four elements as drivers for cooperation;

- 1) *Nobles obliges (the belief that those who have extra resource should use it to help others without reason) and humanitarian motivation, with the notion to the benefit as “Stability in Southeast Asia indirectly contribute stability of Dutch society”;*
- 2) *Raising Dutch brand (in water management);*

⁴⁴ <https://www.netherlandsandyou.nl/your-country-and-the-netherlands/vietnam/doing-business/eu-vietnam-free-trade-agreement>

⁴⁵ NL11

- 3) *Formulating good relationship with other countries; and*
- 4) *Facilitate Dutch investment and business in other countries.*

Even the weight to each parameter depends on the professional and educational background of an expert, these seemed to be common among interviewees. In addition to afore mentioned objectives, several experts and researchers, who were in charge of technical cooperation mentioned improvement of capacity of counterparts either individual or institutional level is one of the drivers for their activities⁴⁶.

Mixture of Dutch brand making and facilitating Dutch business cause the claim that ODA contribute the business creation to Dutch experts rather than assisting others (Zwarteveen et al., 2017). On the contrary, other said that the direct benefit to Dutch institutions is subtle compared to those for other closer countries such as Japan, China and Korea⁴⁷. To add, an expert in engineering consultancy mentioned that since his first assignment at Vietnam in 2003, all assignments were paid by Dutch government⁴⁸. These imply the fact that although Dutch government tries to facilitate private sectors to gain more business opportunities in Vietnam, these are not yet archived among those who are involved to the MDP.

4.3.2 Schemes for cooperation

In general, the means that Dutch government mobilise for bilateral cooperation are Financial Aid (FA; grant or loan), Technical Assistance (TA) and Strategic Advice (SA)⁴⁹. FA can be used for the funding of infrastructure projects, which fit the strategy proposed under SA, and those are in line with embassy's agenda. TA includes scholarship program called the Orange Knowledge Program for capacity development of water and agriculture research institutes and universities. Other type of TA is the Blue Deal program that Dutch water authorities contributes to improve access to clean and sufficient water. SA includes dispatching a group of Dutch experts for short missions to provide advices on strategic planning and rationalize recipient's policy. For Vietnam, overall budget accounted as ODA has declined since 2008⁵⁰, as the shift from aid to trade was mobilised with the emphasis on strategic partnerships after 2013. Instead of ODA, the budget is spend to employ Dutch experts for the Mekong delta plan and implementation, for example, follow-up and assistance to issue PM Resolution 120. The attitude towards the implementation is relatively "soft" as some of key personnel mentioned "the implementation of MPD depends whether Vietnamese think it is important or not"⁵¹.

4.3.3 Actors in international cooperation

In Dutch international cooperation, the Ministry of Foreign Affair (MoFA) is in the centre of policy discussion, analysing and short listing strategic partners for all categories, and coordinates other related ministries. These ministries include Ministry of Infrastructure and

⁴⁶ NL1, NL2, NL4,

⁴⁷ NL6

⁴⁸ NL12

⁴⁹ Based on the explanation from Dutch embassy in Hanoi by email dated 21st Nov. 2018

⁵⁰ <https://stats.oecd.org/Index.aspx>, Dataset: Creditor Reporting System (CRS)

⁵¹ NL6

Water Management (MIWM), Ministry of Agriculture, Nature and Food Quality, and the Ministry of Economic Affairs and Climate Policy⁵². In addition, the Ministry of Education, Culture and Science oversees institutions and activities related to research and higher education⁵³. For private sector, as mentioned earlier, NEDECO had been the coordination body for engineering firms such as Royal Haskoning DHV and Deltares then its role was replaced by NWP. Further, NWP did not stay in the same position as NEDECO as the needs of market shifted towards complexed and global. They are first contact point for anyone who want advises from Dutch water expertize, and also represent a uniformed image of Dutch water sector⁵⁴.

In the (semi) private sector, consultancy firms and research institutions play multiple roles in formulation, implementation and strengthening of the Mekong Delta Plan. Consortiums are formed based on the expertise and experience in the area of project that are helpful to form network with core counterparts even before the project starts⁵⁵. The working style of Dutch experts used to be relatively long-term (a few years or longer) to frequent flyers (combination of short term assignments for a few weeks in different project sites)⁵⁶, then quasi-long-term possibilities by combining assignments for different projects⁵⁷. These (quasi)-long-term involvement to a country open up more opportunities for gaining future projects, as it facilitate network building with key local actors such as line ministries and also hiring qualified local staff in long term basis⁵⁸. In addition to these assignment based relationship buildings, research institutions contribute long-lasting symbolic image of Dutch expertise. For instance, Wageningen University appeared to be reference to several Vietnamese researchers⁵⁹, and IHE-Delft is widely recognized by high level officials in Asian countries through alumni network⁶⁰.

4.3.4 Decisions making process in Dutch international cooperation

Dutch decisions on which countries to support, to be in alliance and in what way to provide assistance is clearly described in the policy document. A diplomatic officer explained the internal decision making process for strategic partner as follows; country officers bring all the possible cooperation with their countries in charge to the focal person, and he or she drafted the strategy in a region⁶¹. It takes several rounds and goes through the hearing from public sector to clarify benefits and trade-offs of cooperation⁶². Finally the cooperation to Vietnam gained

⁵² NL6

⁵³ NL5

⁵⁴ <https://www.netherlandswaterpartnership.com/what-is-nwp>, accessed Mar. 2019

⁵⁵ NL9,12

⁵⁶ From the lecture “Traveling knowledge: Dutch delta knowledge” by Arjen Zegwaard, on 16 July 2018

⁵⁷ NL9: When a consultancy company has different projects for a country (and neighbouring countries) funded by different clients, an expert or experts can stay in the country for long term (for a few years), and this enables them to create in depth relationship with counterpart and better understanding of social setting of the recipient country

⁵⁸ NL12

⁵⁹ VN7,8,9

⁶⁰ NL9

⁶¹ NL8

⁶² NL10

the priority among other deltaic countries. Usually in Dutch system, ODA projects are formulated through participatory and flexible proposal processes⁶³. For example, MoFA initiates the bidding processes with rough framework of the project such as, sector, target areas (often geographical, or specific alliance such as delta countries), limit of budget and time period. Bidders then exchange with possible joint partners to decide on the details of projects and submit the proposal to the client⁶⁴.

- Dutch cooperation shifted from aid to trade, and Vietnam is one of strategic partner with high level commitment on cooperation in water management and agricultural issues.
- Cooperation for Vietnam is focused on Strategic assistance as the country is considered to be important destination for Dutch industry.
- Decisions are made in participatory/collaborative approach with the MoFA as focal point.

4.4 Drivers, Arenas and Decisions of Japanese cooperation

4.4.1 Various drivers based on international trend and post-war experiences

Japanese ODA has been the only “weapon” that the government can mobilise, as Japan was reborn to be peaceful country without military force after the WWII. Based on this condition, the ODA policy had been developed in Charters, which was approved by the cabinet in 1992, revised in 2003. The latest version is the Development Cooperation Charter and approved in 2015 (MoFA Japan, 2015). The fundamental policy is to contribute peace and prosperity, to promote human security, and to maintain reciprocal relationship with recipient countries. It prioritize the “quality growth” which is inclusive, sustainable and resilient to economical and natural crises by investing in industrial infrastructure, promoting science, and agriculture. The 2015 charter defines Association of SouthEast Asian Nations (ASEAN) as the most important region, and will focus on promoting productivity and technical innovations in industries and assist raising the capacity to deal with disasters. Also, “reproduction of Japanese success in economic growth” is the phrase frequently used to legitimize the ODA for industrialization of Asian and other countries. Further, in individual country portfolio to Vietnam, it is defined that promoting industrialization and reinforcing sustainable economic development by mitigating negative aspects of the growth such as environmental issues are target areas of the cooperation to Vietnam⁶⁵.

In addition to these officially defined drivers, there are others attached to them as the ODA evolved along with the events and changing conditions. For instance, to secure the oil and other fossil fuel supply with forming good relationship with oil producer was added to agenda after

⁶³ NL1, 3, 4,7, VN8

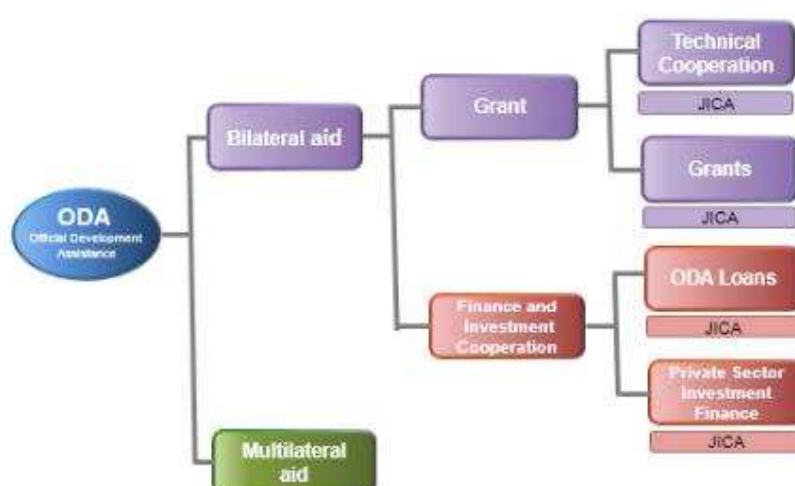
⁶⁴ NL1, 12, VN8

⁶⁵ Country specific portfolio, Vietnam by MoFA Japan dated 2016, retrieved Feb. 25 2019 from <https://www.mofa.go.jp/mofaj/gaiko/oda/files/000072247.pdf>

the oil crisis in 1973. When trade surplus had grown around 80's, the extra profit became the source of conflicts and criticism from the US government, so it had been diverted to ODA for mitigation of the tension (MoFA Japan, 2004). After mid 1990's, securing overseas producer as alternative for Chinese factories was added to it in correspondence to anti- Japanese movement in China (Seki, 2004). In the view of private sector, Japanese industry for public infrastructure lost their customers as the coverage of social infrastructure close to 100 %⁶⁶. The government and industries put importance on exploring foreign countries, especially demographically and financially growing ASEAN countries including Vietnam to allocate the ODA to assist industry to expand their business in those countries.

4.4.2 Schemes for cooperation

Similar to Dutch cooperation, Japanese cooperation has FA, TA and SA, but these are categorised differently from Dutch cooperation. Grant aid and Technical Cooperation, originate from war reparation. Grant aid is allocated to social infrastructure such as health, water and sanitation, education and community development of relatively lower income countries among eligible recipients⁶⁷. Technical cooperation may take variety of forms, such as dispatching experts, development survey for making lists of future cooperation in specific sectors, capacity development of counterparts through collaborative activities and trainings in Japan.



(Source: JICA⁶⁸)

Figure 8. Types of Japanese ODA

In Vietnam, dispatching the advisor for policy formulation to MARD⁶⁹, implementation of the development study for coastal area⁷⁰, and the project for enhancing function of agricultural

⁶⁶ JP6

⁶⁷ <https://www.jica.go.jp/aboutoda/basic/03.html>, accessed Feb. 2019

⁶⁸ https://www.jica.go.jp/english/our_work/types_of_assistance/oda_loans/overseas/index.html, accessed Mar. 2019

⁶⁹ <http://gwweb.jica.go.jp/km/ProjectView.nsf/VWAEPrint/5A688D4E5D351D8B49257D090079E431>, accessed Feb. 2019

⁷⁰ “the project for climate change adaptation for sustainable agriculture and rural development in coastal Mekong Delta”, for the detail see http://open_jicareport.jica.go.jp/pdf/12114617_01.pdf, accessed Feb. 2019

cooperatives⁷¹ had been implemented under TA to list a few. In the implementation stage, substantial part of budget for technical cooperation is provided by grant element, and the recipients provide in-kind contribution such as staff and office space⁷².

On the other hands, there are finance and investment cooperation, comprised with ODA loan and private sector investment finance. ODA loan is defined as the loan that has more than 25% grant element, with the main objective of contributing economic development, such as power generation, transportation, as well as higher education. The CTU Improvement Project is under this category with general untied procurement condition⁷³. In ODA loan, there is a condition called Special Terms for Economic Partnership (STEP) under which more than 30% of facilities need to be procured from Japanese providers, and the conditions for loan made general for recipient⁷⁴. STEP has been introduced to increase visibility of Japanese cooperation, and applied to the expansion of Hanoi international airport, Cho Ray hospital development project, HCM city urban railway construction Line1 in Vietnam⁷⁵. There are technical cooperation tied to ODA loan, such as the project for building capacity for CTU⁷⁶, which aim at facilitating the achievement of objectives of ODA loan projects. For the private sector investment finance, JICA provides fund for feasibility study of PPP projects. Once there was a study for rice oil factory that was conducted with the advice of CTU, whereas Japanese company decided not to invest on the project based on the findings of study⁷⁷. Financial source for ODA loan and technical cooperation tied to loan are different from grant and non-loan tied technical cooperation, therefore supervised by different Japanese ministries.

4.4.3 Involved ministries and institutions for international cooperation

Currently, JICA is responsible for implementation of ODA programs and projects mentioned above. It was until 2008, three schemes; Grand aid, technical cooperation and ODA loan were managed by MoFA, JICA and Japan Bank for International Cooperation (JBIC) respectively. In response to changing global situations, implementation tasks were merged as the new JICA⁷⁸. Even so, as the funds are sourced from different national budget items, old JICA made final decisions with the supervision by MoFA, while loan related projects are supervised by MoF, METI and MoFA (Kawai & Takagi, 2001). In addition to these decision-making ministries, MAFF, MHLW and MILT make technical advises and dispatch experts based on the request from recipient countries via JICA and/or MoFA. For research projects, national universities and Ministry of Education, Culture, Sports, Science and Technology are involved⁷⁹. Since the

⁷¹ VN5, <https://www.jica.go.jp/vietnam/english/office/topics/press150710.html>, accessed Feb. 2019

⁷² JP3, VN6

⁷³ https://www.jica.go.jp/english/news/press/2015/150706_01.html, accessed Feb. 2019

⁷⁴ https://www.jica.go.jp/english/our_work/types_of_assistance/oda_loans/step/index.html, accessed Feb. 2019

⁷⁵ JP11, https://www.jica.go.jp/activities/schemes/finance_co/about/step.html, accessed Feb. 2019

⁷⁶ <https://www.jica.go.jp/project/english/vietnam/039/outline/index.html>, accessed Feb. 2019

⁷⁷ VN5

⁷⁸ <https://www.jica.go.jp/aboutoda/jica/index.html>, accessed Feb. 2019

⁷⁹ JP9

economic crisis in 2008 and change in ruling political party in Japan, budget for ODA declined substantially, and JICA was ordered to reduce their expenses from the parliament. For that purpose, JICA tried to “select and concentrate” the partner countries same as Dutch government did. However, it did not result to select but only highlighted some of key partners by region and by sector. This limitation of budget was tightened after 2011 while this time there were little room for negotiation⁸⁰.

Kawai and Takagi (2001) described uncleanness of decision making process about Japanese ODA. Only superficial alignment are made among MoFA, METI and MoF, and each pursue its own agenda. Also, authors described almost brain freezing subordination of Japanese government to the U.S government for ODA policy making. JICA’s organizational structure exactly follows these multi-dimensional decision-making arenas in ODA policy. Regional departments of JICA closely communicate with MoFA based on diplomatic interests and overall financial planning with MoF, while sectoral departments (global environment, rural development, industrial and public policy etc...) work closely with their line ministries.

On the contrary to compliance to the U.S ODA policy, Japanese MoF centred arena challenged to the WB, which is in a way instrument to disseminate the idea of free market for the interest of the U.S government (Wade, 1996). Since early 1980’s, the Bank had been criticising Japanese led East Asian allay of government controlled economy. Japan did not counter argue to that criticism, yet reacted by requesting a research called the *East Asian Miracle: Economic Growth and Public Policy* with extra funding. For Japanese side, it intended to legitimize their government-led approach by being proved, or at least being acknowledged by international donor community. The Bank could not neglect the offer, as Japan was the second largest financier to the Bank at that time even with shrinking economy. Even though there were not enough scientific evident for the “*miracle*”, the bank could not deny the correlation between government’s interventions to market and economic growth in Asia. The draft of report went through the different layers of the Bank to make sure that there would no contradicting conclusions or analysis to Bank’s agenda, while recognizing the potential of East Asian approaches to meet the favour of the funder of the work. The difficult mission was made possible by Bank’s economists, more than 80% of those who were educated in graduate schools in the U.S or the U.K, and consultants, who seek the way to maximize the next job opportunity from the Bank. The author called these efforts “the art of paradigm maintenance”.

In private sector, there haven’t been umbrella institutions like NEDECO for Japanese consultancy firms. Instead, technical consultants such as Nippon Koei, Nihon Suido Consultants voluntary form JV in conducting surveys and delivering the products. Their roles in project formulation and implementation have shifted over time. For example in the water related project around the late 60’s, key actors were experts from ministries, public institutes (such as research centres and leading water utilities), and technical consultants were mainly in charge of documentations⁸¹. After a couple of decades, consultants were contracted to lead the

⁸⁰ In Africa division, only limited projects could secure the initial budget and the budget for non-prioritised projects were reduced by 20%. Prioritised projects were for energy, economic infrastructure and industrial promotion, and others were education, environment and health sector. (based on author’s experience)

⁸¹ JP1, JP3

study for development program, under direct supervision of MoFA and embassies⁸². Around that time, ODA projects were purely for diplomatic relation building and consultants gained strong influence on decision-making of the recipient country. This environment allowed consultants to closely discuss with counterparts, usually director level of ministries, through at least a few years' project period. In case there is no water related policy in the recipient country and Japanese government cannot help them developing it, consultants used to assist directors to draft request for technical cooperation from International Organizations or bilateral organizations. After around 1992, JICA became more dominant in project formulation and consultancy work had been clearly specified by Terms of Reference in the contract. As the result, experts' assignment to a project became less flexible and short-term, and chance to influence recipient country's policy became less. Moreover, after JBIC joined JICA, former JBIC officers became more influential in project formulation and implementation in Asia, as many Southeast Asian countries including Vietnam became middle income countries that are eligible for ODA loan⁸³.

The recent trend of Japanese ODA that can be observed in Vietnam is involvement of municipalities and middle-small scale Japanese companies. In the case of urban environment improvement, a small-scale engineering company found a new market in Vietnam and contracted for a package of work⁸⁴. On the other hands, although Japanese government recognises importance of international cooperation in sectoral policies and are committed to globalize their activities, willingness or reluctance for international cooperation vary depending on issues and person in charge of line ministries⁸⁵. For afore mentioned project, ministry in charge was reluctant to support the activities. Instead, the eagerness of private companies were main driving force, and person in charge from the ministry supported their activities with minimum input from the ministry. Besides, participation of a municipality added formality and gave momentum for the network, as there still remains the custom of putting the government above the private both in Vietnam and in Japan. Based on the explanation from interviewee, currently the pillar of collaboration has shifted to private company joint ventures and technical cooperation between municipalities, and the official support from central government is no longer crucial.

Another feature for Japanese cooperation was the role played by informal relationship building. One of those experts⁸⁶ explained;

“Compared to before, say 10 years ago, there are less occasions to expand or deepen informal relationship with Vietnamese counterparts (in JICA's working protocol). One of my counterparts for previous position asked me what Japanese

⁸² JP5

⁸³ JP10

⁸⁴ JP6

⁸⁵ JP1,6

⁸⁶ JP10

are doing recently. He also mentioned that he no longer recognize Japanese activities these days.”

The expert analysed this might be the effect of shift to ODA loan. In the formulation and supervision of grant aid and technical cooperation project under JICA until 2008, frequent contacts with counterparts in different levels were required. On the contrary, ODA loan is designed to work smoothly with minimal supervision from Tokyo. Integration of JICA and JBIC might have saved cost of having different offices and personals to serve similar missions, however, it cost the distance of counterparts and less grass-root approach.

4.4.4 Decision making process in Japanese international cooperation

For the decision making structure, there is the periodical meeting called “ODA taskforce” that consists with embassy, JICA and other governmental institutions such as Japan External Trade Organization (JETRO). In the meeting, the latest information such as business environment and other donor’s activities are shared, and possible future cooperation are discussed. The taskforce make and revise the rolling plan, 5 years’ rough schedule for all the possible investments and cooperation projects. In principle, individual projects are formulated based on requests from line ministries. Once the request letter is received, embassy and JICA jointly check the consistencies with the ODA strategy discussed by the taskforce, and decide to or not to approve the request⁸⁷. In practice, there are several unwritten conditions for the approval. In case of technical cooperation, there should be counterpart ministry or specific experts who can be assigned from Japanese side. Furthermore, the time scale and estimated budget should be “proper” for the recipient country and the sector⁸⁸. This whole system is made to be transparent and to make coherency among official activities as “Japanese cooperation as a whole”. Even so, the system itself does not have authority to define the direction of activities that applies to all participants, and the process is highly biased from the view of Non-Governmental Organizations (NGOs)⁸⁹.

After approval of a project, consultancy services that is necessary to agree on the detailed contents with counterpart agency will be procured by JICA. This preparatory survey takes a few weeks, and come up with agreement between counterpart agency and JICA. Finally, the consultant service for actual implementation of project will be contracted by JICA within the already fixed framework through previous processes. JICA is also responsible for evaluation of project, with the possible of external evaluation organized by MoFA for selected projects. Even though the procurement processes follow the transparent workflow with the possibility of further information disclosure, internal decision-making process and negotiation with counterpart agencies are kept confidential.

JICA’s priorities, given the framework of cooperation is already approved by the government, are more about efficiency of implementation in terms of time and investment. In case of ODA

⁸⁷ <https://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/taskforce.html>, accessed Feb. 2019

⁸⁸ JP2

⁸⁹ https://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/kondankai/senryaku/10_shiryo/shiryo_4.html, accessed Feb. 2019

loan projects, two types of bilateral agreement needs to be signed for one project. One is called Exchange of Note, which defines the diplomatic settings of the project such as overall goal, expected contribution to the recipient's economic growth and social stability. Another is called Loan Agreement that defines amount, eligible portions, and conditions such as repayment period and interest rates. Both agreements define expected and the latest possible completion dates that are reflected to expiration of the agreement. Once the agreements are officially signed, JICA mobilises whatever they are allowed to do so to comply with these officially agreed conditions; in other words, JICA wants to minimize the risk that can cause the delay of progress. Those are reflected to all decision-making processes that they make throughout project formulation and implementation phases⁹⁰.

In Vietnam, the control by MoF over disbursement to loan projects has been getting serious concern by donors including JICA⁹¹. One of JICA projects was cancelled after signing on agreements based on the requests from the government of Vietnam⁹². Taking these into account, JICA may reconsider, or has already reconsidering the allocation of investment in terms of financial and human resource to Vietnam⁹³.

- Japanese cooperation has the biggest weight on ODA loan, which aim to assist economic growth and strengthen ties for Japanese industries, and technical cooperation is also provided in parallel to loan
- Multiple drivers co-exist
- JICA and embassy collectively form strategy of cooperation, with various supervisions from ministries
- Decisions are made based on efficiency and smooth implementation

4.5 Impacts of cooperation

4.5.1 Impacts of Dutch cooperation

As mentioned earlier, Mekong Delta Plan by NEDECO in 1993 was more concrete than the Mekong Delta Plan in 2013. It proposed hard infrastructure to control water flows to facilitate rice production in the area. As it had been financed by several development partners such as WB and Australian governments and contributed multi-folding growth of rice production in the following decade (Benedikter, 2014b). It ultimately gave Vietnamese decision makers the impression that the investment utilising ODA in large scale hydraulic infrastructure is promising approach for economic growth. It is also assumed that the successful experience with Mekong Delta Plan in 1993 labelled Dutch cooperation as beneficial for them.

On the other hands, Mekong Delta Plan in 2013 started to make impacts in conceptual thinking. Vietnamese officer explained the internal shift within his department to set the target year of

⁹⁰ Based on author's experience working for JICA.

⁹¹ NL6, JP7, VN1, QJP3

⁹² JP7

⁹³ JP7, VN4

2050 for all master plans, instead of 10-20 years⁹⁴. For other Vietnamese researchers, science based Dutch approach and its influencing power to the central government empowers scientists to utilise their knowledge obtained in the field⁹⁵. Further, the combination of technical and social science facilitate the piloting and demonstration of new ideas that may make bigger impact in the future⁹⁶. These symptoms of change fit the intention of Dutch experts and researchers. Several explained that possible impacts of Mekong Delta Plan may be the change of planning approach in Vietnam becomes that Dutch believe to be sustainable⁹⁷. Also it is expected to bring awareness that the area is vulnerable to climate change, and technology and tools for farmers to decide what should be the suitable crops under changing climate and where to sell them in the best price⁹⁸. The intensity of these impacts all depends on how many people will be involved, how far the technologies and tools are applicable to different users, and whether if these approaches contribute to make profit and so on.

4.5.2 Impacts of Japanese cooperation

Japanese cooperation is more concrete than that of Dutch, so they can make physical impacts. However, there are possibility that physical interventions, such as infrastructure do not work as expected. The sluice gate construction project that aims to sweeten the water quality of coastal area was approved in 2017, though they will not be used in the original purpose as currently salt water is welcomed to produce profitable shrimps. Considering this, JICA is considering alternation of sluice gate usage into tidal flood protection, which requires additional technical assistance for operational training⁹⁹. If Vietnamese agrees on this alternative, the intervention finally can be used for flood protection to reduce the risk of coastal area. In the worst case, the sluice gate project will be implemented with the budget of USD286 million leaving Vietnam that amount as additional foreign debt, without contributing the growth of Vietnam.

Another cooperation in the past was made to improve functionality of agriculture cooperatives in Mekong delta. Although this did not function well in An Giang province, it could have contributed improving water quality based on the analysis by agricultural researcher¹⁰⁰ that;

If it was implemented successfully, cooperative could have used as channel to distribute innovative agricultural practices to reduce fertiliser consumption and optimize yield, which ultimately contributed to improve water quality.

Also, Vietnamese expert pointed indirect/non-intentional impact of Japan funded construction projects as follows¹⁰¹;

⁹⁴ VN3

⁹⁵ VN8

⁹⁶ VN9

⁹⁷ NL6

⁹⁸ NL7,9

⁹⁹ VN1

¹⁰⁰ VN5

¹⁰¹ VN4

Although Vietnamese companies may not admit it, Vietnamese sub-contractors to Japanese construction companies developed their capacity by working together with Japanese. They could learn from Japanese professional not only technical issues but also project management. Moreover, successful completion of a work help them to expand network to key governmental institutions and facilitate them to win the bid for another projects.

These impact have been observed after 20 years' cooperation. Similarly, developing education system may take 20-30 years, an expert in environmental engineering mentioned¹⁰². In the education, short term impact does not mean anything at all, the expert emphasised. On the other hand, the impact of these projects are evaluated based on the number of trainees and their score on final exam, which have little to do with the real impact in longer term. These imply that Japanese evaluation system is made for short term achievement rather than only supplemental long term contributions if not negligible. The creation of new JICA in 2008 amplified this tendency to seek for visible and short term benefit of the project tied to loan.

4.6 Conclusion

This chapter presented the historical transition of Dutch and Japanese approach on their own nation building, then elaboration of framework, arena and role of actors in cooperation. At the initial stage, Dutch cooperation started with hydraulic engineers in post-colonial era. Engineering firms were united under NEDECO to be competitive in competitive international market for development projects. Dutch government funded projects are managed by diplomatic system with the MoFA as a core, with the expertise provided by respective ministries such as the ministry for water and the ministry for agriculture. Private engineering firms and research institutions play key role to materialize such projects by mobilizing their expertise and professional network. Under Dutch cooperation, recent delta plan is made to provide long term vision and sustainable pathways supported by nature based solutions, while Dutch expertise provided hard infrastructure centred solutions a couple of decades ago.

Japanese cooperation started as war reparation after WWII, while Japan itself was under reconstruction after serious damage from the war. Core planners and engineers for international cooperation were specialists, who worked for expansion of Japanese occupation in Asian countries during the war. The form of cooperation evolved to include ODA loan and connected with business activity for economic growth. Also main drivers expand from diplomatic relation building to securing natural resources and its own industrial development. In this way, international cooperation involves not only MoFA, but ministry for economy and for finance as decision makers with technical expertise provided by ministry of infrastructure or agriculture. Japanese cooperation bring visible impacts to water flows, whereas its actual contribution may not be seen immediately after the completion of projects.

¹⁰² JP9

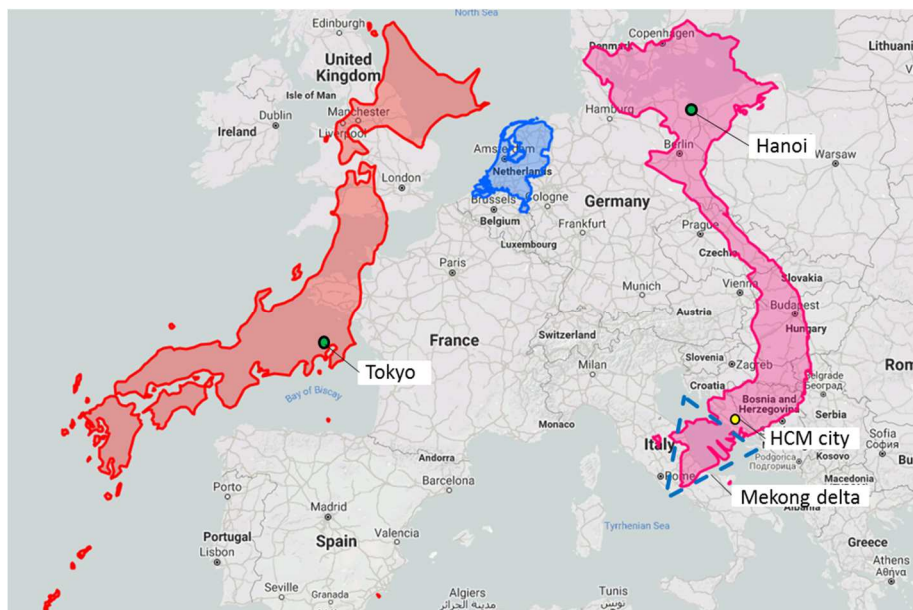
Chapter 5 Assistances in Vietnam and Mekong delta

- This chapter presents the politics around water resource management in Vietnam after reunification of the country in 1976.
- It elaborates how the institutions for water control had been arranged and evolved, and how foreign assistants have been utilised by the central government in materialising its visions, and who actually benefit from these investments.
- This chapter also elaborates how government decisions have influenced individuals in the Mekong Delta for the same period of time.

5.1 Context

5.1.1 The Vietnam as a state and the Mekong Delta

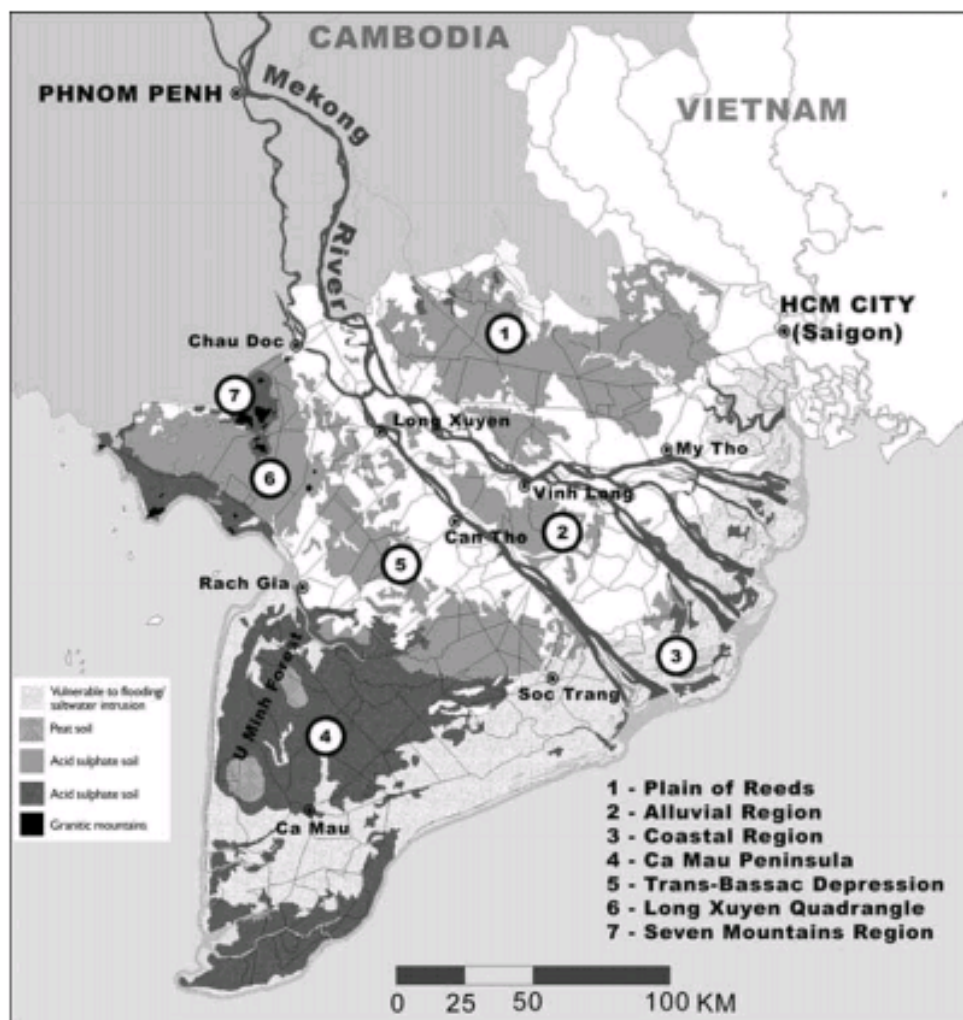
Vietnam is a long and thin shaped country that spread north to south. It has long history of foreign occupations and interventions from China, France, Japan and the USA, and division of regime between the North and the South. Hanoi, capital of the country is located at north part, and ministries, resident offices for international institutions located wherein. HCM city, the centre of economic activities with the largest population, is located more than 1600 km southern from Hanoi (see figure 9). It takes one and a half day to travel from Hanoi to HCM city by train, which has been popular means of transport for majority of people. Interestingly, the gap of latitude between the northern and southern tip of Japan and Vietnam are similar, and this provide variety of climate, culture and difference of languages within the country. In addition, the Netherlands and Mekong delta are almost in the same size and have similar population of around 17 million people.



Source: <https://thetruesize.com>, modified by author

Figure 9. Comparison of size and distances of three countries

There are seven regions in Vietnam, namely (from north to south); North Mountains & Midlands, Red River Delta, North Central Coast, South Central Coast, Central Highlands, South East, and Mekong Delta. Further, Mekong delta can be classified into 3-7 sections depending on the hydrological environment, soil type and other factors (Biggs et al., 2009; Kono, 2001; Royal Haskoning DHV et al., 2013). These diverse characteristics have affected human settlements and cultivation practices including construction of canals, and the modification of land use by human also affected the hydraulic environment of each section. Until around the late 18th century, the delta had been nearly pristine condition, where colonists and foreign militaries needed to fight for the firm land (Biggs, 2012a; Biggs et al., 2009). It has been made approachable and productive through intensive canalization network development over time, which resulted almost the endless dredging work with huge financial and human resource investments (Biggs et al., 2009).



Source: (Biggs et al., 2009)

Figure 10. Classification of the Mekong Delta

After the reunification in 1976, the North regarded the South, especially rural areas as underdeveloped, hence the target of intensive investment to propagate the superiority of

socialist regime. The Mekong delta was the most potential field for this mission (Benedikter, 2014b). These political agendas were crystalized into “hydraulic mission”, the Vietnamese term of exploiting water for the most proficient and beneficial way. At this point, hydraulic engineers in Hanoi evaluated the water use efficiency in the delta as non-scientific and lack the awareness on importance of water management. Based on the successful water engineering experience in the Red River during 50’s and 60’s, Hanoi based bureaucrats imposed the people to regulate water through collective approach by participating manual labour works and being a part of agriculture cooperatives. In addition to water resource management, the state control over the agricultural land use was regarded to be indispensable to achieve successful implementation of hydraulic missions.

These programs and preconditions were not applicable in the delta (Benedikter, 2014b). In terms of farmer’s cooperatives, although there were loose collaboration among farmers for water resource management, individual practices had been dominant in Mekong delta based on the flatness and water flow complexity. As the result, only 6% of farmers in the delta belonged to agricultural cooperatives by 1986. Abolishment of small machines, which were provided through the US aid before unification caused another problem for farmers. These were indispensable in improving rice yield together with individual water management practices; therefore, farmers lost the means to cope with complexed hydraulic environment of the delta (Biggs et al., 2009). Also, distribution of pesticides and chemical fertiliser only through state governed network, quota for rice production without consideration of characteristics of soil, and fixed price for surplus products constrained farmers to be as productive, even discouraged them (Benedikter, 2014a). These national policies with several flood strikes to the delta kept the region poor until 1980’s, and policy makers in the North concluded that these failure are because of the governance in the South had been spoiled by French and American imperialism (Benedikter, 2014b; Biggs et al., 2009).

While farmers were facing multiple obstacles, the state represented by Ministry of Water¹⁰³, hydraulic engineers and (state owned) construction companies reinforced network among them, and constructed the framework for expanding their functions to the South (Benedikter, 2014a). For example, the central government established several water related institutions in HCM city and Department of Water (later became DARD) in all provinces in Mekong delta to enhance administrative structure. Consequently engineering firms followed these expansion of the government towards south by establishing brunches. Those three worked well together, as majority of them were alumni of the Water Resources University in Hanoi, which has been one of the most successful starting point for engineers. In addition, they shared the successful and profitable experience in the North, especially in the Red River region.

Those successful engineering design in the North were, however, not applicable to hydraulic and natural environment of the Mekong Delta (Benedikter, 2014a). In the South, water flows change directions based on the morphological and seasonal cycle, and flexible agriculture was operated based on these seasonal changes. Local farmers were also accustomed to such flexible farming as there were no stable large scale infrastructure in the delta. Consequently, the design

¹⁰³ later merged into MARD

of projects copied from the Red River failed, and then engineers made trials as French or American planners used to do decades ago. In the late 1970's after several failures of mechanized irrigation schemes, governmental planning institution proposed zoning of the delta and dividing it into small units to totally manipulate the water flows following the order of bureaucratic engineers from central government.

In 1986, the government implemented *Doi moi* (Renovation) policy, and it started to recover international relationships, resulting the resume of foreign assistance from donors (Benedikter, 2014a). The Renovation also dramatically increased the influx of heavy machineries that enabled large scale infrastructure projects, and ultimately brought stable income for engineering companies. These achievements brought more power to central engineers, and they inclined to mechanization and scaling up irrigation schemes. Return of foreign technical assistance and investments accelerated the boom of rice production towards late 2000's, making rice production quadruple in 2007 compared to 1975. The Mekong Delta Master Plan developed by NEDECO in 1993 greatly contributed to this proliferation, being the first multi-sectoral plan made for agriculture, flood control and drainage issues through comprehensive water management. Based on the plan, substantial amount of foreign funds were allocated to large scale irrigation schemes and infrastructures.

Despite the successful achievement and contribution to economic growth of the nation, these brought serious social discrepancies and environmental issues in the delta (Benedikter, 2014a). The former refers to the distrust of the central government oriented hydraulic plans among local communities. The voices and concerns of local people on intensive modifications to water flows in the delta have been neglected by the central authority in the name of development. The latter refer to continuous cycle of intensive grand water use and modification of sediment flow since pre-reunification, then amplification of them by intensive mechanization of the hydraulic system (Benedikter, 2014a; Biggs, 2012b).

Takahashi (2006) described the interconnection between agricultural revolution initiated in 1988¹⁰⁴ and liberation of heavy machinery ownership that resulted polarisation of farmers as well. In 1993, the government drastically modified the land ownership act to allow farmers to own pieces of lands to stimulate agricultural innovations for better production. The modification resulted in increasing number of both large scale land owners¹⁰⁵ and peasants. Liberated farm land trade and machinery ownership, especially outsourcing possibility for heavy agricultural machines resulted in stable management and multi-years fruit production for large land owners. At the same time, those large farers provide relatively stable employment for peasants, but their living condition is still vulnerable to changing environment.

Those central government oriented approach and firm network among alumni of Hanoi University persist today. In the formulation, planning and implementation of ODA and other international cooperation activities, central government initiates projects, and then provinces

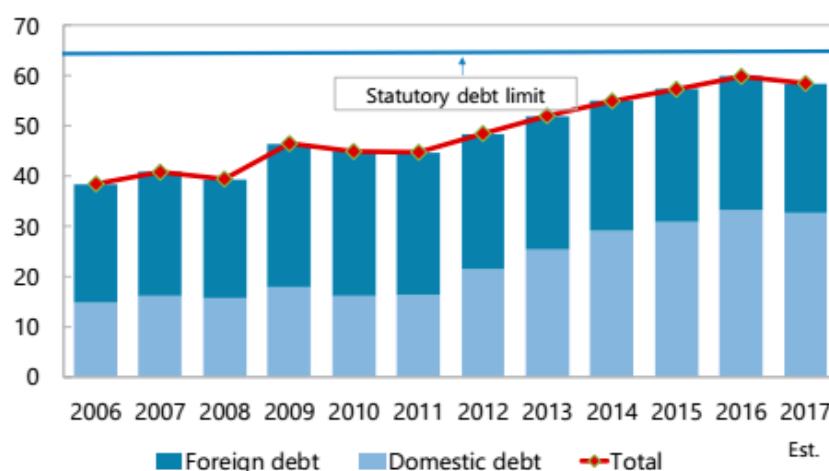
¹⁰⁴ There had been attempt to induce productivity before 1988, for example, there had been central party's directive that enable farmer/farmers' group to sell surplus production in 1981, but it did not contribute to improve production as expected (Takahashi, 2006).

¹⁰⁵ called *trang trai* in Vietnamese; those who own the land larger than 3ha

are responsible of implementation on the ground. In addition for the financial arrangement of investments through ODA, the departments in Hanoi is responsible of planning annual budget allocation, supervision of project implementation, and provinces are responsible of implementation and repayment of the project budget in case of ODA loans¹⁰⁶.

5.1.2 Socio-economic context in Vietnam and the delta

About three decades since Renovation, financial situation of the country has been opened up for foreign trade and largely influenced by foreign investments both official and private. During 2011 and 2015, domestic debt increased rapidly which resulted the increased total debt in relation to GDP (see Figure 10). In response to that, the parliament introduced the law to limit statutory debt as lower than 65% of GDP by limiting external debt (including ODA loan), and extension of domestic loan period¹⁰⁷. This control is expected to continue until 2020. Also, the government has approved the decree¹⁰⁸ to shift the responsibility of repayment to ODA loan to provinces or service providers. Based on the explanation from Japanese official, the government is sub-loaning the investment through ODA to the local government together with exchange risk and other costs that usually central government takes charge¹⁰⁹. Consequently, the condition of ODA loan for the borrower became almost the same as commercial loan. Although these are process of decentralization for the central government, it is consequently shifting the cost of development to provinces and local population while conserving national budget for any other favorable purpose.



Source: (IMF Country Report No. 18/215, 2018)

Figure 11. Foreign and Domestic debt of Vietnamese government (in percent of GDP)

¹⁰⁶ JP7

¹⁰⁷ Based on the document obtained by JICA Vietnam

¹⁰⁸ Decree Ref: 97/2018/NĐ-CP (provisional English version)

¹⁰⁹ JP7

Foreign investments in the year 2017 are summarised as in table 6. Japanese investments were for thermal power plants and gas pipe line in Kiên Giang province. For accumulated foreign investment, Korea has been the biggest investor counting 57.7 billion USD, followed by Japan (49.5 billion USD) and Singapore (42.2 billion USD)¹¹⁰. The table 6 also shows that Netherlands is the only European country that invests Vietnam in large amount.

Table 6. Foreign investments in Vietnam by country (2017)

| | New investment | | Additional investments | | stock investments | | Total |
|------------------------|----------------|-----------|------------------------|-----------|-------------------|-----------|-----------|
| | case | Amount | case | Amount | case | Amount | Amount |
| | (No.) | (mil.USD) | (No.) | (mil.USD) | (No.) | (mil.USD) | (mil.USD) |
| Japan | 367 | 7,750 | 199 | 890 | 459 | 470 | 9,110 |
| S. Korea | 861 | 3,970 | 426 | 3,680 | 1,319 | 840 | 8,490 |
| Singapore | 186 | 3,770 | 70 | 840 | 322 | 690 | 5,310 |
| China | 284 | 1,410 | 83 | 270 | 817 | 490 | 2,170 |
| British Virgin Islands | 41 | 270 | 21 | 210 | 56 | 1,170 | 1,650 |
| Hong Kong | 129 | 740 | 82 | 610 | 99 | 140 | 1,490 |
| Taiwan | 106 | 330 | 85 | 780 | 453 | 360 | 1,460 |
| the U.S | 73 | 640 | 17 | 160 | 158 | 80 | 870 |
| Netherlands | 36 | 310 | 15 | 30 | 35 | 700 | 1,040 |
| Thailands | 47 | 300 | 18 | 90 | 98 | 330 | 710 |
| others | 461 | 1,790 | 172 | 850 | 1,186 | 940 | 3,590 |

Data source: Vietnamese foreign investment ministry

(Source: Embassy of Japan in Vietnam, 2018)

In some literature that deal Mekong Delta, it is written that the delta is important food producer for whole country and for exportation (Biggs et al., 2009; Kotsila & Saravanan, 2017; Renaud et al., 2013). Based on water sector's review by ADB, 80% of Vietnamese water is estimated to be used agricultural purpose, and Mekong delta and Red river delta account 70% of them. In terms of surface water discharge, Mekong Delta constitute 57% of national total, followed by Red River (16%) and Dong Nai basin (4%) (ADB, 2009). Whereas, Mekong delta contributes only 17% of National GDP index that can be explained by low economic return for the unit of water. A Dutch expert based in Vietnam explained that Hanoi centred politics is not so keen in developing any plan specific to Mekong¹¹¹;

Among Mekong Delta origin government officials, there is the feeling that central government is not serious about development of the delta and implementation of Mekong Delta Plan...There haven't been so much progress since the PMR120 for 18months.

Also Vietnamese central government officer mentioned that the government led master plans for hydraulic infrastructure are developed equally to all river basins (in total of 50 master plans exist), and the provinces are responsible of implementation, including fund raising for the

¹¹⁰ Vietnamese economics situation, 2017 by embassy of Japan in Hanoi, <https://www.vn.emb-japan.go.jp/files/000328982.pdf>, accessed Mar. 2019

¹¹¹ NL10

projects¹¹². These imply that although contribution of Mekong Delta to rice production is widely recognized, it does not result in prioritizing the investments to the delta.

5.1.3 Geo-political context with riparian countries

Based on ADB water sector review, 95% of water flow in Mekong Delta is generated in upstream countries, and the precipitation in Vietnam contributes only 5% of total flow (ADB, 2009). Therefore, availability of water resource in terms of quantity, quality and their variations largely depend on water usage of upstream countries. Especially dam operation for hydropower and irrigation have huge impacts on water flows in the delta. Vietnamese experts mentioned that after numbers of dam constructions in upstream, sediment in-flow to the delta declined by 95%¹¹³. Another Dutch expert described about an on-going irrigation plan in Thailand to divert entire flow during dry season as almost criminal to downstream countries¹¹⁴. Combination of these human oriented factors, and effects of climate change gives much higher uncertainty, mostly referred to as threats to Mekong Delta (Dang et al., 2018; Kondolf et al., 2018).

Development of hydropower also involves technocratic capacity of each states, and is often related to foreign consultancies and experts (Bakker, 1999). In this aspect, both Dutch and Japanese governments have been trying to intervene with those riparian countries' actions by supporting the Mekong River Committee (MRC) and its predecessor (JICA, 1996). The Netherlands aimed to enhance coordination among riparian countries, and Japanese focused on technical contributions by dispatching experts and providing funds. However, the influence of MRC to the water management of entire watersheds is quite limited given the committee does not hold the power to coordinate activities in riparian states, and there is no participation of China. Yet, in time of severe drought in 2015-16, China released emergency water supply to increase downstream water level¹¹⁵. Even though the contribution to water discharge recovery was uncertain in the delta, China seems to have vast domination over water levels along Mekong River. Based on the explanation from a foreign expert, diversions of water flow that had been already made in the upstream are perceived as given condition to water users in the delta, and locals' concerns are more about downstream riparian projects and Vietnamese government's interventions¹¹⁶.

5.1.4 Local scale context

The Mekong delta as a region in Vietnam consists of twelve provinces and a city, which make thirteen administrative bodies, and the population comprise 20% of entire Vietnam in 2010 (see table 7). Whereas gross population growth stays around 0.5% in average, out migration of the region is the highest among all other regions in Vietnam. Water resource availability in the

¹¹² VN 3

¹¹³ VN3

¹¹⁴ NL12

¹¹⁵ <http://www.mrcmekong.org/news-and-events/news/chinas-emergency-water-supply-increased-mekongs-water-level-says-an-mrc-china-joint-study/>, accessed Mar. 2019

¹¹⁶ Based on discussion during the synthesis meeting for NOW UDW Strengthening strategic delta planning (2014-2019)

region has been regarded to be abundant accompanied with the risk of floods, but recently it has experienced drought as well¹¹⁷.

In the Mekong Delta Plan in 2013, the delta is categorised into upstream, middle and downstream/coastal zones based on bio-physical characteristics, which are different from provincial boundaries¹¹⁸. Some international donors, such as JICA, Gesellschaft für Internationale Zusammenarbeit (GIZ, German implementation agency for ODA) and Australian government fund only specific zone or a few provinces based on their expertise and interests¹¹⁹. This is not only based on scientific aspects of expertise, but also in consideration to difficulties in coordinating different provinces under an umbrella concept¹²⁰. Based on this regard, Dutch approach of proposing comprehensive plan to cover all 13 provinces can be innovative and meaningful but quite challenging¹²¹.

Table 7. Land and Demography of provinces in Mekong delta

| Province/ Region | Rural Districts | Population (2010) | Area, km2 | Pop. Density, P/km2 | Pop. Growth Rate, % | Net-migration |
|--|-----------------|-------------------|----------------|---------------------|---------------------|---------------|
| Tien Giang | 8 | 1,677,000 | 2,484 | 675 | 0.25 | +0.2 |
| Ben Tre | 8 | 1,256,700 | 2,360 | 532 | 0.05 | +12.9 |
| Tra Vinh | 7 | 1,005,900 | 2,295 | 438 | 0.27 | +4.1 |
| Soc Trang | 10 | 1,300,800 | 3,312 | 393 | 0.59 | +10.0 |
| Bac Lieu | 6 | 867,800 | 2,502 | 347 | 1.28 | +10.6 |
| Ca Mau | 8 | 1,212,100 | 5,332 | 227 | 0.41 | +27.3 |
| Kien Giang | 13 | 1,703,500 | 6,346 | 268 | 0.89 | +8.7 |
| Total/Average: the Project Area | 60 | 9,023,800 | 24,631 | 366 | 0.51 | +10.1 |
| An Giang | 8 | 2,149,500 | 3,537 | 608 | 0.09 | +8.3 |
| Can Tho | 4 | 1,197,100 | 1,402 | 854 | 0.71 | +1.7 |
| Hau Giang | 5 | 758,600 | 1,601 | 474 | 0.09 | +6.9 |
| Vinh Long | 7 | 1,026,500 | 1,479 | 694 | 0.14 | +13.4 |
| Dong Thap | 9 | 1,670,500 | 3,375 | 495 | 0.23 | +6.7 |
| Long An | 13 | 1,446,200 | 4,494 | 322 | 0.69 | +3.5 |
| Total/Average: Mekong Delta | 106 | 17,272,200 | 40,519 | 426 | 0.42 | +8.4 |
| Red River Delta | 95 | 19,770,000 | 21,063 | 939 | 0.77 | 0.5 |
| N. Midlands & Mountain | 119 | 11,169,300 | 95,339 | 117 | 0.87 | +3.9 |
| N. Central & Central Coastal | 140 | 18,935,500 | 95,885 | 197 | 0.42 | +5.7 |
| Central Highlands | 52 | 5,214,200 | 54,641 | 95 | 1.66 | +0.3 |
| South East (including HCM) | 41 | 17,272,200 | 40,519 | 426 | 2.95 | 19.9 |
| Whole Country | 553 | 86,927,700 | 331,051 | 263 | 1.05 | - |

Source: Statistical Year Book of Vietnam 2010 (General Statistics Office of Vietnam)

Source: (JICA, 2013a)

¹¹⁷ NL9, VN7

¹¹⁸ VN8

¹¹⁹ JP7, VN1, 2

¹²⁰ JP7, 10

¹²¹ NL10, JP7, 10, 11, VN1,

5.2 Drivers, Arena and Decision of Vietnamese cooperation

5.2.1 Drivers of central government

Vietnamese law on hydraulic work¹²² defines the principles of hydraulic work activities as follows;

- *To ensure national interests, national defence and security;*
- *To protect the environment; to adapt to climate change; and*
- *To contribute to ensuring water resource security and sustainable socio-economic development.*

One of Vietnamese researcher also mentioned adaptation to the climate change have been mainstreamed recently, creating new institutions for adaptation measures inside research institutions and municipalities¹²³. Some of them can be also observed in the visions of ODA projects. In Mekong delta plan, it clearly seeks for industrialization to achieve economically sound future even under uncertainties associated with climate change (Royal Haskoning DHV et al., 2013). Additionally, political and financial independency have been great importance to the government. In several JICA analytical reports, it is mentioned that self-initiative from the government is one of the key factors for smooth and successful formulation of the project (JICA, 2014a). From financial aspects, the government borrows ODA loan to secure foreign currency in low interest rate with expectation of inducing foreign investment that contribute economic growth (Sakamoto et al., 2009). On the other hand, the government learnt that accumulative debt including ODA loan hinders their future decisions when it has grown too big and they need to control it by all means¹²⁴. Also, the government tends to seek for multiple measures by asking for similar cooperation to different partners¹²⁵. Based on this, projects can be implemented with overlaps when these missions of central government match agendas of partners. These may create redundancy of the system, but also risk the over expenditure and depletion of ecosystem. Lastly, relatively large size investments on higher education and training on applied science such as engineering and agriculture are pledged and implemented recently with JICA¹²⁶. Compared to Japanese politicians' engagement to these projects and Vietnamese strong motivation for investments on economic growth mentioned above, Vietnamese attitude have been moderate¹²⁷. It is assumed that these cooperation projects might

¹²² The Law on Hydraulic work: No. 08/2017/QH14, on 19/6/2017, effective on 01/7/2018, MARD

¹²³ VN7

¹²⁴ NL6, 8, 10, JP7, 8, 9, VN1,4

¹²⁵ NL6, One of example is that implementation of JICA feasibility study for sluice gate construction in Ben Tre, while Dutch experts were working for Mekong Delta Plan. Even though the Southern Institute of Water Resource Planning (SIWRP) was the key counterpart for both projects, the outputs were towards different directions.

¹²⁶ For example, Can Tho University improvement project (both ODA loan and technical assistance), and foundation of Vietnam-Japan university

¹²⁷ JP9, VN4, 8

have been used to maintain good relationships with some political domain for future cooperation and/or to exhibit their international connections to other actors¹²⁸.

5.2.2 Regional, provincial and local level

Among thirteen provinces in the delta, there are mixed interests on independency of province as well as solidarity as region. The demand for independency can be seen in the future vision in Mekong Delta Plan (2013). Each province insisted to have their own airport or port, for instance. At the same time, provinces are putting their power together based on a feeling among Mekong delta based people that central government is not keen to invest on Mekong Delta's development. In correspondence to this, an advisory board that have direct connection to prime minister was formed to follow up PMR 120 around a year and a half ago¹²⁹. The board consists with eight Mekong delta region origin Vietnamese and two foreign experts to enhance the strategy in relation to foreign aids. In addition, there have been several gathering of the heads of people's committee from 13 provinces since the approval of PMR120¹³⁰. Although it is not clear if these movement were proactively brought by provinces or more of top down order, these actions can create chances of collaborations among provinces.

Objectives and drivers for a research institution are not well consolidated as a whole. They are rather divergent based on individual to group level background and networks among researchers. For instance, a department head aims at contributing capacity development of local farmers, others are motivated more to be acknowledged by international scientists' community, or to mainstream the resilience of individual projects and activities¹³¹. One common interest among them is to secure the fund for their activities. A research coordinators told that they changed the faculty to increase the chance to access funds from international donors. Also, the universities need to keep on attracting students for stable tuition income. For this end, universities try to analyse what is needed from business parties as well as by (future) students and to optimise their programs to bridge both needs¹³². Another driver for their activities is filling the gap between local community and policy makers based on scientific knowledge¹³³.

Interviewed researchers simply explained that improvement of the livelihood by increasing their income is the sole driver at individual or household level, and the market is the strong contributing factor¹³⁴. Choices and agencies of each farmer depend upon the geo-physical conditions, financial and technical capacities as well as access to technically innovative agents such as research institutions¹³⁵. For instance, large scale farmers are able to invest on profit making crops by using small part of their farm as pilot, and expand the crop if it is successful.

¹²⁸ JP4

¹²⁹ NL10

¹³⁰ JP10

¹³¹ VN5,6,7,8,9

¹³² VN8

¹³³ VN5,6,7,8,10

¹³⁴ VN5,6,10

¹³⁵ VN6

Also, small scale farmer at coastal area can shift to shrimp farming¹³⁶, if they can afford the initial investment and the market information.

5.2.3 Involved ministries and institutions

In central government, the Ministry of Planning and Investment (MPI), the Ministry of Finance (MOF), the Ministry of Natural Resource and Environment (MONRE), and the Ministry of Agriculture and Rural Development (MARD) are the focuses of ODA projects related to water management. In addition to these, Southern Institute for Water Resources Planning (SIWRP) is mostly governmental institution that provides technical data to the central government and foreign agencies, and receives technical assistance from international actors. According to Vietnamese officer, officials rotate among MONRE, MARD and SIWRP, so everybody knows each other like a big family¹³⁷. At the same time, Dutch expert observe competitions among those institutions¹³⁸. In addition to those ministries, the Ministry of Construction and MPI are responsible of spatial planning and socio-economic development planning respectively (Royal Haskoning DHV et al., 2013).

For the implementation of provincial or municipality development plans, the provincial Departments of Agriculture and Rural Development (DARD), the Departments of Natural Resources and Environment (DoNRE), investment and construction management board, and HCMC Steering Center for Urban Flood Control are possible counterpart agencies depending on the type of project. In addition, state owned service companies such as Provincial Irrigation Company, Water supply-Sewerage-Environment Companies will be responsible of operation and maintenance of the facility depending on the type of project¹³⁹ (Royal Haskoning DHV et al., 2013). Similar to ministries, provinces somewhat compete each other to be better than others, and the central government somewhat encourage them to do so¹⁴⁰. Research and educational institutions such as CTU are under the supervision of Ministry of Education and Training¹⁴¹.

As for international donors, ADB, Australia, UN, WB, Germany, and IUCN participates the Donor's community named Mekong Delta Forum headed by WB and the embassy of Germany, and JICA and KOICA (South Korean implementation agency)¹⁴² are donors outside of the

¹³⁶ Commentary from Vietnamese participant at The 8th meeting of The Hague Roundtable on Climate & Security, held on 4 Dec. 2018: <http://midesh2020.eu/2018/12/07/mides-as-an-innovative-water-solution-at-climate-roundtable/>, accessed on Mar. 2019

¹³⁷ VN3

¹³⁸ NL9

¹³⁹ Some JICA project summary, such as https://www2.jica.go.jp/ja/evaluation/pdf/2011_VN11-P10_1_s.pdf, and https://www2.jica.go.jp/ja/evaluation/pdf/2017_VN17-P2_1_s.pdf, both accessed Mar. 2019

¹⁴⁰ The Viet Nam Provincial Governance and Public Administration Performance Index developed by the central government (site: <http://papi.org.vn/eng/>)

¹⁴¹ JP10, VN8, 10

¹⁴² Korea became increasingly important economic partner for Vietnam, as its ODA loan amount has been increasing since 2006 and 136.7 million USD, 3rd largest donor in 2014.

community. Their coalitions change in time based on international political environment, economical situations of countries and personal connections among diplomats and officers¹⁴³.

5.2.4 Decisions of National government

Since early 1990's, decision making process of Vietnamese government has been top down approach especially when it comes to ODA projects. The central government prioritized the investment on activities that bring further industrialization and growth, such as construction of hydropower, transportation infrastructure, and technical assistances that facilitate foreign investment. When these projects were settled, investments were shifted to improvement of environment, adaptation to climate change and higher education (JICA, 2014b). Recently, the projects that assist the government to comply with international agreements (e.g. Paris agreement) have been also implemented as the country is assumed to be vulnerable to the consequences of climate change¹⁴⁴. Also, the government attempts to apply bottom up approach for decision making process, but the results are not satisfactory to local people¹⁴⁵. Furthermore, Vietnamese government does not easily accept recommendation from international partners and holds the control of foreign activities and investments by themselves¹⁴⁶(JICA, 2014b; van Staveren et al., 2018).

5.2.5 Decisions in local institutional level

At the local research institution level, departments' collective decision is made to be internationally competitive by expanding network to advanced researchers abroad and investing on modernized facilities¹⁴⁷. Also, it works closely with community, and decide research topic based on request from or issues observed at communities¹⁴⁸. In this aspect, their decisions are made for improving the livelihood in the delta by research (improving agricultural production, efficiency for industry, reflecting local voices to social system etc...) and providing better education to students¹⁴⁹.

For provincial officers too, international competitiveness is one of contributing factors for their decision. In the designing stage of sewer network system, there was a request for upgrading the pipe system with anti-corrosion coating¹⁵⁰. Although the upgrade was not necessary from technical view and it caused increase of budget, the local government strongly requested as it was thought to be standard for neighbouring countries.

¹⁴³ VN1, NL10, NL11

¹⁴⁴ QJP4

¹⁴⁵ VN5

¹⁴⁶ JP8

¹⁴⁷ VN8, JP10, QJP3

¹⁴⁸ VN5,6,10: CTU researchers hear concerns from 13 provinces in the region and pick up a few emerging issues as new topics for research. This will be rotated from provinces to another, so that the research can equally contribute all provinces in Mekong Delta. For the National University of Vietnam, researchers conduct multi-disciplinary study, analyse the issues and solutions, and make policy recommendations to central government.

¹⁴⁹ VN5,6,8,9, JP10

¹⁵⁰ JP7

5.2.6 Decisions in community and individual level

At individual level, maximizing short term benefit under the given condition no matter if the change in environment occurs (climate change, national or local government's interventions, upstream country infrastructure etc), make choice of what to grow based on the market price and the available resource. A researcher (agriculture) in the delta¹⁵¹ explained;

The most important factor for farmer's practices (and change of practices) is market. The research can assist farmers to have more choices and techniques.

For this purpose, local community (mainly fishers and farmers) have been flexible to adjust their activities to changing legislation, political regime and bio-physical environment¹⁵². This is consistent with what Benedikter (2014b) and Biggs et al., (2009) describe in their researches on adaptive capacities of farmers in Mekong Delta. However, evolutions of agriculture related policies and increasing intensity of climate change have made the lives in the delta harder than ever. Nguyen et al., (2019) examined the capacity of farmers to adapt transformation of livelihood (see figure 12), and suggest to provide support to increase farmer's motivation to change. A researcher explained that¹⁵³ "the central government is also trying to adapt bottom-up approaches in policy making process, but the results are not satisfactory from the view of local people. The government is failing to get opinion of stakeholders, but the way to analyse them and put into practice is not really reflecting people's voice". In case all attempts fail, and a local hold some savings for transport, moving out from the delta would be ultimate option as we have seen in the table 7 in the previous section.



Source: (Nguyen et al., 2019)

Figure 12. Motivation-Ability relation of farmer's adaptability of new livelihood models

¹⁵¹ VN5

¹⁵² VN5,7,10

¹⁵³ VN5

5.2.7 Impacts to water flows

Based on the current top-down decision making structure of Vietnam, impacts on water flow are initiated from the central government in the form of development of hydraulic infrastructure, Decree or policy for land use, mechanical use, and import and export policies. These are locally implemented by provincial institutions, and then materialized to affect farmers and fisheries. In the case that infrastructure projects can improve farmer's income, the facility will be utilised in accordance with designed purpose. However, if the facility works adverse way, for example sluice gates around shrimp farmers, the gates will be left open. Technical innovations follow similar cycle. Even though efficiency of a farming system is established by researchers, it will not be practised unless farmers see the profitability of the innovative method¹⁵⁴. Vietnamese researcher mentioned¹⁵⁵;

Local people can also adapt to climate change by themselves. Government sometimes change policy in accordance with international trend and other reasons. For example, the shift from 3 to 2 times rice harvest. Each time the policy change, local people need to adapt again.

In Vietnamese system, each cluster of society from the central government to farmer react to the consequences of changing climate, diverted flows from hydraulic infrastructures, international politics and market conditions. Finally, farmers make decisions for water use. At individual level, decisions may vary as their motivation, agency, information differ. These decisions collectively become actual interventions to water flows. Further, when international cooperation activities are combined with those domestic diffusions of impacts, cumulative effect may be highly uncertain.

5.3 Conclusion

This chapter presented the history of interventions in Mekong delta, brought by colonists, the central government and the foreign assistances. Throughout the history, colonists and Vietnamese engineers from north had not been successful in managing water to achieve the same efficiency as in Red River. They had introduced hydraulic infrastructures with pumping system, together with collective farming networks based on the theories and successful water management experience in the other region. Intensive investments in terms of physical infrastructures and chemical usage in agricultural purposes after economic renovation once improved the productivity in the delta. However, the system brought by external knowledge did not ecologically fit in the delta and created the endless cycle of investments.

Bio-physically, water in the delta is sourced from upstream countries describes dependency to upstream water management rather than its own. As the result of relatively less productivity and stronger attractiveness of other places such as HCM city, out migration from delta to other region surpass the inflow.

¹⁵⁴ VN6, QJP4

¹⁵⁵ VN7

The motivation of central government for sustainable development of the Mekong delta is not as credible as its commitment to strengthen the country force and achievement of economic growth. Nonetheless, based on the long-time cultivated relationship on water governance and delta alliance network with the Netherlands, the government of Vietnam requested the Dutch government to propose the future direction for Mekong delta. After handed over the plan from Dutch government, Vietnamese government moved forward by announcing PMR120 to allocate the implementation task to ministries.

There are still challenges for implementation of the plans. First, even though international donor community is supportive and WB has pledged the provision of fund, disbursement of the fund has limitations as the government's external debt has increased up to 65% of total GDP. Second, different ministries and provinces have their own agenda and coordination among them is not realistic in many experts' view. Third, local communities and farmers are not yet fully involved nor informed, while they will potentially be affected by or impact on the implementation of the delta plan.

Chapter 6 Discussions and Conclusion

- This chapter presents at first, the answers to research questions; namely, visions, solutions and interventions offered, and how these are perceived by Vietnamese actors based on the analysis made through chapter 4 and 5.
- Following to those answers, the discussions on the analysis compared to the existing research results presented in chapter 2, conclusions and reflections through the research will be presented afterwards.

6.1 Visions developed for Mekong Delta (SRQ1-1)

6.1.1 Dutch vision: Conceptual and long term

Dutch visions of Mekong delta is described in the Mekong Delta Plan (2013) as safe place to live in, to cultivate and to work at, with the agro industry and effective high value chain structure. It should be prepared for the change in climate and other natural environment for coming generations. These visions were brought by back casting from 50-100 years in the future based on the scenario that describes possible future directions of climate change and international market. The plan proposes the moderate water flow control allowing seasonal flood that result different agricultural strategy for Upper, Middle and Coastal zones with variety of bio-physical characteristics. This also aims at guiding other development activities by different actors and international partners.

6.1.2 Japanese vision: Concrete and single sector oriented

Japanese cooperation does not provide overall “vision”, instead, each project has its own goal within less than 5-10 years’ timeframe with single sector oriented solutions (e.g. agriculture, higher education, urban sanitation etc.). For example, sluice gate constructions aimed at preventing salt water intrusion, and ultimately improving agricultural productivity of the target area, and technical cooperation at CTU aims at creating good connection among research, education and business activities, which contribute economic growth of both Vietnam and Japan¹⁵⁶. Some of development planning study propose short list of projects (with the possibility of fund from Japanese government). Altogether, these projects aim at economic growth and recreation of sustainable living conditions. Also, these projects were proposed based on the analysis of existing data and future forecast using scientific models (JICA, 2013a).

Both recognize the agriculture as main industry for the delta, but Dutch emphasize on sustainability and coordination with the long-term vision, while Japanese emphasize on economic growth, efficiency and prosperity for short term. The directions and time range of

¹⁵⁶ JP10

approaches are contrary, as Dutch back casts from 50-100 years future whereas Japanese forecasts toward 5-10 years future based on the existing data.

6.2 Water issues described in visions (SRQ1-2)

Dutch describes vulnerability to climate change, large-scale investment on infrastructure that potentially cause future regret and waste of investments. Also it calls attention for land subsidence and sea level rise that may occur in the future and intensify the risk of floods and depletion of water quality. It also elaborates the lack of coordination among provinces and among development partners that cause inefficient investment on hydraulic infrastructure and social arrangement, which may make the delta more vulnerable.

Dutch analyse the delta based on natural scientific knowledge that they have gained through the experience of living in the delta and the decisions they have been taking based on the uncertainty scenario under changing environment. As they have learned the problem of only looking to the short term (economical) profit and investing in it will increase the risk of natural disasters, and fighting with nature is not clever idea for human beings. This approach of future planning is proposed by scientists (researchers and consultants), who had developed their expertise among international competitors. For Dutch scientists and experts, it is important to address the similarity of issues they have faced in the past and that of Vietnamese today. It raise the expectation for Vietnamese that package of Dutch expertise can offer solutions.

Water issues in Japanese visions are described from view point of project formulation that are solvable with investments on physical facilities and capacity building. For instance, project for urban sanitation describe lack of wastewater treatment and monitoring system, which is causing pollution and worsen living conditions. Another project for technical and financial cooperation to CTU describe the lack of highly certified degree holders and facilities for research institution. Each descriptions can tell which department of JICA and line ministry in charge. Even though several projects acknowledge the climate change as an issue to be incorporated in the simulation models or setting target value, it does not go beyond one of precondition for program designing. On top of these, the biggest “issue” for JICA is obstacles for project implementation, which limit the disbursement and may cause the delay of completion. All these issue descriptions are to avoid unnecessary transaction works among different departments in JICA, and different ministries for technical advice.

In addition, Japanese focus on economic growth and analyse the situation in the view of economic development. They also try to apply Japanese “successful experiences” of economic growth to Vietnam as a model case scenario. It also aims at facilitating Japanese industry to expand their business utilising ODA as priming Japanese investments (and make profit in Vietnam). The outcome of Japanese cooperation thus does not directly aimed at changing water flow nor mitigate risk, but the result of cooperation may indirectly affect flows non-purposely. This approach is justified with Japanese experience, as this was exactly what Japanese government had done during economic growth in the past. At the same time, line ministries in charge of water resource and environment made effort to expand water supply to industry to prevent excessive ground water extraction (JICA, 2017a). These were done in trial and error

rather than planned manner with scientific evidences, so it is difficult to transfer to other country as “Japanese experience” and are not told in the story of success.

6.3 How different cooperation shape the water flows (RQ1)

The cooperation proposed by NEDECO in 1993 guided investments to heighten dykes and increase the control of water flows by human with complementary considerations to ecological water use. This allowed some areas to increase agricultural production by avoiding floods, while reducing inflows of sediment that bring natural nutrients to crops. This might have reallocated the flood risk to somewhere else (Triet et al., 2017), and imposed farmers to invest on chemical fertilisers in place of natural ones (Benedikter, 2014b). As the project proposed infrastructure projects were funded by WB and AusAID, these stimulated agricultural boom with triple rice cultivation, NEDECO plan became the base of interventions to deplete water quality and other environmental degradation. To add, this might have left the linkage between “successful agricultural growth” and Dutch cooperation to Vietnamese policy makers and request for another Mekong delta plan in 2013.

If the Mekong Delta Plan in 2013 will be implemented in accordance to Vietnamese situation, this may result redistribution of water flow in more nature oriented directions with minimised control by artificial diversions such as dykes and canals. This may also redistribute flood risk and natural nutrition which may reduce accumulative damage from floods in the entire delta. The implementation of the Mekong Delta Plan requires continuous effort and inputs from Dutch government and experts as it does not flow naturally in Vietnamese ground (Hasan et al., forthcoming). Also, Dutch original plan needs translations into Vietnamese context by Vietnamese actors who understands the philosophy behind the plan and also be familiar with Vietnamese physical and social ground¹⁵⁷.

As Japanese cooperation do not aim to manage water, the influence on water flow is indirect and non-purpose. One of possible direct interventions will be sluice gate construction in Ben Tre province. Although this project is questioned by researchers (Seijger et al., 2019) and some of interviewees¹⁵⁸, the project was formulated in line with NEDECO plan (1993) when the development survey was initiated in 2011. The basic study for sluice gate addressed the conflicting water usage and shortage of fresh water, and the risk of concentrated shrimp farming. However, it is assumed that the study team could not propose scientifically optimal facility, as shrimp farming was partially supported by people’s committee for its profit¹⁵⁹. Other interventions that have possibly affected the quality of water flow were agricultural cooperatives (see section 4.5.2) and research on mix farming of livestock and fisheries (Yasunobu et al., 2000). The latter was research on farming method, so it is not clear in what extent the method was applied or will be applied in the future.

¹⁵⁷ NL6

¹⁵⁸ NL10, JP7

¹⁵⁹ http://open_jicareport.jica.go.jp/pdf/12151569.pdf, accessed Mar. 2019

It is possible to differentiate projects by origin of funding or the nationality of main experts. However, as the Dutch approach influence the concept of planning and the following plans were shaped in the line of previously proposed plan, it is not clearly separable.

6.4 Solutions offered (RQ2)

Dutch has been offering comprehensive consultation based on their expertise to make the Delta safe place to live. Also they gave comments and advise on existing national plans for development of hydraulic infrastructure through mutual communications. Through this process, some of Vietnamese counterparts started to understand the philosophy behind the MDP, and to translate the message into Vietnamese context. This process principally benefits to Vietnamese bureaucrats to be familiar with new approach, to update their works and the delta related Dutch consultants to raise expertise in the field.

On the other hand, Japanese offer hard infrastructure solutions for the priority issues together with necessary human and financial resources (usually ODA Loan). Vietnamese can indirectly profit from these solutions by being the part of these activities. Vietnamese experience OJT with Japanese experts/construction companies and absorb Japanese' technique if it is useful for them. However, the most beneficially from this cooperation is the contractors of infrastructure, who are often Chinese, Korean and Japanese, and the industry with those nationalities.

6.5 Perceptions of Vietnamese to cooperation (RQ3)

In central/practical level and at local level, Dutch cooperation enables them to see the bigger visions, and philosophy behind it¹⁶⁰. Further, they perceive Dutch approach and outcome are interdisciplinary (e.g. the combination of technical social in Mekong Delta Plan), which are based on scientific knowledge and social arrangement in their own country and other places¹⁶¹. Also, some researchers think that these outcomes can be easily piloted, demonstrated and scaled up for bigger impact. Others think Dutch approaches are too abstract/conceptual to practice and requires time to reflect on planning system.

MDP seems to be academic and scientific document, which can be platform for cooperation. Considering the fact that Vietnamese and Dutch institutions are different, and especially there is no single institution for Mekong delta water management in Vietnam, implementation of MDP will be difficult unless such institution will be created. Otherwise, the plan needs to be distributed to provincial level and breakdown the activities¹⁶².

Dutch actors see it in different ways. An expert, who was involved from the planning process of Mekong Delta Plan explained¹⁶³;

¹⁶⁰ VN2, 3, 7, 8, 9

¹⁶¹ VN9

¹⁶² VN2

¹⁶³ NL12

Usage of the words “Delta Plan” might have been misleading. The words have nuance of making drastic change, which is not necessarily related to planning of physical delta. Vietnamese counterparts looked disappointed when we presented the first draft to them.

Another explained “*Considering the slow progress of implementation and engagement of Vietnamese government, MDP and PMR120 have already lost the momentum to way forward.*”¹⁶⁴

Some (past) counterparts of Japanese project described that the resources provided by Japanese projects are helpful to improve Vietnamese activities as it complements lack of funds in certain departments¹⁶⁵. Also, some others mentioned Japanese approach as “*detailed survey on an issue and data based planning has things to learn from*”¹⁶⁶. On the other hand, some mentioned that Japanese work closely with the central government, so their activities reflect the opinion of central government than regional/provincial voices. Also, they tend to come up with the infrastructure constructions rather than capacity development through education. In addition, Japanese approaches are too much depend on “Japanese successful path”, which are sometimes out of date compared to the recent global standard¹⁶⁷. For instance, even though usage of smartphone or information technology to disseminate flood information or salinity are requested by Vietnamese counterparts¹⁶⁸, Japanese assistance does not include them as it is not in the menu. Further, Japanese cooperation is expensive, time consuming. Even worse, the quality does not correspond to the cost, or the contents of assistance are over speck for local context in some cases¹⁶⁹.

With regard to both Dutch and Japanese cooperation, there was a remark from an officer for central government¹⁷⁰. After addressing huge impact on aquaculture from upstream dam development and the impact of severe environment that cause the restriction of water distribution to urban population, the officer mentioned;

None of Dutch or Japanese report mention about aquaculture and drinking water, considering the agriculture is the biggest consumer of water resource.

Lastly, there was a discussion with one of the researchers from the delta¹⁷¹ also regarding both Dutch and Japanese cooperation. His concern about the application of research to the practice in the delta was that, there are many useful findings based on research results; however, it is difficult to convince policy makers and financial providers to apply those findings to practice. Based on that, we discussed if he were to choose approaches to realise the Mekong Delta Plan,

¹⁶⁴ NL10

¹⁶⁵ JP3, VN6,8

¹⁶⁶ VN5,9

¹⁶⁷ JP2

¹⁶⁸ NL9, JP2

¹⁶⁹ NL9, VN4, p48 of Third Party Evaluation Report 2015 by the MoFA Japan, see footnote 40

¹⁷⁰ VN3

¹⁷¹ VN9

having Dutch conceptual vision as ultimate objective of development, he could apply optimal methods to disregarded people and ecosystem among all available means. Those include research results, knowledge and expertise offered by Dutch, Japanese, Vietnamese and any other partners.

These remarks and discussion led me to think about suggestion of Molle (2008);

One option for practitionersis to consider nirvana concepts as boundary objects and to engage with them, reworking and re-appropriating meanings in order to use their rhetorical power to create political space and to implement changes or instil ideas that they want to defend.

These all together suggest that, Vietnamese knowledge about water management in the delta, especially of those from local institutions and communities are more comprehensive than any other external actors'. If local practitioners like him understand their agency and guide external resources to materialise a shared vision, water management practices can be modified into the way that contribute the benefit of direct beneficiaries including aquaculture of the delta.

6.6 Discussions

Through this research, I found three types of “success” making and maintenance stories in Dutch, Japanese and Vietnamese versions.

Dutch story tells that the ideal goal: “safe and liveable delta for long-term” can be achieved with the support of scientific knowledge and arrangements of social system with reference to the model case demonstrated by Dutch society. Therefore, it is recommendable for deltaic countries to join the alliance, Dutch led international network, to share the issues and to learn from others, especially from Dutch experience. Application of Dutch story to Vietnamese Mekong delta seems even more plausible as it is supported by international donors' community in Hanoi, led by WB and German government with the fund already pledged by the Bank.

Japanese story tells that economic growth can be achieved by investing on hard infrastructure development such as ports and roads that make transportation of goods efficient as Japan had experienced in the past. This approach is proved to be universal as it has successfully transferred to other Asian countries and contributed economic growth. Japanese cooperation is able to provide all the means to achieve the goal in forms of technical transfer, concessional loans together with direct investments and employments from private sector. It can also provide studying and working opportunity in Japan to add value to academic certificates that may assist Vietnamese to become the member of developed, industrialized and powerful countries.

Vietnamese story had been more implicit than others, at least for external eyes, but clearly shows the image of highly productive agriculture that make country strong and rich. The central government and engineers succeeded in realizing this in the north, and they managed to spread the success to the south. These successes were possible by mobilising hydraulic engineering knowledge and relatively expensive machineries that can be provided through certain business network. Contested international partners, who are willing to provide technical and financial

resources prove that Vietnam is attractive partners to them and it has potential to grow richer and stronger.

Behind these, there are unwritten side stories for each success. Dutch story is ongoing and yet to be proved its soundness towards uncertainties under harsher climate condition. In addition, it requires 5Ds for successful implementation of the Delta plan, but at least 2 Ds: Delta commission and Delta fund are missing and challenging to establish in Vietnamese system¹⁷². In addition, even for Dutch cooperation, water flows were side lined from the focus of cooperation, and flow became instrumental, which materialise Dutch expertise. Japanese story had been worn out and requires huge investment to maintain, which is usually covered by recipient's cost. Moreover, the success in industrialization was possible largely by neglecting safety of the society, and it was revealed that "the advanced technology" was not feasible to extreme events such as earthquake and tsunami. Moreover, not only the technical failure, the government has been unsuccessful in responding aftermath of those events. Vietnamese raised internationally recognized indexes, such as GDP per capita and rice exportation utilising natural and human resources of the delta and recently external funds. Then they redistributed the profit of this "success" to the limited part of the society, while imposing difficult life on local farmers and aquaculture, and postponing the cost of investments to future generations.

Some parts of these stories are connected in the past or at the present, based on the needs and supplies at the moment of interactions. Successful or unsuccessful experiences through those interactions leave physical (in form of hydraulic infrastructures) or memory (as successful experience) traces and influence further choices. For example, around the beginning of 20th century, French colonists brought Dutch dyke system to the Mekong delta, which remained as foundation of delta planning for long time. About the same time, Dutch hydraulic engineers and military advisors supported modernisation of Japanese government (see preface). The achievement of Dutch hydraulic engineers in Japan are kept in the textbook of young engineers, and the local communities are still grateful for those works. Exploring the water governance in the Mekong delta based on the framework consists of context, drivers, arenas, decisions and impacts enabled me to find out these stories. Further, by comparing these on a framework shed a light on stories and revealed what is behind them.

Based on these findings, I conclude that the methodology has been suitable to understand complexities of international cooperation in water management. Also, alongside the research progress, interests in water flows were partially disappeared if not completely, and replaced by flow of power, investment, knowledge and expertise. Here, water has been used as an icon to call for more attentions and increase the power of certain party in the intertwined web around water resource. Furthermore, this research highlighted the Vietnamese agencies in this international cooperation that is comparable to those of donors. This has been possible by comparing two international partners' approaches to Vietnam. These findings verifies the methodology and suggests application to similar cases.

¹⁷² NL10, 12

In case of further application of methodology, research objects and research area need to be carefully defined based on suggestions of Molle (2008). If the target area were Red River region or North part of the country, the context, power balance and agencies of each state must have been different, and comparing the Netherlands and Japan would not have been as meaningful as in the Mekong delta.

6.7 Conclusion

Initially this research was intended to understand the interactions between water flows in the Mekong delta and interventions shaped by Dutch and Japanese cooperation to Vietnamese government. It turned out that, as discussed in the previous section, water flows had been sidelined from the focus of cooperation and domestic decision making. Yet, water flows in the Mekong delta are crucial issues for those who are living in the delta, including aquaculture. Then how can this research contribute to their needs? The result of this study suggests that Vietnamese in the delta may take the lead in framing the direction of water management in the delta, which suits localised visions. Then divert flows of interventions that international partners and domestic actors may offer to guide them into the direction toward their own visions. In doing so, the findings of the research would be helpful in understanding the drivers and power balances of different institutions inside partner state, and also Vietnamese agency in negotiating with partners and domestic authority.

In conclusion, water governance in the Mekong delta has been shaped by Vietnamese central government with utilising interventions provided by international partners and its own sources guided by their political agenda. In parallel, actors in Mekong delta are trying to increase their agencies to divert the flows based on their own agendas. The future flows will depend on how those power balance will shift, and how the global financial and bio-physical environment will be like. Also, it is assumed that in the process of implementing Mekong Delta Plan, translation of Dutch approach into Vietnamese context will be necessary. Depending on the quality of this translation, which might be collaborative work of Dutch and Vietnamese, the plan may contribute sustainable and safer livelihood in the Mekong delta. Also, Japanese cooperation to research will need the translation or application to the local context, and may be useful for some of Vietnamese actors.

The other conclusion I would draw from this research is that “successful experience” stays in memory of the government and society much stronger and longer than lessons learnt and failures. At some point, success making works as injections for developed societies and those societies need continuous maintenance of those success stories even with the cost of someone else. These are different aspects of international cooperation and ODA.

Based on the time and other resource limitation, I recognize that this study could not cover several important parties. Further research on the parties that are not well covered by this research, for instance, local communities in Mekong delta, Dutch business entities, or other international partners, such as World Bank and German cooperation may contribute more insights of the complications around the delta.

6.8 Reflections

First of all, conducting this research for me as a natural science based person within 6 months' period has been really challenging. I came to aware what some theories mean towards the end of this study, but this requires more time to understand in relation to practical examples and own experiences. In addition, Dutch and Vietnamese language have been restriction in accessing certain information and limited the analysis. I felt so because for Japanese case, sometimes report in Japanese has more detailed information than English version. Also, the limited network for especially Japanese interviewees might have affected the result of this research.

In the beginning, my focus was on how the delta planning knowledge and expertise cultivated in the western ground can fit oriental place like Vietnam. Then gradually came to be aware that the colonial history in the Mekong delta and migration from the North Vietnam completely changed the perceptions of nature for people in the delta. Moreover, the knowledge that I felt more suitable for Vietnam, Japanese approach turned out to be even more exploitative than the western. Around that time, I once lost my own goal for this study. But after a short while, I started to find the link between the past and present, the modern society build upon the tradition. Finding out these linkages was really interesting and became one of finding of this research.

My background caused the bias and difficulties as mentioned above, but also helped the research activities. Some of researchers and experts told me that Vietnamese are not so open minded and difficult to approach. But in the reality, they were willing to respond and share their opinion. Compared to my African colleagues in the past, Vietnamese were more supportive to interviews and other things during my stay. I assume they were so because I am Japanese, and perhaps I took subjective attitude toward my interviewees and kept on that during interview. Actually I did not choose this position from the beginning of this study, but realised in the end that I could not take any other position based on my experiences as a development worker.

Throughout the study at IHE, absence of practical aspect from social study was one of my concerns about social science. Even though some studies mention about practitioners, they do not capture the time consumed to negotiate, to get approved, to procure and to implement physical constructions on the ground. Sometimes I felt like social scientists are just criticizing the real world to create their future job in the name of science. This was the reason why I positioned myself closer to study objective as a subjective observer. I hope the readers could smell a bit of sweat, feel the frustrations and the contributions of practitioners through this study.

Lastly, this research made me rediscover the pathway of Japanese development, insanity in the war time and different kind of invasion to Asian countries through economic activities. I personally felt that we should learn from the history of sustainable life before industrialization and apply the knowledge for our life in the phase of population decline and shrinkage of economy. After the completion of this master's study, I would like to take part in the reorganization of our society as a practitioner, development worker or researcher.

The meaning of studying social science is to think twice, three times or even more times before doing something (Eric Swynghedouw¹⁷³).

¹⁷³ Book launch of "Water, Technology and the Nature state" held at IHE-Delft, 2018 Nov. 2

References

- Adas, M. (2009). *Dominance by design: Technological imperatives and America's civilizing mission*. Harvard University Press.
- ADB. (2009). *Water Sector Review, Vietnam*. Retrieved from <https://www.adb.org/projects/documents/water-sector-review-cofinanced-government-netherlands>
- Adler, E., & Haas, P. M. (1992). Conclusion: epistemic communities, world order, and the creation of a reflective research program. *International Organization*, 46(1), 367–390.
- Akiyama, T., Nakada, T., & Aoyagi, K. (2008). *Modeling Japanese ODA's allocation to recipient countries (original: 日本のODAの国別配分策定モデル)* (Discussion Paper on Development Assistance). *Discussion Paper on Development Assistance*. Retrieved from https://www.fasid.or.jp/_files/publication/DP_15_J.pdf
- Bakker, K. (1999). The politics of hydropower: Developing the Mekong. *Political Geography*, 18(2), 209–232. [https://doi.org/10.1016/S0962-6298\(98\)00085-7](https://doi.org/10.1016/S0962-6298(98)00085-7)
- Bakker, K. (2012). Water: Political, biopolitical, material. *Social Studies of Science*, 42(4), 616–623. <https://doi.org/10.1177/0306312712441396>
- Barrett, B. F. D. (1999). Environmentalism in periods of rapid societal transformation: The legacy of the industrial revolution in the United Kingdom and the Meiji Restoration in Japan. *Sustainable Development*, 7(4), 178–190. [https://doi.org/10.1002/\(SICI\)1099-1719\(199911\)7:4<178::AID-SD113>3.0.CO;2-L](https://doi.org/10.1002/(SICI)1099-1719(199911)7:4<178::AID-SD113>3.0.CO;2-L)
- Benedikter, S. (2014a). Extending the Hydraulic Paradigm : Reunification, State Consolidation, and Water Control in the Vietnamese Mekong Delta after 1975. *Southeast Asian Studies*, 3(3), 547–587. <https://doi.org/10.1016/j.jfranklin.2014.10.018>
- Benedikter, S. (2014b). *The Vietnamese hydrocracy and the Mekong Delta: water resources development from state socialism to bureaucratic capitalism*.
- Berthélemy, J.-C., & Tichit, A. (2004). Bilateral donors' aid allocation decisions--a three-dimensional panel analysis. *International Review of Economics & Finance*, 13(3), 253–274. <https://doi.org/10.1016/j.iref.2003.11.004>
- Biggs, D. (2012a). *Quagmire: Nation-building and nature in the Mekong Delta*. University of Washington Press.
- Biggs, D. (2012b). Small machines in the garden: Everyday technology and revolution in the Mekong Delta. *Modern Asian Studies*, 46(1), 47–70. <https://doi.org/10.1017/S0026749X11000564>
- Biggs, D., Miller, F., Hoanh, C. T., & Molle, F. (2009). The Delta Machine: Water Management in the Mekong Delta in Historical and Contemporary Perspectives. In F. Molle, T. Foran, & M. Kakonen (Eds.), *Contested Waterscapes in the Mekong Region: Hydropower, Livelihoods and Governance*. (pp. 203–226). earthscan.
- Bijker, W. E. (2002). The Oosterschelde Storm Surge Barrier A test case for Dutch water technology, Management and Politics. *Technology and Culture*, 43(July), 569–584.
- Birkmann, J., Garschagen, M., Van Tuan, V., & Binh, N. T. (2012). Vulnerability, Coping and Adaptation to Water Related Hazards in the Vietnamese Mekong Delta. In F. G. Renaud & C. Kuenzer (Eds.) (pp. 245–289). Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-94-007-3962-8_10

- Bressers, H. T. A., & O'Toole, L. J. J. (1992). *International Comparative Policy Research: Preparing a Four Country Study on Water Quality Management*. Enschede: University of Twente Press.
- Calleja, R., Carment, D., & Samy, Y. (2016). The Fragmentation of Aid. In S. Klingebiel, T. Mahn, & M. Negre (Eds.) (pp. 295–309). London: Palgrave Macmillan UK. <https://doi.org/10.1057/978-1-137-55357-7>
- Cash, D. W., Adger, W. N., Berkes, F., Garden, P., Lebel, L., Olsson, P., ... Young, O. (2006). Scale and Cross-Scale Dynamics: Governance and Information in a Multilevel World. *Ecology and Society*, 11(2), 8. Retrieved from <http://mediaserver.xpp.cesca.cat/tdx/documents/38/52/48/38524800695246734570842703597068445898/>
- Cleaver, F., & De Koning, J. (2015). Furthering critical institutionalism. *International Journal of the Commons*, 9(1), 1–18. <https://doi.org/10.18352/ijc.605>
- Coward, E. W. (1980). *Irrigation and agricultural development in Asia: Perspectives from the social sciences*. Cornell University Press.
- Dang, T. D., Cochrane, T. A., Arias, M. E., & Tri, V. P. D. (2018). Future hydrological alterations in the Mekong Delta under the impact of water resources development, land subsidence and sea level rise. *Journal of Hydrology: Regional Studies*, 15(November 2017), 119–133. <https://doi.org/10.1016/j.ejrh.2017.12.002>
- Delta Alliance. (2018). Delta Alliance: Home. Retrieved October 25, 2018, from <http://www.delta-alliance.org/>
- Deltares. (2011). *Towards a Mekong Delta Plan*. Retrieved from <http://edepot.wur.nl/330185>
- Di Baldassarre, G., Viglione, A., Carr, G., Kuil, L., Salinas, J. L., & Blöschl, G. (2013). Socio-hydrology: Conceptualising human-flood interactions. *Hydrology and Earth System Sciences*, 17(8), 3295–3303. <https://doi.org/10.5194/hess-17-3295-2013>
- Diplomat magazine. (2017). Vietnam-Netherlands Relationship: Milestones and Prospect for The Future - Diplomat magazine : Diplomat magazine. Retrieved October 17, 2018, from <http://www.diplomatmagazine.nl/2017/07/01/vietnam-netherlands-relationship-milestones-and-prospect-for-the-future/>
- Dore, J., & Lebel, L. (2010). Deliberation and scale in mekong region water governance. *Environmental Management*, 46(1), 60–80. <https://doi.org/10.1007/s00267-010-9527-x>
- Dore, J., Lebel, L., & Molle, F. (2012). A framework for analysing transboundary water governance complexes, illustrated in the Mekong Region. *Journal of Hydrology*, 466, 23–36. <https://doi.org/10.1016/j.jhydrol.2012.07.023>
- Elshafei, Y., Sivapalan, M., Tonts, M., & Hipsey, M. R. (2014). A prototype framework for models of socio-hydrology: identification of key feedback loops and parameterisation approach. *Hydrology and Earth System Sciences*, 18(6), 2141–2166. <https://doi.org/10.5194/hess-18-2141-2014>
- Evers, H.-D., & Benedikter, S. (2009a). Hydraulic bureaucracy in a modern hydraulic society - strategic group formation in the Mekong Delta. *Water Alternatives*, 2(3), 416–439.
- Evers, H.-D., & Benedikter, S. (2009b). *Strategic group formation in the Mekong Delta - the development of a modern hydraulic society* (ZEF Working Paper Series No. 35). ZEF Working Paper Series (Vol. 35).
- Fic, T., Kennan, J., & Willem, D. (2014). *The effects of Dutch aid on development and the Netherlands - A modelling approach*. Retrieved from <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9045.pdf>

- Garschagen, M. (2013). Resilience and organisational institutionalism from a cross-cultural perspective: An exploration based on urban climate change adaptation in Vietnam. *Natural Hazards*, 67(1), 25–46. <https://doi.org/10.1007/s11069-011-9753-4>
- Goodland, R. (2010). Viewpoint - The World Bank versus the World Commission on Dams. *Water Alternatives*, 3(2), 384–398.
- Grumbine, R. E., Dore, J., & Xu, J. (2012). Mekong hydropower: Drivers of change and governance challenges. *Frontiers in Ecology and the Environment*, 10(2), 91–98. <https://doi.org/10.1890/110146>
- Hamasaki, H. (2010). Sustainable development in the Mekong and local governance (original: メコン河流域の持続可能な発展とローカル・ガバナンス). *水資源・環境研究*, 23, 23–36.
- Hasan, S., Evers, J., Zegwaar, A., & Zwarteveen, M. (forthcoming). Making waves in the Mekong Delta: the work behind the transfer of Dutch Delta Planning expertise. *Journal of Environmental Planning and Management*, 1–2.
- Hashimoto, T. (2008). *The integrated development study as a tool* (original: 開発調査というしかけ). Soseisya Shinsho (創成社新書). Retrieved from <https://www.books-osei.com/book/50272.html>
- Hori, H. (2000). *The Mekong: environment and development*. United Nations University Press.
- Hung, N. N., Delgado, J. M., Güntner, A., Merz, B., Bárdossy, A., & Apel, H. (2014). Sedimentation in the floodplains of the Mekong Delta, Vietnam. Part I: Suspended sediment dynamics. *Hydrological Processes*, 28(7), 3132–3144. <https://doi.org/10.1002/hyp.9856>
- JICA. (1996). *Present status and future vision of Mekong River Committee*.
- JICA. (2013a). *Climate change adaptation for sustainable agriculture and rural development in the coastal Mekong Delta in Vietnam*. Retrieved from http://open_jicareport.jica.go.jp/pdf/12114617_01.pdf
- JICA. (2013b). *Pathway of Vietnam-Japan partnership [Japanese]*.
- JICA. (2014a). *Data collection survey on Japan's ODA in the Socialist Republic of Vietnam, Final report*. Retrieved from http://open_jicareport.jica.go.jp/360/360/360_123_12150876.html
- JICA. (2014b). *Impact of Japan's ODA in Vietnam*, (original: ベトナムにおける我が国ODAのインパクト調査). Retrieved from http://open_jicareport.jica.go.jp/360/360/360_123_12150868.html
- JICA. (2017a). *Japan's Experience on Water Supply Development*. Retrieved from http://open_jicareport.jica.go.jp/pdf/12285284_01.pdf
- JICA. (2017b). *Japanese ODA*. Retrieved from https://www.jica.go.jp/about/report/2017/ku57pq000022ernq-att/J_06.pdf
- JICA. (2018). *Corridor Development Approach*. Retrieved from https://www.jica.go.jp/english/publications/brochures/c8h0vm0000avs7w2-att/japan_brand_07.pdf
- JITCO. (2019). *JITCO provides comprehensive support for the Technical Intern Training Program*. Retrieved February 15, 2019, from <https://www.jitco.or.jp/en/>
- Joffre, O. M., Bosma, R. H., Bregt, A. K., van Zwieten, P. A. M., Bush, S. R., & Verreth, J. A. J. (2015). What drives the adoption of integrated shrimp mangrove aquaculture in Vietnam? *Ocean and Coastal Management*, 114, 53–63. <https://doi.org/10.1016/j.ocecoaman.2015.06.015>
- Kato, H., Page, J., & Shimomura, Y. (Eds.). (2016). *Japan's Development Assistance*. London: Palgrave Macmillan UK. <https://doi.org/10.1057/9781137505385>

- Kawai, M., & Takagi, S. (2001). *Japan's Official Development Assistance: Recent issues and future directions* (the world bank policy research working paper 2722). Retrieved from <https://openknowledge.worldbank.org/handle/10986/19435>
- Kelley, D. R., Stunkel, K. R., & Wescott, R. R. (1976). *Economic superpowers and the environment: the United States, the Soviet Union, and Japan*. WH Freeman and Company, San Francisco.
- Kemerink-Seyoum, J. S. (2017). *Everyday politics of water : From water reform policies to water resource configurations in rural Africa*.
- Kobayashi, H. (2015). *Manchurian Railway Investigation Department*.
- Kobayashi, M. (2013). Business Environment in Vietnam and the Local Operation of Japanese Companies. *Business Review-Senshu University*, 8(1), 1–9. Retrieved from <http://repository.tku.ac.jp/dspace/bitstream/11150/1080/1/keiei278-11.pdf>
- Kondolf, G. M., Schmitt, R. J. P., Carling, P., Darby, S., Arias, M., Bizzi, S., ... others. (2018). Changing sediment budget of the Mekong: Cumulative threats and management strategies for a large river basin. *Science of The Total Environment*, 625, 114–134.
- Kono, Y. (2001). Canal development and intensification of rice cultivation in the Mekong Delta: A case study in Cantho Province, Vietnam. *Southeast Asian Studies*, 39(1), 70–85.
- Kontgis, C., Schneider, A., Fox, J., Saksena, S., Spencer, J. H., & Castrence, M. (2014). Monitoring peri-urbanization in the greater Ho Chi Minh City metropolitan area. *Applied Geography*, 53, 377–388. <https://doi.org/10.1016/j.apgeog.2014.06.029>
- Kotsila, P., & Saravanan, V. S. (2017). Biopolitics Gone to Shit? State Narratives versus Everyday Realities of Water and Sanitation in the Mekong Delta. *World Development*, 93, 374–388. <https://doi.org/10.1016/j.worlddev.2017.01.008>
- Kuenzer, C., & Renaud, F. G. (2012). Climate and Environmental Change in River Deltas Globally: Expected Impacts, Resilience, and Adaptation. In F. G. Renaud & C. Kuenzer (Eds.), *The Mekong Delta System*. Dordrecht: Springer Netherlands. <https://doi.org/10.1007/978-94-007-3962-8>
- Luchtenbelt, A. W. (2015). *Nederlandse ingenieursbureaus in het buitenland: alleen of samen sterk? Een vergelijking tussen de samenwerkingsverbanden Nedeco en het NWP*. Utrecht. Retrieved from <https://dspace.library.uu.nl/handle/1874/330547>
- Matsukata, F. (2011). *Dutch Letters to Japanese government during isolation period (original: オランダ風説書)*. Chuko Shinsho (中公新書).
- McEvoy, S., van de Ven, F. H. M., Blind, M. W., & Slinger, J. H. (2018). Planning support tools and their effects in participatory urban adaptation workshops. *Journal of Environmental Management*, 207, 319–333. <https://doi.org/10.1016/j.jenvman.2017.10.041>
- Meijerink, S. (2005). Understanding policy stability and change. the interplay of advocacy coalitions and epistemic communities, windows of opportunity, and Dutch coastal flooding policy 1945–20031. *Journal of European Public Policy*, 12(6), 1060–1077. <https://doi.org/10.1080/13501760500270745>
- Meijerink, S., & Huitema, D. (2017). The institutional design, politics, and effects of a bioregional approach: observations and lessons from 11 case studies of river basin organizations. *Ecology and Society*, 22(2), art41. <https://doi.org/10.5751/ES-09388-220241>
- MoFA Japan. (2004). Japan's ODA: Accomplishment and Progress of 50 Years. Retrieved February 14, 2019, from <https://www.mofa.go.jp/policy/oda/cooperation/anniv50/pamphlet/progress1.html>

- MoFA Japan. (2015). *Cabinet decision on the Development Cooperation Charter*. Retrieved from <https://www.mofa.go.jp/mofaj/gaiko/oda/files/000067701.pdf>
- MoFA Japan. (2017). Country Assistance Policy for Respective Countries | Ministry of Foreign Affairs of Japan. Retrieved October 30, 2018, from https://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/kuni_enjyo_kakkoku.html
- MoFA Japan. (2018a). ODA record. Retrieved February 15, 2019, from <https://www.mofa.go.jp/mofaj/gaiko/oda/shiryo/jisseki.html>
- MoFA Japan. (2018b). Socialist Republic of Viet Nam. Retrieved September 24, 2018, from <https://www.mofa.go.jp/mofaj/area/vietnam/data.html>
- MoFA the Netherlands. (2013). *A World to Gain: A New Agenda for Aid, Trade and Investment*.
- MoFA the Netherlands. (2017). *Holland compared*. Retrieved from <https://www.dutchwatersector.com/news-events/publications/>
- MoIAC Japan. (2019). Statistics Bureau Home Page/Population Estimates Monthly Report. Retrieved February 15, 2019, from <https://www.stat.go.jp/english/data/jinsui/tsuki/index.html>
- Molle, F. (2008). Nirvana concepts, narratives and policy models: Insights from the water sector. *Water Alternatives*, 1(1), 131–156.
- Molle, F., Foran, T., & Floch, P. (2012). Introduction: Changing waterscapes in the mekong region – historical background and context. *Contested Waterscapes in the Mekong Region: Hydropower, Livelihoods and Governance*, 9781849770, 1–20. <https://doi.org/10.4324/9781849770866>
- Molle, F., Foran, T., & Käkönen, M. (2009). *Contested waterscapes in the Mekong region- Hydropower, Livelihoods and Governance*. (F. Molle, T. Foran, & M. Kakonen, Eds.).
- MRC. (2018). Development Partners & Partner Organisations » Mekong River Commission. Retrieved November 3, 2018, from <http://www.mrcmekong.org/about-mrc/development-partners-and-partner-organisations/>
- Neumayer, E. (2003a). Do Human Rights Matter in Bilateral Aid Allocation? A Quantitative Analysis of 21 Donor Countries. *Social Science Quarterly*, 84(3), 650–666. <https://doi.org/10.1111/1540-6237.8403010>
- Neumayer, E. (2003b). *Explaining the pattern of aid giving*. London: Routledge.
- Neumayer, E. (2003c). The Determinants of Aid Allocation by Regional Multilateral Development Banks and United Nations Agencies. *International Studies Quarterly*, 47(1), 101–122. Retrieved from <https://www.jstor.org/stable/pdf/3096078.pdf>
- Nguyen, H. Q., Korbee, D., Ho, H. L., Weger, J., Phan, T. T. H., Nguyen, T. T. D., ... Ho, L. P. (2019). Farmer adoptability for livelihood transformations in the Mekong Delta: a case in Ben Tre province. *Journal of Environmental Planning and Management*, (March), 1–16. <https://doi.org/10.1080/09640568.2019.1568768>
- NWP. (2018). *Country update: Vietnam*.
- OECD. (2014). *OECD Development Co-operation Peer Reviews: Japan 2014*. OECD Publishing. <https://doi.org/10.1787/9789264218161-en>
- OECD. (2015). Water-related aid data at a glance. Retrieved October 2, 2018, from <http://www.oecd.org/dac/stats/water-relatedaiddataataglace.htm>
- OECD. (2017). *OECD Development Co-operation Peer Reviews: The Netherlands 2017*. OECD Publishing. <https://doi.org/10.1787/9789264278363-en>

- Ohira, T. (2011). The Japanese Settlement in Hoian as a Memorial Spot of Modern Japan. *Historical Geographics (歴史地理学)*, 53(5), 23–40.
- Pallett, J., Heyns, P., Falkenmark, M., Lundqvist, J., Seely, M., Hyden, L., ... Kemper, K. (1997). *Sharing water in southern Africa*. Desert Research Foundation of Namibia.
- Rap, E. (2006). The success of a policy model: Irrigation management transfer in Mexico. *The Journal of Development Studies*, 42(8), 1301–1324. <https://doi.org/10.1080/00220380600930606>
- Renaud, F. G., Syvitski, J. P. M., Sebesvari, Z., Werners, S. E., Kremer, H., Kuenzer, C., ... Friedrich, J. (2013). Tipping from the Holocene to the Anthropocene: How threatened are major world deltas? *Current Opinion in Environmental Sustainability*, 5(6), 644–654. <https://doi.org/10.1016/j.cosust.2013.11.007>
- RoyalHaskoningDHV, Wageningen UR, & Deltares. (2013). *Mekong Delta Plan: Long-term vision and strategy for a safe, prosperous and sustainable delta*. Retrieved from <http://mekongdeltaplan.tijdelijkhier.nl/storage/files/files/mekong-delta-plan.pdf?1>
- Sakamoto, T., Cao Van, P., Kotera, A., Nguyen Duy, K., & Yokozawa, M. (2009). Detection of yearly change in farming systems in the Vietnamese Mekong Delta from MODIS time-series imagery. *Japan Agricultural Research Quarterly*, 43(3), 173–185. <https://doi.org/10.6090/jarq.43.173>
- Schmeier, S. (2012). *Governing international watercourses : river basin organizations and the sustainable governance of internationally shared rivers and lakes*. Routledge.
- Seijger, C., Douven, W., van Halsema, G., Hermans, L., Evers, J., Phi, H. L., ... Hoang, V. T. M. (2017). An analytical framework for strategic delta planning: negotiating consent for long-term sustainable delta development. *Journal of Environmental Planning and Management*, 60(8), 1485–1509. <https://doi.org/10.1080/09640568.2016.1231667>
- Seijger, C., Hoang, V. T. M., van Halsema, G., Douven, W., & Wyatt, A. (2019). Do strategic delta plans get implemented? The case of the Mekong Delta Plan., 1–23. <https://doi.org/10.1007/s10113-019-01464-0>
- Seijger, C., Otter, H. S., van Tatenhove, J., & Dewulf, G. (2016). Socially robust knowledge in coastal projects. *Environmental Science and Policy*, 55, 393–407. <https://doi.org/10.1016/j.envsci.2015.03.004>
- Seki, M. (2004). *Japanese factories moving into Southern Vietnam (original: ベトナム南部に進出する日本企業)*. Retrieved from <https://www.rieti.go.jp/jp/publications/summary/04070007.html>
- Sekiguchi, K. (2012). Superiority by region in offshore out sourcing business (original: オフショア・アウトソーシング・ビジネスにおける地域優位性). *Magazine of Tokyo Economic University*, 199–218. Retrieved from <http://repository.tku.ac.jp/dspace/bitstream/11150/1080/1/keiei278-11.pdf>
- Senda, M. (1992). Japan's traditional view of nature and interpretation of landscape. *GeoJournal*, 26(2), 129–134. <https://doi.org/10.1007/BF00241206>
- Shiraishi, M. (2018). The future of Vietnam-Japan relationship through the historic connection (original: 関係史から見えてくる日越関係の将来[Japanese]). Retrieved from <http://www.sief.jp/21/2018/bundai201802.pdf>
- Soeya, Y. (1992). Structure of postwar Japanese diplomacy(戦後日本外交の構図). *Journal of Law, Politics, and Sociology*, 65(2), 79–101.
- Spitz, G., Muskens, R., & van Ewijk, E. (2013). The Dutch and Development Cooperation: Ahead of the Crowd or Trailing Behind?, 50.

- Swedlund, H. J. (2017). Is China eroding the bargaining power of traditional donors in Africa? *International Affairs*, 93(2), 389–408. <https://doi.org/https://doi.org/10.1093/ia/iw059>
- Swyngedouw, E. (2015). *Liquid power: Contested hydro-modernities in twentieth-century Spain*. MIT Press.
- Syvitski, J. P. M., Kettner, A. J., Overeem, I., Hutton, E. W. H., Hannon, M. T., Brakenridge, G. R., ... Nicholls, R. J. (2009). Sinking deltas due to human activities. *Nature Geoscience*, 2(10), 681–686. <https://doi.org/10.1038/ngeo629>
- Szabo, S., Brondizio, E., Renaud, F. G., Hetrick, S., Nicholls, R. J., Matthews, Z., ... Dearing, J. A. (2016). Population dynamics, delta vulnerability and environmental change: comparison of the Mekong, Ganges–Brahmaputra and Amazon delta regions. *Sustainability Science*, 11(4), 539–554. <https://doi.org/10.1007/s11625-016-0372-6>
- Tacoli, C. (2009). Crisis or adaptation? Migration and climate change in a context of high mobility. *Environment and Urbanization*, 21(2), 513–525. <https://doi.org/10.1177/0956247809342182>
- Takahashi, R. (2006). The Inverse Relationship in Agriculture in Viet Nam: Farm Size and Employment in the Mekong River Delta [Japanese]. *Southeast Asian Studies*, 44(2), 223–249. Retrieved from <http://www.scopus.com/inward/record.url?eid=2-s2.0-33846378423&partnerID=tZOtx3y1>
- Takemura, K. (2007). The historical process of river administration during the period of modernization in Japan(original: 日本の近代化における河川行政の変遷). *Nippon Suisan Journal*, 73(1), 103–107. Retrieved from https://www.jstage.jst.go.jp/article/suisan/73/1/73_1_103/_pdf
- Taniguchi, M. (2015). The Basic Act on the Water Cycle with groundwater, 83–90.
- Tran, D. D., van Halsema, G., Hellegers, P. J. G. J., Ludwig, F., & Seijger, C. (2018). Stakeholders' assessment of dike-protected and flood-based alternatives from a sustainable livelihood perspective in An Giang Province, Mekong Delta, Vietnam. *Agricultural Water Management*, 206(April), 187–199. <https://doi.org/10.1016/j.agwat.2018.04.039>
- Triet, N. V. K., Dung, N. V., Fujii, H., Kumm, M., Merz, B., & Apel, H. (2017). Has dyke development in the Vietnamese Mekong Delta shifted flood hazard downstream? *Hydrology and Earth System Sciences*, 21(8), 3991–4010. <https://doi.org/10.5194/hess-21-3991-2017>
- Umetani, N. (2007). *Yatoi: Employed foreigners, who supported modernization of Japan* (original: お雇い外国人 明治日本の脇役たち). 講談社(Kodansha).
- UNDP Vietnam. (2016). *VIET NAM DROUGHT AND SALTWATER INTRUSION: Transitioning from Emergency to Recovery*.
- van Staveren, M. F., & van Tatenhove, J. P. M. (2016). Hydraulic engineering in the social-ecological delta: Understanding the interplay between social, ecological, and technological systems in the Dutch delta by means of “delta trajectories.” *Ecology and Society*, 21(1). <https://doi.org/10.5751/ES-08168-210108>
- van Staveren, M. F., van Tatenhove, J. P. M., & Warner, J. F. (2018). The tenth dragon: controlled seasonal flooding in long-term policy plans for the Vietnamese Mekong delta. *Journal of Environmental Policy & Planning*, 20(3), 267–281. <https://doi.org/10.1080/1523908X.2017.1348287>
- Wade, R. (1996). Japan, the World Bank, and the Art of Paradigm Maintenance: The East Asian Miracle in Political Perspective. In *new left review* (pp. 3–37).
- Waibel, G., Benedikter, S., Reis, N., & Genschick, S. (2012). Water Governance Under Renovation? Concepts and Practices of IWRM in the Mekong Delta, Vietnam. In F. G. Renaud & C. Kuenzer (Eds.). Dordrecht: Springer Netherlands. <https://doi.org/10.1007/978-94-007-3962-8>

- Watanabe, A. (2015). A Turning Point in the Policy of Water Cycle : Under the Enactment[Japanese]. *Shiga University Environmental Research Center: 滋賀大学環境総合研究センター研究年報*, 37–54.
- WB. (2018). Population growth (annual %) | Data. Retrieved December 5, 2018, from <https://data.worldbank.org/indicator/SP.POP.GROW>
- WB, & GFDRR. (2017). Toward Integrated Disaster Risk Management in Vietnam. Recommendations based on the drought and saltwater intrusion crisis and the case for investing in long-term resilience, 23.
- Wesselink, A. (2016). Trends in flood risk management in deltas around the world: Are we going 'soft'? *International Journal of Water Governance*, 4(4), 25–46. <https://doi.org/10.7564/15-IJWG90>
- White, I. (2002). *Water Management in the Mekong Delta: Changes, Conflicts and Opportunities. Technical Documents in Hydrology, UNESCO.*
- Woltjer, J., & Al, N. (2007). Integrating water management and spatial planning: Strategies based on the Dutch experience. *Journal of the American Planning Association*, 73(2), 211–222. <https://doi.org/10.1080/01944360708976154>
- Wyatt, A. B., & Baird, I. G. (2007). Transboundary impact assessment in the Sesan River Basin: The case of the Yali Falls Dam. *International Journal of Water Resources Development*, 23(3), 427–442. <https://doi.org/10.1080/07900620701400443>
- Yasunobu, K., Tuyen, N. Q., & Yamada, R. (2000). Factors Influencing the Establishment of VAC Farming Systems in the Mekong Delta, Vietnam (original: ベトナム、メコンデルタにおける農畜水複合経営と部門規模). *Japanese Journal of Farm Management*, 38(2), 1–13.
- Zegwaard, A., Petersen, A. C., & Wester, P. (2015). Climate change and ontological politics in the Dutch Delta. *Climatic Change*, 132(3), 433–444. <https://doi.org/10.1007/s10584-014-1259-0>
- Zeitoun, M., & Warner, J. (2006). Hydro-hegemony - A framework for analysis of trans-boundary water conflicts. *Water Policy*, 8(5), 435–460. <https://doi.org/10.2166/wp.2006.054>
- Zwarteveen, M., Kemerink-Seyoum, J. S., Kooy, M., Evers, J., Guerrero, T. A., Batubara, B., ... Wesselink, A. (2017). Engaging with the politics of water governance. *Wiley Interdisciplinary Reviews: Water*, e01245. <https://doi.org/10.1002/wat2.1245>

Appendices

Appendix 1) DAC countries' and multilateral donors' ODA in total of all sectors during 2008 to 2016

| Dataset: Creditor Reporting System (CRS) | | | | | | | | | | | | | |
|--|---|---------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------------|------------|
| Recipient | | Viet Nam | | | | | | | | | | | |
| Sector | | 1000: Total All Sectors | | | | | | | | | | | |
| Flow | | Official Development Assistance | | | | | | | | | | | |
| Unit | | US Dollar, Millions, 2016 | | | | | | | | | | | |
| Year | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | order | total: 2008-16 | order |
| Donor | | | | | | | | | | | | | |
| All Donors, Total | | 3,678.620 | 5,189.523 | 3,690.488 | 5,321.921 | 4,306.582 | 5,897.926 | 3,724.829 | 4,601.669 | 5,235.497 | .. | 41,647.056 | .. |
| DAC Countries, Total | | 2,117.345 | 3,295.118 | 2,085.901 | 3,300.229 | 2,459.590 | 3,410.565 | 2,345.221 | 2,774.003 | 3,508.388 | | 25,296.359 | |
| DAC Countries, | Australia | 67.108 | 154.196 | 198.422 | 100.699 | 105.977 | 114.344 | 104.408 | 104.102 | 54.179 | 1.0% | 1,003.436 | 2.4% |
| | Austria | 22.492 | 1.127 | 3.067 | 19.022 | 17.691 | 12.411 | 5.359 | 8.174 | 7.544 | 0.1% | 96.887 | 0.2% |
| | Belgium | 42.048 | 27.766 | 25.983 | 32.029 | 35.708 | 42.404 | 24.661 | 5.813 | 15.189 | 0.3% | 251.602 | 0.6% |
| | Canada | 18.809 | 12.872 | 35.848 | 33.896 | 16.332 | 23.307 | 22.087 | 23.088 | 4.637 | 0.1% | 190.878 | 0.5% |
| | Denmark | 78.477 | 21.592 | 42.799 | 38.674 | 22.229 | 9.798 | 7.038 | 10.792 | 6.791 | 0.1% | 238.190 | 0.6% |
| | Finland | 27.556 | 60.353 | 29.017 | 40.806 | 27.193 | 12.616 | 21.190 | 5.413 | 3.340 | 0.1% | 227.481 | 0.5% |
| | France | 80.549 | 228.185 | 284.361 | 196.278 | 118.600 | 160.384 | 196.029 | 86.391 | 173.376 | 5 | 1,524.154 | 5 |
| | Germany | 97.981 | 72.251 | 237.459 | 436.681 | 139.283 | 283.050 | 348.952 | 138.668 | 350.189 | 3 | 2,104.513 | 4 |
| | Italy | 4.442 | 42.351 | 15.067 | 3.561 | 1.806 | 16.324 | 4.336 | 2.231 | 1.664 | | 91.781 | 0.2% |
| | Japan | 981.764 | 1,951.328 | 634.948 | 1,934.687 | 1,468.018 | 2,272.453 | 1,225.938 | 1,791.087 | 2,511.824 | 1 | 14,772.047 | 1 |
| | Netherlands | 16.964 | 29.565 | 2.987 | 0.605 | 0.164 | 1.139 | .. | 0.130 | 0.281 | | 51.835 | 0.1% |
| | New Zealand | 8.702 | 5.027 | 20.087 | 14.630 | 9.214 | 2.736 | 3.854 | 4.153 | 10.161 | | 78.563 | 0.2% |
| | Norway | 23.666 | 14.178 | 8.749 | 41.042 | 27.192 | 8.741 | 27.457 | 5.550 | 7.522 | | 164.097 | 0.4% |
| | Portugal | .. | 0.006 | 0.000 | 0.029 | 0.020 | 0.024 | 0.027 | 0.037 | 0.031 | | 0.175 | 0.0% |
| | Spain | 39.629 | 14.540 | 22.118 | 6.214 | 5.983 | 0.113 | 0.169 | 0.164 | 0.062 | | 88.992 | 0.2% |
| | Sweden | 10.853 | 20.541 | 14.841 | 10.548 | 6.783 | 2.010 | 2.219 | 0.367 | 1.090 | | 69.251 | 0.2% |
| | Switzerland | 32.725 | 19.958 | 28.290 | 30.312 | 23.106 | 38.513 | 12.999 | 27.774 | 20.964 | | 234.641 | 0.6% |
| | United Kingdom | 161.000 | 97.126 | 22.231 | 12.987 | 13.453 | 8.373 | 10.960 | 16.040 | 7.173 | | 349.345 | 0.8% |
| | United States | 96.050 | 115.307 | 116.666 | 115.414 | 111.575 | 109.628 | 82.307 | 93.506 | 121.948 | | 962.400 | 2.3% |
| | Multilaterals, Total | | 1,561.274 | 1,894.396 | 1,591.333 | 2,007.794 | 1,834.007 | 2,487.358 | 1,379.609 | 1,814.388 | 1,715.739 | | 16,285.899 |
| Multilaterals | AsDB Special Funds | 429.648 | 467.447 | 361.370 | 354.065 | 344.247 | 551.923 | 96.853 | 464.224 | 177.604 | 4 | 3,247.381 | 3 |
| | EU Institutions | 75.918 | 16.438 | 78.507 | 21.063 | .. | 312.899 | 98.319 | 0.035 | 121.643 | * | 724.821 | 1.7% |
| | International Development Association [IDA] | 986.291 | 1,368.183 | 998.677 | 1,493.276 | 1,369.466 | 1,341.494 | 1,001.745 | 1,193.458 | 1,205.000 | 2 | 10,957.589 | 2 |
| | IFAD | 17.710 | .. | 63.976 | .. | .. | 51.371 | 8.976 | 9.956 | 43.000 | | 194.990 | 0.5% |

Data extracted on 05 Oct 2018 21:29 UTC (GMT) from OECD.Stat
<https://stats.oecd.org/Index.aspx>

Appendix 2) Interview Guidelines (by type of interviewee)

| type | Information needed | Possible Questions |
|-------------------------------------|---|--|
| Governmental, semi-governmental | <ul style="list-style-type: none"> - Context - Driver - Arenas - Decisions - Perceptions | <ol style="list-style-type: none"> 1) What is the role of the institution, and interviewee's main activity in relation to strategic delta planning and implementation process (basic info) 2) Who are other actors (other ministries, Vietnamese counterparts) involved in your work described in Q1? Who has what kind of autonomy (in terms of expertise/knowledge and financial resource)? (Context, Arena) 3) What is the procedure of project planning, procurement of contractors and evaluation? (Driver) 4) (if applicable) Why your institution/government distinguish Vietnam as important partner? (Driver) 5) In institutional level, what can be the definition of "success" of the delta plan/ implementation? Do you have personally different view on success? If so, what would be your definitions? (Drivers, Decisions) 6) (if applicable) Does your institution have mitigation mechanisms for negative impact of the project (such as EIA/SEA)? Are there additional measures taken based on the mechanism? What is the time scale and spatial scale for the mechanism? (Driver) 7) What do you think the impact of the activities you are involved to the water flow (quantity, quality and the risk) in Mekong delta? 8) (if applicable) Have you encountered Japanese cooperation actors/projects in the course of Mekong delta related work? What was the interactions with them? 9) Did you recognise any synergy or interference from their activities? If so, what kind of? |
| Experts, researchers, practitioners | <ul style="list-style-type: none"> - Driver - Arenas - Decisions - Perceptions | <ol style="list-style-type: none"> 1) What is the role of your institution, and your main activity in relation to strategic delta planning and implementation process (basic info) 2) Who are other actors (governmental institutions, partners such as collaborators or rivals, counterparts) involved in your work described in Q1? Who has what kind of autonomy (in terms of expertise/knowledge and financial resource)? (Arena) 3) What is the procedure of proposal writing, forming JV and how the proposal and projects will be evaluated? (Driver) 4) In institutional level, what can be the definition of "success" of the delta plan or its implementation? Do you have different view of success personally compared to the institution you belong to? If so, what would be your definitions? (Drivers, Decisions) |

| | | |
|------|--|--|
| | | <p>5) What do you think the impact of the activities you are involved to the water flow (quantity, quality and the risk) in Mekong delta?</p> <p>6) (if applicable) Have you encountered Japanese /Dutch cooperation actors/projects in the course of Mekong delta related work? What was the interactions with them?</p> |
| NGOs | <ul style="list-style-type: none"> - Arenas - Perceptions - (possible) Impacts | <p>1) What is the role of your institution, and your main activity in relation to development project that is planned or implemented in Mekong delta? (basic info)</p> <p>2) Who are other actors (governmental institutions, collaborators or rivals, counterparts, funder/ financial supporter) involved in your work described in Q1? Who has what kind of autonomy (in terms of expertise/knowledge and financial resource)? (Arena)</p> <p>3) What are the projects that you are observing/researching in Mekong delta (including upstream)? Which project(s) is most impactful (positive and negative) in terms of water flow and risk distribution in the Mekong delta, and why do you think so?</p> <p>4) What do you think would be the future vision for the Mekong delta? And what will be the activities you are considering to implement to achieve the vision?</p> |